Planetary Science
Data Dictionary Document

A Cooperative Publication of the Planetary Data System project and the Advanced Multimission Operations System

August 28, 2002

Jet Propulsion Laboratory
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JPL D-7116, Rev. E

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PREFACE

This document is a cooperative publication of the Planetary Data System (PDS) project and the Advanced Multimission Operations System (AMMOS -- formerly the Space Flight Operations Center, or SFOC) project and reflects a set of standards for the cataloging of mission science and operations data. The standards were derived initially from PDS documentation. Most of the data element names and definitions were compiled over the past seven years by scientists and engineers affiliated with the PDS. These were originally published in the PDS Data Dictionary. Other entries were adopted from the SFOC Data Dictionary. The effort to compose a Planetary Science Data Dictionary reflects the growing cooperation between the AMMOS and PDS in their support of the Mars Observer mission, since these are the primary data systems that will curate mission data during the length of the project and afterward.

This document and the master data dictionary database are maintained by the PDS Central Node (CN) and David Wagner (representing AMMOS). However, the heart of this PSDD lies in the data modelling and mission interface work done in the PDS Object Review Committee at the Jet Propulsion Laboratory, with significant guidance provided by the staff at PDS Discipline Nodes. Members who contributed to the PSDD include:

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The document's contents are for the most part automatically-formatted and typeset database reports from a master data dictionary database. This database is used to maintain configuration management over the data dictionary elements, and the PDS operational data dictionary database contents are based on it.

It is the sincere hope of the producers that the Index and the cross-referencing Data Element Classified Listings (Appendix F) will make this document an easily-referenced manual, despite its size and diverse content. Users are directed to read the section entitled Document Format (Section 1.5) so that they may use only parts of the document that are appropriate, as well as How to Use This Document (Section 1.7) for instruction on how to read the entries.

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SECTION 1

INTRODUCTION

1.1 PURPOSE

The primary purpose of the Planetary Science Data Dictionary (PSDD) is to allow members of the planetary science community to benefit from standards work done in the area of data product description. The work that supports it is done at the Jet Propulsion Laboratory by individuals who participate in U.S. and international standards efforts. As a result the PSDD may serve as a guide to other data systems still in development, or to data systems that will eventually be connected with either PDS or AMMOS.

The secondary purpose of the PSDD is to serve as an interface agreement between the Planetary Data System (PDS) and the Multimission Ground Data System (MGDS) development effort of AMMOS. It is designed to reflect points of agreement between the two projects, as well as to chronicle applications or decisions on which project representatives agree to a limited set of standards.

1.2 SCOPE

This document will serve as standard reference for data product descriptions contained in the Planetary Data System and Multimission Ground Data System data catalogs. By extension, this means that it will be used in planetary mission operations and in science processing in support of all JPL-managed planetary missions. It also means that it will serve the data systems that exist at PDS Discipline Node sites.

In this edition of the PSDD, data elements describing scientific experiments reflect PDS' extensive experience with imaging and plasma data sets. Over time, as more diverse data sets are handled by the PDS and SFOC catalogs, data elements germane to other scientific investigations will be incorporated into the dictionary.

1.3 PSDD ONLINE AVAILABILITY

In order to get the most recent entries in the PSDD, users may query the online database directly. For information regarding log-in procedures, please contact the PDS Operator at (818) 393-7165, via NSI/DECnet at JPLPDS::PDS_OPERATOR, or via Internet at pds_operator@jplpds.jpl.nasa.gov.

1.4 APPLICABLE DOCUMENTS

The following documents define standards or requirements affecting the content of this document:

1. Planetary Data System Standards Reference, JPL D-7669, Version 3 (November, 1992).

The following documents provide additional information related to the contents of this document:

2. Space Flight Operations Center Software Interface Specification, module SFOC-1-CDB-Any-Catalog2 (February, 1992).

1.5 DOCUMENT FORMAT

The Planetary Science Data Dictionary is composed of three main sections: standards for naming and describing data elements, an annotated list of data elements, and a set of appendices to show how the elements are used. The cores of the dictionary, data elements definitions, are arranged in a single list in alphabetical order. After some debate, the editors opted to show only valid data elements in this main section. Aliases are listed in a separate appendix. However, aliases, data element names, and object names are all listed in the index.

Most of the valid data elements that appear in the document are appropriate for common use -- that is, they have been defined in terms that allow them to be used in many systems or disciplines. Others are more appropriate to specific computing environments, data systems, or flight projects. These data elements are identified as such on the status line by a bracketed expression as follows:

CORE_UNIT [ISIS]

The bracketed expressions provide a qualification (or caveat for the user) to indicate that the data element's definition may be applicable only within a certain system's context. Any of the [PDS ...] elements can be used for other applications; prospective users need only work with the PDS to improve or broaden the definition to embrace the new use.

However, the [JPL-AMMOS-SPECIFIC] keywords are exceptions. The AMMOS data elements must not be used in PDS labels because of one or more of the following situations: 1) they are specific to the AMMOS data processing environment, 2) they are still pending approval for inclusion in the common list, or 3) they do not meet PDS nomenclature standards. AMMOS-SPECIFIC DATA ELEMENT NAMES MAY BE USED ONLY ON DATA PRODUCTS THAT ARE NOT BOUND FOR THE PDS. Only in the rarest of cases will PDS aliases be set up to accommodate these terms.

Note: Although these "qualified" data elements may continue to appear in the PSDD, it is the goal of the dictionary's designers in PDS and AMMOS to have new data elements submitted with definitions general enough to be applicable to any system or mission.

Appendix contains a listing of data elements classified according to the system in which it finds primary use.

1.6 CHANGE CONTROL PROCEDURE

This document is being published separately by AMMOS and PDS under the same JPL document number. This allows for each project's configuration management and documentation systems to control the document independently. By agreement between AMMOS and PDS updates to this document will be generated on a regular schedule, produced jointly, and submitted separately to their respective documentation systems for publication and distribution.

The common elements (those that do not pertain to a particular data system) are currently defined by agreement between AMMOS and PDS and managed by the PSDD data administrator in the master data dictionary database. Elements that are defined by any other data system may be proposed for inclusion in the dictionary. Those that are acceptable to both systems will be included in the common list. Changes or additions may be submitted to either system.

1.7 HOW TO USE THIS DOCUMENT

This document is intended to serve several purposes. First, it serves as a reference manual to users of the PDS and AMMOS data systems to define the data attributes used to describe data and meta-data. Second, it serves as a reference to producers of data products that are to be included in these systems to aid in the design of data descriptions.

The first type of users will be primarily interested in the definitions of data elements. These are presented in a single alphabetical list. This document also provides a general index for terms, and a classified listing where data elements are grouped under headings such as "Mission/Spacecraft Data Element", or "Geometric/Navigation Data Elements."

The second type -- the product producers -- is expected to use the document differently. A producer generally knows how to describe a data product, but needs to find the appropriate keywords to represent those attributes in data descriptions. Here too the classified cross-reference may be used to help locate existing keywords. Also provided in this document are standards for defining new keywords. Producers should note that keywords defined on the status line as AMMOS-SPECIFIC may only be used by products unique to AMMOS. More specifically, data products such as Mars Observer science products that will exist in both systems are restricted to using common or [PDS...] elements only.

The element definitions sections are presented in a compact listing format that provides a number of descriptive characteristics of the elements and keys to additional information. The following example illustrates the presentation format.

[1]BANDWIDTH **[2][System-Id]** **[3]REAL[4](0, 1.E32) [5]<Hz>**

[6]The bandwidth element provides a measure of spectral width of a filter or channel.

[1]Element name (keyword)
[2]System Id
[3]General data type
[4]Minimum and maximum values for numeric elements or string length for character elements. If only one value, it is a maximum.
[5]Standard units
[6]Element definition

The general data type is one of the standard general data types defined in section. The standard units' symbols are defined in section.

SECTION 2

DATA DICTIONARY CONVENTIONS

2.1 GENERAL

The standards included in this section refer specifically to the formation of data element names. Please refer to the PDS Standards Reference for information on the formation of names for Data Sets, Data Set Collections, volume names, file names, etc.

2.2 DATA NOMENCLATURE

The PDS data nomenclature standards define the rules for constructing Data Element and Data Object names. The purpose of establishing a standard syntax for such names is to facilitate user access to data. It is particularly important to use common nomenclature in database management systems, where searches are made covering a variety of disciplines, techniques, and flight projects.

Several organizations have succeeded in developing procedures for assigning standardized names to data elements. The method adopted by the PDS is a derivative of the "OF language" developed by IBM. It also follows closely the publication Guide on Data Entity Naming Conventions, NBS Special Publication 500-149.

The objective of this naming convention is to create an environment wherein any number of individuals, working independently, will select the identical name for the same data item. If achieved, this objective eliminates multiple names for the same item (synonyms), and duplicate names for different elements (homonyms). The task of browsing data dictionaries by those who are unfamiliar with its contents would be greatly simplified. There would be greater consistency within the system, thus correlative analyses would be better supported.

The construction rules must yield data names that are easily grasped, are as consistent as possible with the common usage within the science community, and are also logically and methodically constructed, ideally from a predefined dictionary of component terms.

2.2.1 DATA ELEMENT NOMENCLATURE STANDARDS

2.2.1.1 Construction of Data Element Names

Data element name are composed of descriptor words (which describe what is being measured or presented in the value field) and class words (which can identify the data type of the object). Data element names are constructed using these components from left to right, from most specific (the leftmost component) to most generic (the rightmost component).

This document contains the standard data element names used to describe data products. An understanding of the syntax is necessary for two purposes: 1) as an aid in finding an already existing data element and 2) creating a new data element for inclusion in the data dictionary.

All data element names are constructed from standard ASCII alphanumeric characters and the underscore character. No special characters (e.g., "&", "*", etc.) are permitted. The first character of the first component of a data element name must be alphabetic.

The naming syntax is not case-sensitive. For example, the following constructs represent the same data element name:

data_set_parameter_name

DATA_SET_PARAMETER_NAME

Data_Set_Parameter_Name

2.2.1.2 **Order of Terms in Element Names**

The structure of a data element name is as follows; the most specific component is placed first, the next most specific, etc., terminating with the least specific or most general.

For example, consider a phrase such as "the name of a parameter in a data set". Removing the articles and prepositions yields "name parameter data set". The most general component here is "name", and therefore is placed last in the hierarchy. Next, ask the question "name of what?" The answer is "name of a parameter", which indicates that "parameter" is more specific than "name". The question "what kind of parameter?" is answered by "data set", the most specific component. Therefore, the data object name is data_set_parameter_name.

Other examples include:

"Unit of the data set parameter" translates into
data_set_parameter_unit

"Type of the host of an instrument" translates into
instrument_host_type

Components used in the nomenclature syntax are also categorized in two groups as DESCRIPTORS or CLASS WORDS. The format of a data element name is as follows:

data object name := [DESCRIPTOR(S) connector]* CLASS WORD

where connector is the underscore (_).

The components in the data element name are connected by an underscore (_) unless it is not supported by hardware or software, in which case the connecter is a hyphen (-).

A list of many components in current use can be found in Appendix H of this document.

2.2.1.3 **Guidelines for addition of new data element names**

Questions frequently arise as to whether to form a new data element, or to find an existing one that works and amplify the definition. Since a data dictionary is a controlled vocabulary, the general rule for administrators is to avoid proliferation of new terms. As a result, the PSDD makes broad use of the Note: convention, whereby system- or mission-specific qualifications to the general definition are acknowledged. In other cases the base definition itself is expanded to include alternate meanings.

However, addition of a new data element is called for if the domain for the new data element differs from the existing one -- and/or if that domain is used for validation of the values associated with the data element. For example: data_type has an exhaustive list of machine-specific standard values. However, bit_data_type has only a subset of these. If it matters to the system that the values for the qualified term be restricted (bit_data_types only), then the more specific term should be added. On the other hand, if the values comprise a proper subset of the more general term, and if the online validation for that element is not crucial, the guideline is to continue with the broader term and, if necessary, add a note.

2.2.2 CLASS WORDS

Class words comprise the right most component in a data element name. The class word identifies the basic "information type" of the data object, where information type includes both the data type (numeric, character, logical) and a size constraint.

The use of a limited set of class words will:

1. Reduce the need for users and data processing software to access a data dictionary to parse, interpret, query or display values.

2. Add a greater level of structure and consistency to the nomenclature.

3. Constrain the selection and use of data values.

4. Promote automated operations such as validity checking.

5. Promote the development of intelligent software.

If no class word is used as the rightmost component in a data element name the class word "value" is assumed to be the last component term in a data object name. For example, one would construct MAXIMUM_EMISSION_ANGLE or SOLAR_CONSTANT, as opposed to MAXIMUM_EMISSION_ANGLE_VALUE and SOLAR_CONSTANT_VALUE. When the class word "count" would be appropriate, the data element name can be abbreviated by making the descriptor word a plural. The plural form implies "the number of something", for example, "the number of bytes in a record".

For example:

Data Element	**PDS Data Element Name**
number of bytes in record	record_bytes
number of records in file	file_records
number of label records in file	label_records
number of samples in line	line_samples
number of suffix bytes in line	line_suffix_bytes

The following list enumerates the Class Words used at present, along with brief definitions.

CLASS WORD	CLASS WORD DEFINITION
count	A numeric value indicating a current total or tally. The class word count is implied by the use of plural descriptor words such as lines, bytes or bits. For example, LINES = 800 is interpreted as LINE_COUNT = 800.
date	A representation of time in which the smallest unit of measure is a day. The value is expressed in one of the standard forms. Example: PUBLICATION_DATE = 1959-05-30
description	A free-form, unlimited-length character string that provides a description of the item identified. Example: MISSION_DESC provides the description of a mission, as in The Magellan spacecraft was launched from the Kennedy Space Center on May 5, 1989. The spacecraft was deployed from the Shuttle cargo bay.... See also: the class word TEXT. Note: In the PDS, this term is abbreviated to DESC in every instance except when the word is unqualified. Hence, the data element name DESCRIPTION is spelled out, but INSTRUMENT_DESC contains the abbreviation.
direction	A literal value indicating the line or course on which something is moving, pointing or facing. For example, NORTH, SOUTH, INGRESS, EGRESS, RETROGRADE, PROGRADE
flag	A boolean condition indicator, limited to two states. Example: PLANETARY_OCCULTATION_FLAG = Y
format	A specified or predetermined arrangement of data within a file or on a storage medium.
group	Names a collection or aggregation of elements. Example: ALT_FLAG_GROUP
id	A shorthand alphanumeric identifier. In some cases, a notation representing a shortened name of an NAME. See abbreviation standard. See also: 'name'. Example: SPACECRAFT_ID = VG1
mask	An unsigned numeric value representing the bit positions within a value. Example: SAMPLE_BIT_MASK = 2\#00011111\#
name	A literal value representing the common term used to identify an element. See also: 'id'. Example: SPACECRAFT_NAME = MAGELLAN.
note	A textual expression of opinion, an observation, or a criticism; a remark.
number	A quantity associated with an NAME. Example: START_SAMPLE_NUMBER = 5
range	Numeric values which identify the starting and stopping points of an interval. Note: the use of the descriptor word 'distance' supersedes the use of the word 'range' as a

measure of linear separation See: 'distance'. Example: IRAS_CLOCK_ANGLE_RANGE

ratio	The relation between two quantities with respect to the number of times the first contains the second. Example: DETECTOR_ASPECT_RATIO
sequence	1) an arrangement of items in accordance with some criterion that defines their spacewise or timewise succession; 2) an orderly progression of items or operations in accordance with some rule, such as alphabetical or numerical order.
set	A collection of items having some feature in common or which bear a certain relation to one another, e.g. all even numbers.
summary	An abridged description. Example: SCIENTIFIC_OBJECTIVES_SUMMARY
text	A free-form, unlimited length character string that represents the value of a data element. Example: ADDRESS_TEXT provides the value of an address, such as 4800 Oak Grove Dr. Pasadena, CA 91109. In contrast, ADDRESS_DESC would describe an address such as An address consists of a street, city, state, and zip code. See also: the class word DESCRIPTION.
time	A value that measures the point of occurrence of an event expressed as date and time in a standard form. Example: START_TIME = 1987-06-21T17:30:30.00
type	A literal that indicates membership in a predefined class. See: standard values for data elements. Example: TARGET_TYPE = PLANET
unit	A determinate quantity adopted as a standard of measurement.
value	The default class word for data element names not terminated with a class word. It represents the amount or quantity of a data element. For example, SURFACE_TEMPERATURE = 98.6 would be interpreted as SURFACE_TEMPERATURE_VALUE = 98.6.
vector	A quantity that has both length and direction which are independent of both the units and of the coordinate system in which each are measured. The vector direction is uniquely defined in terms of an ordered set of components with respect to the particular coordinate system for which those components have been defined.

2.2.3 DESCRIPTOR WORDS

There are two sources from which to select a descriptor word: the descriptor word list in this section, which contains definitions for a limited number of words, and the component list (Appendix H), which enumerates many the Descriptor and Class words that are in current use.

If no term in either of the two lists is deemed appropriate for a new data element, the data producer shall construct a new data name and submit it to the PDS for review.

Examples of descriptor words include angle, altitude, location, radius and wavelength.

For descriptor words of a scientific nature (as opposed to the computer systems-oriented words such as "bits"), the definitions are intended to convey the meaning of each word within the context of planetary science, and thus to facilitate the standardization of nomenclature within the planetary science community.

Certain descriptor words may have more than one meaning, depending upon the context in which they are used. It is believed that it is appropriate to include these words and their (multiple) definitions in the list, and that the context will suggest which definition is applicable in a given case.

In some cases (such as "elevation"), the example given for the descriptor word may contain just the word itself. In general, however, the descriptor word is one of several components of a data element's name.

Plural Descriptor Words

Plural descriptor words are used to indicate "count of" or "number of" in data object names (e.g., "sample_bits" rather than "number_of_bits_in_sample").

DESCRIPTOR WORD	DESCRIPTOR WORD DEFINITION
albedo	Reflectivity of a surface or particle. Example: BOND_ALBEDO
altitude	The distance above a reference surface measured normal to that surface. Altitudes are not normally measured along extended body radii, but along the direction normal to the geoid; these are the same only if the body is spherical. See also: 'elevation', 'height.' Example: SPACECRAFT_ALTITUDE
angle	A measure of the geometric figure formed by the intersection of two lines or planes. Definitions for data element names containing the word 'angle' should include origin and relevant sign conventions where applicable. Example: MAXIMUM_EMISSION_ANGLE
axis	A straight line with respect to which a body or figure is symmetrical. Example: ORBITAL_SEMIMAJOR_AXIS
azimuth	One of two angular measures in a spherical coordinates system. Azimuth is measured in a plane which is normal to the principal axis, with increasing azimuth following the right hand rule convention relative to the positive direction of the principal axis. PDS adopts the convention that an azimuth angle is never signed negative. The point of zero azimuth must be defined in each case.

	Example: SUB_SOLAR_AZIMUTH
bandwidth	The range within a band of wavelengths, frequencies or energies.
base	A quantity to be added to a value.
bits	A count of the number of bits within an elementary data item. Examples: SAMPLE_BITS
bytes	A count of the number of bytes within a record, or within a sub-component of a record. Example: RECORD_BYTES
channel	A band of frequencies or wavelengths.
circumference	The length of any great circle on a sphere.
coefficient	A numeric measure of some property or characteristic.
columns	A count of the number of distinct data elements within a row in a table.
component	1) The part of a vector associated with one coordinate. 2) A constituent part. Example: VECTOR_COMPONENT_1
constant	A value that does not change significantly with time.
consumption	The usage of a consumable. Example: INSTRUMENT_POWER_CONSUMPTION
contrast	The degree of difference between things having a comparable nature. Example: MAXIMUM_SPECTRAL_CONTRAST
declination	An angular measure in a spherical coordinate system, declination is the arc between the Earth's equatorial plane and a point on a great circle perpendicular to the equator. Positive declination is measured towards the Earth's north pole, which i is the positive spin axis per the right hand rule; declinations south of the equator are negative. The Earth mean equator and equinox shall be as defined by the International Astronomical Union (IAU) as The 'J2000' reference system unless noted as The 'B1950' reference system. See also: 'right_ascension'.
density	1) The mass of a given body per unit volume. 2) The amount of a quantity per unit of space. Example: MASS_DENSITY
detectors	A count of the number of detectors contained, for example, in a given instrument.
Deviation	Degree of deviance.
diameter	The length of a line passing through the center of a circle or a circular NAME. Example: TELESCOPE_DIAMETER
distance	A measure of the linear separation of two points, lines, surfaces, or NAMEs. See also 'altitude', which refers to a specific type of distance. The use of the

	descriptor word 'distance' supersedes the use of the word 'range' as a measure of linear separation. See also: 'range'. Example: SLANT_DISTANCE
duration	A measure of the time during which a condition exists. Example: INSTRUMENT_EXPOSURE_DURATION
eccentricity	A measure of the extent to which the shape of an orbit deviates from circular. Example: ORBITAL_ECCENTRICITY
elevation	1) The distance above a reference surface measured normal to that surface. Elevation is the altitude of a point on the physical surface of a body measured above the reference surface; height is the distance between the top and bottom of an NAME. 2) An angular measure in a spherical coordinate system, measured positively and negatively on a great circle normal to the azimuthal reference plane. The zero elevation point lies in the azimuthal reference plane, and positive elevation is measured towards the direction of the positive principal axis. See also: 'azimuth'.
epoch	A specific instance of time selected as a point of reference. Example: COORDINATE_SYSTEM_REFERENCE_EPOCH
error	The difference between an observed or calculated value and a true value. Example: TELESCOPE_T_NUMBER_ERROR
factor	A quantity by which another quantity is multiplied or divided. Example: SAMPLING_FACTOR
first	An indication of the initial element in a set or sequence. As with minimum and maximum, the values in the set may be out of order or discontinuous. For examples of the use of range-related terms, please see the following section.
flattening	A measure of the geometric oblateness of a solar system body, defined as the ratio of the difference between the body's equatorial and polar diameters to the equatorial diameter, or '(a-c)/a'.
fov (field_of_view)	The angular size of the field viewed by an instrument or detector. Note that a field may require multiple field_of_view measurements, depending upon its shape (e.g., height and width for a rectangular field). Example: HORIZONTAL_FOV
fovs	A count of the number of different fields of view characteristic of an instrument or detector.
Fraction	The non-integral part of a real number. See also: ’base'.
frequency	The number of cycles completed by a periodic function in unit time.
gravity	The gravitational force of a body, nominally at its surface. Example: SURFACE_GRAVITY
height	The distance between the top and bottom of an NAME. Example: SCALED_IMAGE_HEIGHT

images	A count of the number of images contained, for example, in a given mosaic. Example: MOSAIC_IMAGES
inclination	The angle between two intersecting planes, one of which is deemed the reference plane and is normally a planet's equatorial plane as oriented at a specified reference epoch. Example: RING_INCLINATION
index	An indicator of position within an arrangement of items.
interval	1) The intervening time between events. 2) The distance between points along a coordinate axis. See also: 'duration'. Example: SAMPLING_INTERVAL
last	An indication of the final element in a set or sequence. As with minimum and maximum, the values in the set may be out of order or discontinuous. For examples of the use of range-related terms, please see the following section.
latitude	In a cylindrical coordinate system the angular distance from the plane orthogonal to the axis of symmetry. See also: 'longitude'. Example: MINIMUM_LATITUDE
length	A measured distance or dimension. See also: 'height', 'width'. Example: TELESCOPE_FOCAL_LENGTH
level	The magnitude of a continuously varying quantity. Example: NOISE_LEVEL
line	1) A row of data within a two-dimensional data set; 2) A narrow feature within a spectrum.
lines	1) A count of the number of data occurrences in an image array; 2) Any plural of 'line'.
Location	The position or site of a NAME.
longitude	In a cylindrical coordinate system, the angular distance from a standard origin line, measured in the plane orthogonal to the axis of symmetry. (See also: 'latitude'.) Example: MAXIMUM_LONGITUDE
mass	A quantitative measure of a body's resistance to acceleration. Example: INSTRUMENT_MASS
maximum	An indicator of the element in a range that has the greatest value, regardless of the order in which the values are listed or stored. For example, in the set {4, 5, 2, 7, 9, 3}, the minimum is 2, the maximum is 9. The use of minimum and maximum, as with first and last implies that the set may be out of order or discontinuous. For examples of the use of range-related terms, please see the following section.
minimum	An indicator of the element in a range that has the least value, regardless of the order in which the values are listed or stored. For example, in the set {4, 5, 2, 7, 9, 3}, the minimum is 2, the maximum is 9. The use of minimum and maximum, as with first and last implies that the set may be out of order or

discontinuous. For examples of the use of range-related terms, please see the following section.

moment	The product of a quantity (such as a force) and the distance to a particular point or axis. Example: MAGNETIC_MOMENT
obliquity	Angle between a body's equatorial plane and its orbital plane.
Parameter	A variable. Example: MAXIMUM_SAMPLING_PARAMETER
parameters	A count of the number of parameters in a given application. Example: IMPORTANT_INSTRUMENT_PARAMETERS
password	An alphanumeric string which must be entered by a would-be user of a computer system in order to gain access to that system.
percentage	A part of a whole, expressed in hundredths. Example: DATA_COVERAGE_PERCENTAGE
period	The duration of a single repetition of a cyclic phenomenon or motion. Example: REVOLUTION_PERIOD
points	A count of the number of points (i.e., data samples) occurring, for example, within a given bin. Example: BIN_POINTS
pressure	Force per unit area. Example: MEAN_SURFACE_ATMOSPHERIC_PRESSURE
radiance	A measure of the energy radiated by an NAME. Example: SPECTRUM_INTEGRATED_RADIANCE
radius	The distance between the center of and a point on a circle, sphere, ellipse or ellipsoid. Example: MEAN_INNER_RADIUS
rate	The amount of change of a quantity per unit time. Example: NOMINAL_SPIN_RATE
records	A count of the number of physical or logical records within a file or a subcomponent of a file. Example: FILE_RECORDS
resolution	A quantitative measure of the ability to distinguish separate values. Example: SAMPLING_PARAMETER_RESOLUTION
right ascension	The arc of the celestial equator between the vernal equinox and the point where the hour circle through the given body intersects the Earth's mean equator reckoned eastward, in degrees. The Earth mean equator and equinox shall be as defined by the International Astronomical Union (IAU) as the 'J2000' reference system unless noted as the 'B1950' reference system. Note: In the PDS, this term is abbreviated to RA in most instances, except when the term is unqualified. Hence, the data element name RIGHT_ASCENSION is spelled out, but other terms referring to specific right ascensions contain the abbreviation.

Rows	A count of the number of data occurrences in a table.
samples	A count of the number of data elements in a line of an image array or a set of data. Example: SEQUENCE_SAMPLES
scale	A proportion between two sets of dimensions. Example: MAP_SCALE
start	An indication of the beginning of an activity or observation. For examples of the use of range-related terms, please see the following section.
stop	An indication of the end of an activity or observation. For examples of the use of range-related terms, please see the following section.
temperature	The degree or intensity of heat or cold as measured on a thermometric scale. Example: MEAN_SURFACE_TEMPERATURE
title	A descriptive heading or caption. Example: SEQUENCE_TITLE
transmittance	The ratio of transmitted to incident energy. Example: TELESCOPE_TRANSMITTANCE
wavelength	The distance that a wave travels in one cycle. Example: MINIMUM_WAVELENGTH
width	The distance between two sides of an NAME. See also: 'height', 'length'. Example: SCALED_IMAGE_WIDTH

2.2.4 RANGE-RELATED DATA ELEMENT COMPONENTS -- FIRST, LAST, START, STOP, MINIMUM, AND MAXIMUM

The PDS recommends that users employ one of three pairs of descriptor words to indicate the bounds of a range. These three pairs are first/last, start/stop, and minimum/maximum.

The use of minimum and maximum is the easiest to distinguish from the others. These words should be used to indicate the least and greatest values in a numeric range, regardless of the order to the elements in a set. Hence, in the set {2, 5, 1, 7, 4}, the minimum would be 1, and the maximum 7.

Start and stop allow data suppliers to indicate the bounds of a phenomenon that has some kind of motion in time or space. This is the only pair of words that can imply a contiguous, increasing order to the values within a range.

At times data suppliers wish to indicate the first and last occurrence of a phenomenon, regardless of the primary ordering attribute. Consider the following table of image attributes:

1	2	3	4	(picno)
22	13	42	87	(latitude)
03:05	07:15	01:32	16:47	(time)

These image products are in picno order. Each has center latitude and a time associated with it. To indicate the picno range it would make sense to say start_picno, stop_picno. Latitude may be indicated in two ways:

minimum_latitude	=	13	and, if it matters,
first_latitude	=	22	

Time can be indicated likewise:

start_time	=	"1992-123T01:32"	and, if it matters,
first_time	=	"1992-123T03:05"	

In this scheme, the terms first and last end up serving to indicate placement of secondary attributes -- ones that do not constitute the primary ordering attribute.

2.2.5 PROHIBITED WORDS

The words in the Prohibited Words list are not to be used as descriptor words. For each word, the list explains why the word was not included in the Descriptor Words list and provides an alternative that is a recognized PDS descriptor word.

Formerly used (or proposed) descriptor words which have been superceded by other words are also enumerated in the Prohibited Words list.

PROHIBITED WORD	ALTERNATIVES
begin	See the descriptor words: start, first, or minimum.
Code	Use 'id'.
Comment	See the class words: note, description, or text.
date/time	Please use 'time' alone when naming fields that indicate either both date and time information, or time information alone. Use 'date' alone in data elements that only indicate date information.
Definition	Use 'description'.
Divisor	Use 'factor'.
end	See the descriptor words: 'stop', 'last', 'minimum'. See the descriptor words: 'stop', 'last', 'minimum'.
field of view	Use 'fov'.
Identification	Use 'id'.
Increment	Use 'interval'.
Indicator	Use 'id' or 'state'.
Information	Use 'description'.
Multiplier	Use 'factor'.
Periapsis	Use 'closest_approach'.
Program	Please use this term only in reference to software, not in reference to missions or projects.
slant range	Use 'slant distance'.

2.2.6 ABBREVIATION RULES

The maximum length of a data element name is 30 characters. Names must be limited 30 characters because of the limitations of the software engineering tools used by PDS. There are instances, therefore, when it becomes necessary to abbreviate terms within a name in order to comply with this limit.

Construction of Terse Data Element Names

Terse names are sometimes required for use in processing environments where names are restricted in length to 7, 8, 10, or 12 characters. The terse name for a given data element is based upon the "formal" full name of the element. A standard list of twelve-character terse names for the data elements in the PDS Catalog is maintained in the online data dictionary along with the list of the elements' thirty-character full names. This terse name list is intended as a reference for use by database implementers at the PDS Nodes and by other PDS developers.

Rules

1. Abbreviate only if necessary to fit a name within the character limit.

2. There may be multiple allowable abbreviations for a number of terms. This is to support the construction of terse names of varying length (i.e., 12, 8, or even 6 characters), while maintaining maximum readability. Each abbreviation, however, will be unique and correspond to one and only one full word.

3. READABILITY is the primary goal.

4. Use the component list abbreviations in Appendix H. Some words are always abbreviated. If more than one form is available, the longest one which will fit should be used first, subject to rule 7, below.

5. Abbreviations are constructed only for root words.

6. Plural descriptor words are given the root word abbreviation followed by an s.

7. Other words with the same root (such as operations and operational) are given the same abbreviation.

8. When abbreviation is necessary, the most important word in the element name should be preserved in the longest state.

9. In elements with more than three words, a word can be left out of the terse name if clarity is preserved.

10. Connector words such as "or" and "from" can be dropped.

11. The first letter of the terse name must be the same as the first letter of the full element name. First letters of abbreviations do not have to follow this rule unless the abbreviation begins the terse name.

12. Words containing four letters are left as four letters unless it is necessary, due to length considerations, to further abbreviate them. Longer words may or may not be shortened in all cases, depending primarily on frequency of use and the availability of a clear abbreviation.

13. When the component term "description" is used in the construction of terse names always use the abbreviation "desc," except when the term "description" is used alone.

2.3 DATA TYPE STANDARDS

In order to enhance the compatibility of the PSDD with other projects and data systems, a method for specifying the general (non-implementation dependent) data type of each data element is needed, as well as a non-ambiguous method for representing data types in written documentation. This standard is intended to meet these needs.

The following list of general data types conforms to ISO and JPL standards and is available for use. Currently, only a subset of these terms is used, i.e., CHARACTER, INTEGER, REAL, TIME, DATE, and CONTEXT DEPENDENT.

Data Types Available for Use

CHARACTER*

- ALPHABET
- ALPHANUMERIC

NUMERIC

- INTEGER*
- REAL*
- NON DECIMAL*

TIME*

- DATE*

CONTEXT DEPENDENT*

* Marked types are those in current use by PDS or AMMOS.

2.3.1 CHARACTER Data Type

The **CHARACTER** Definition of Data Type"CHARACTER data type is provided to represent arbitrary ASCII character strings -- particularly values that cannot be represented as NUMERIC or TIME. CHARACTER data include both text strings and literal values. CHARACTER values may include any alphabetic (A-Z, a-z) or numeric (0-9) ASCII characters and the underscore character without being quoted. If other characters are to be used or if the value is to include white space (defined as any of: space character, horizontal or vertical tab character) the value shall be quoted, using the single or double quotation marks.

PDS and AMMOS labeling conventions dictate that double quotation marks are always used in unlimited-length text fields. Quoted phrases within a text field are delimited with single quotation marks (apostrophes).

For example, the MISSION_DESC definition would read:

MISSION_DESC = "The Magellan spacecraft was launched from the Kennedy Space Center on May 5, 1989. The spacecraft was deployed from the Shuttle cargo bay after the Shuttle achieved parking orbit. ..."

2.3.2 INTEGER and REAL Data Types

The **INTEGER** and **REAL** data types encompass all values that can be represented as a single real number (imaginary numbers must currently be represented using two separate keyword statements where the imaginary nature of the number must be conveyed in the definition of the keywords). Detailed specifications for these are defined in ISO 6093 as NR1 and NR2, respectively. Note that these specifications are hierarchical such that NR2 includes all of NR1. Thus an attribute defined as a REAL data type may have values expressed as REAL or INTEGER with equal validity.

2.3.3 LENGTH AND RANGE SPECIFICATIONS

Since the unit of measurement and the maximum length or range associated with a data element are also critical to the correct usage of the element, a standard has been adopted for specifying these attributes. When defining a new data element or including a non-standard element in a data set, the following attributes shall be supplied.

GENERAL_DATA_TYPE
UNIT
VALID_MINIMUM
VALID_MAXIMUM
MINIMUM_LENGTH
MAXIMUM_LENGTH

If the general data type is INTEGER or REAL, VALID_MINIMUM and VALID_MAXIMUM refer to the minimum and maximum values valid for the field. Alternately, if the data type is CHARACTER or TIME, MINIMUM_LENGTH and MAXIMUM_LENGTH denote the number of characters permissible for the value. The two fields that are not applicable to the data type shall be given values of "N/A".

Example:

```
GENERAL_DATA_TYPE        = CHARACTER
UNIT                     = "N/A"
MINIMUM_LENGTH           = 23
MAXIMUM_LENGTH           = 23
VALID_MINIMUM            = "N/A"
VALID_MAXIMUM            = "N/A"
```

This example illustrates also that if the MINIMUM_ and MAXIMUM_LENGTH fields are identical, the value is the required length for the field, i.e., no more, and no fewer characters are permitted in values.

In documentation shorthand shall be used:

CHARACTER (23, 23)	(23-character input is required)
CHARACTER (6, 10)	(input must have no fewer than 6, or more than 10 chars)
CHARACTER (60)	(60-character maximum length -- no minimum length)

CHARACTER (an unlimited-length, text field is indicated)

For numeric data types:

INTEGER (1, 100) (minimum value=1, maximum value=100)
INTEGER (<=360) (minimum value=0, maximum value=360)
INTEGER (the minimum and maximum is not applicable as far as the data are concerned, but the numeric implementation of "not applicable" depends upon the system-specific data type assigned in the host database. In the PDS, the system maximum and minimum integer values are reserved to represent N/A and UNK for INTEGERs.)
REAL (-90, 180) (minimum range of valid entries lies between -90 and 180)
REAL (<=1000) (minimum=N/A, maximum=1000)
REAL (the minimum and maximum is not applicable as far as the data are concerned, but the numeric implementation of "not applicable" depends upon the system-specific data type assigned in the host database. In the PDS, the values 1.E32 are reserved to represent N/A and UNK for REALs.)

2.3.4 **NON DECIMAL Data Type**

Non-decimal values shall be represented in binary, octal or hexadecimal using the NON DECIMAL data type. This data type consists of a decimal integer radix (2, 8, or 16) followed by a number string expressed in appropriate ASCII characters and enclosed in # symbols. The negative value shall be represented using a minus sign before the number string and after the first #. Binary values shall be interpreted as positive and uncomplemented. Because it may be useful to embed spaces in long number strings, spaces are allowed anywhere within the representation and will be ignored. For example, the string, 2# 10 01# represents the decimal value 9.

Non-decimal values are intended to be used to represent bit masks and other bit patterns associated with a specific computing environment. As such, it is inadvisable for a cataloguing system to interpret and/or store them according to a numeric scheme, since this may significantly change the pattern of bits, and may preclude the retrieval of the original string. It is recommended that catalog interpreters store non-decimal values as character strings. In some cases, users may wish to query a system according to the numeric value of a non-decimal entry. To allow this, systems may be configured to store the decimal value in addition to the string value.

In this light, although the non-decimal type is defined as a numeric subtype it should not be treated solely as a numeric, but rather as a special implementation rule for string values.

2.3.5 **TIME Data Type**

All event time attributes shall measure time in Universal Time Coordinated (UTC) unless specifically defined otherwise. Note that it is generally ambiguous to label data with a time-of-day without including a date, and so the **TIME** type shall always include both the date and UTC time.

Event times shall be represented in the ISO/CCSDS/JPL standard form as follows (brackets [...] enclose optional fields):

YYYY-MM-DDThh:mm:ss[.fff] -or- YYYY-DDDThh:mm:ss[.fff]

where:

YYYY	Represents the year (0001 to 9999)
-	Is a required delimiter between date fields
MM	Represents the month (01 to 12)
DD	Represents the day of month (01 to 28, 29, 30 or 31)
DDD	Represents the day of year (001 to 365 or 366)
T	Is a required delimiter between date and time
hh	Represents the UTC hour (00 to 23)
:	Is a required delimiter between time fields
mm	Represents the UTC minute (00 to 59)
ss	Represents the UTC whole seconds (00 to 60)
fff	Represents fractional seconds, from one to three decimal places.

The year-month-day and year-day-of-year formats are fully equivalent and interchangeable. For more information regarding date/times, refer to the Date/Time Format standard in the PDS Standards Reference. For event times that require only the date, the following subset is defined as the subtype xe "DATE: Definition of Data Type"DATE (where field definitions are the same as above):

YYYY-MM-DD -or- YYYY-DDD

Spacecraft clock (SCLK) values are not considered to be the same as time since they follow different formation rules and have a different semantic meaning. SCLK values shall be represented using a CHARACTER data type. For more information regarding dates, refer to the Date Format standard in the PDS Standards Reference.

2.3.6 CONTEXT DEPENDENT Data Type

The PDS has added **CONTEXT DEPENDENT** to the list of data types in order to accommodate situations in which data elements take on the data type of the data objects they help to describe. A classic example is the data element MISSING, used to indicate the value inserted into a data object to flag missing telemetry data. In an integer data field, the data type of MISSING needs to be INTEGER. In floating point data fields, the missing value must be REAL, and so on. Since this data element, and the others classified as context dependent, can be character as well as numeric values, the PSDD indicates that the data type can vary.

2.3.7 Data Types and Concerns Not Addressed by This Standard

Since the precision of a number is hard to codify, that specification shall be included in the list of formation rules for a data element, not in the GENERAL_DATA_TYPEData Set specific types such as BIT_STRING are not included in the GENERAL_DATA_TYPE domain. Such data types are better represented in the DATA_TYPE attribute that appears in the actual data structure objects.

Imaginary numbers are left in the realm of local implementation. System managers might choose to represent imaginary numbers as two real expressions, or as aggregate, complex expressions.

2.4 STANDARD VALUES

A general description of the conventions used to categorize standard values may be found at the beginning of Appendix A. A brief, additional appendix lists standard values particular to the AMMOS/MARS OBSERVER data base.

2.5 SPECIAL VALUES

The Object Definition Language used to express keyword=value relationships requires that there always be some value on the right-hand side of an expression. However, cases frequently arise in which a value is not forthcoming either because none is applicable or known at the time the statement is expressed. The special token values "N/A” and "UNK" are provided for situations. [At the time of this writing, formal definitions of these values and the token NULL are still being established.]

2.6 UNITS OF MEASUREMENT

The following table defines the set of standard units and symbols based on the System Internationale and amplified by the PDS.

For the standards governing this list of units of measurement, please refer to the PDS Standards Reference.

Unit Name	Symbol	Measured Quantity
TBD	local day/24	time
ampere	A	electric current, magnetomotive force
ampere per meter	A/m	magnetic field strength
ampere per square meter	A/m**2	current density
arcsecond	arcsecond	angular diameter
bar	bar	pressure
becquerel	Bq	activity (of a radionuclide)
bits per pixel	b/pixel	resolution
bits per second	b/s	data rate
candela	cd	luminous intensity
candela per square meter	cd/m**2	luminance
coulomb	C	electric charge, quantity of electricity
coulomb per cubic meter	C/m**3	electric charge density
coulomb per kilogram	C/kg	exposure (x and y rays)
coulomb per square meter	C/m**2	electric flux density
cubic meter	m**3	volume
cubic meter per kilogram	m**3/kg	specific volume
day	d	time
decibel	dB	signal strength
degree	deg	plane angle
degree Celsius	degC	temperature
degree per second	deg/s	angular velocity
farad	F	capacitance
farad per meter	F/m	permittivity
gram per cubic centimeter	g/cm**3	mass density
gray	Gy	absorbed dose, specific energy imparted
gray per second	Gy/s	absorbed dose rate
henry	H	inductance
henry per meter	H/m	permeability
hertz	Hz	frequency
hour	h	time
joule	J	work, energy, quantity of heat
joule per cubic meter	J/m**3	energy density
joule per kelvin	J/K	heat capacity, entropy
joule per kilogram	J/kg	specific energy
joule per kilogram kelvin	J/(kg.K)	specific heat capacity, specific entropy
joule per mole	J/mol	molar energy
joule per mole kelvin	J/(mol.K)	molar entropy, molar heat capacity
joule per sq. meter per second	J/(m**2)/s	radiance
joule per tesla	J/T	magnetic moment
kelvin	K	thermodynamic temperature
kilogram	kg	mass
kilogram per cubic meter	kg/m**3	mass density (density)
kilometer	km	length
kilometer per pixel	km/pix	map scale
kilometers per second	km/s	speed
kilometers squared	km**2	area
lumen	lm	luminous flux
lux	lx	illuminance
meter	m	length
meter per second	m/s	speed, velocity
meter per second squared	m/s**2	acceleration
meters per pixel	m/pixel map	scale

micrometer	micron	length
microwatts	uW	power,radiant flux
millimeter	mm	length
millisecond	ms	time
minute	min	time
mole	mol	amount of substance
mole per cubic meter	mol/m**3	concentration (of amount of substance)
nanometer	nm	length
nanotesla	nT	magnetic flux density
newton	N	force
newton meter	N.m	moment of force
newton per meter	N/m	surface tension
newton per square meter	N/m**2	pressure (mechanical stress)
no unit of measurement defined	none	NULL
ohm	ohm	electric resistance
pascal	Pa	pressure, stress
pascal second	Pa.s	dynamic viscosity
pixel	pixel	position [in array]
pixel per degree	pix/deg map	scale
pixels per line	p/line	position [in array]
radian	rad	plane angle
radian per second	rad/s	angular velocity
radian per second squared	rad/s**2	angular acceleration
reciprocal kilometer	km**-1	length
reciprocal meter	m**-1	wave number
second	s	time
siemens	S	electric conductance
sievert	Sv	dose equivalent, dose equivalent index
square meter	m**2	area
square meter per second	m**2/s	kinematic viscosity
steradian	sr	solid angle
tesla	T	magnetic flux density
united states dollars	us_dollar	money
volt	V	potential difference, electromotive force
volt per meter	V/m	electric field strength
watt	W	power, radiant flux
watt per meter kelvin	W/(m.K)	thermal conductivity
watt per square meter	W/m**2	heat flux density, irradiance
watt per square meter steradian	W.m**-2.sr**-1	radiance
watt per steradian	W/sr	radiant intensity
weber	Wb	magnetic flux

SECTION 3

ELEMENT DEFINITIONS

This section contains the definitions of individual data elements, or descriptive attributes.

A_AXIS_RADIUS REAL <km>
The a_axis_radius element provides the value of the semimajor axis of the ellipsoid that defines the approximate shape of a target body. 'A' is usually in the equitorial plane.

ABSTRACT_TEXT CHARACTER
The abstract_text element provides a free-form, unlimited-length character string that gives a brief summary of a labeled document, differing from DESCRIPTION in that the text could be extracted for use in a bibliographic context.

ACCEPTANCE_DETECTOR_DESC CHARACTER
Definition TBD.

ACCEPTANCE_INFORMATION_DESC CHARACTER
Definition TBD.

ADDRESS_TEXT CHARACTER
The address_text data element provides an unlimited-length, formatted mailing address for an individual or institution.

AIRMASS [PDS-SBN] REAL
The AIRMASS element defines the astronomical ratio 'airmass', which is the number of times the quantity of air seen along the line of sight is greater than the quantity of air in the zenith direction. That is, it is the ratio of the amount of atmosphere lying along the line-of-sight of the observation to the minimum possible amount of atmosphere (which would occur for observations made in the zenith direction). Airmass increases as the line of sight moves away from the perpendicular. This value is used as part of a calculation to determine atmospheric extinction, which is the atmosphere's effect on stellar brightness from a single site.

ALGORITHM_DESC CHARACTER
The algorithm_desc element describes the data processing function performed by an algorithm and the data types to which the algorithm is applicable.

ALGORITHM_NAME CHARACTER(30)
The algorithm_name element provides (where applicable) the formal name which identifies an algorithm. Example value: RUNGE-KUTTA.

ALGORITHM_VERSION_ID CHARACTER(4)
The algorithm_version_id element identifies (where applicable) the version of an algorithm.

ALIAS_NAME CHARACTER(30)
The alias_name element provides an alternative term or identifier for a data element or object.

Note: In the PDS, values for alias_name are accepted as input to the data system, but automatically changed into the approved term to which they relate.

ALT_ALONG_TRACK_FOOTPRINT_SIZE [PDS-GEO-MGN] REAL <km>
The alt_along_track_footprint_size element provides the value of along-track dimension of the Venus surface area whose mean radius, RMS slope, and reflectivity are reported in this data record. The along track dimension is chosen to be the smallest multiple of the doppler resolution of the altimeter (at this point in the spacecraft orbit) that is greater than 8 km.

ALT_COARSE_RESOLUTION PDS-GEO-MGN] INTEGER
The alt_coarse_resolution element provides the value of the altimeter coarse time resolution factor taken from the radar burst header in which the raw_rad_antenna_power was reported.

ALT_CROSS_TRACK_FOOTPRINT_SIZE [PDS-GEO-MGN] REAL <km>
The alt_cross_track_footprint_size element provides the value of the cross-track footprint dimension determined solely by the radar baud length and the spacecraft altitude at this point in the orbit.

ALT_FLAG2_GROUP [PDS-GEO-MGN] INTEGER
Additional flag fields (unused).

ALT_FLAG_GROUP [PDS-GEO-MGN] INTEGER
The ALT_FLAG_GROUP element identifies the following flag fields.
AR_FIT=0x0001
Record contains footprint values that have been fitted in the altimetry and radiometry mgmtac processing phase.
AR_EPHC=0x0002
Geometry values have been corrected for ephemeris errors in the mgmorb phase.
AR_RHOC=0x0004
Reflectivity values have been corrected from C-BIDR backscatter values in the mgmgen phase.
AR_RS2=0x0008
Range-sharpened values have passed the 2nd-order template fitting criteria in the mgmtac phase.
AR_NRS2=0x0010
Non-range-sharpened values have passed the 2nd-order template fitting criteria in the mgmtac phase.
AR_BAD=0x0020
Ignore this record entirely.
AR_RBAD=0x0040
Ignore the range-sharpened profile range_sharp_echo_profile[] and the associated derived_planetary_radius value.
AR_CBAD=0x0080
Ignore the non_range_sharp_echo_prof[] and the associated derived_rms_surface_slope and derived_fresnel_reflectivity values.
AR_TMARK=0x0100
Temporary derived_planetary_radius marker flag, used in the mgmdqe phase.
AR_CMARK=0x0200
Temporary derived_rms_surface_slope marker flag, used in the mgmdqe phase.
AR_FMARK=0x0400
Temporary derived_fresnel_reflect marker flag, used in the mgmdqe phase.
AR_HAGFORS=0x0800
ar_slope and its errors and correlations are expressed as Hagfors' C parameter instead of degrees of RMS slope. This flag will not be set in any standard ARCDR products. It is solely used during some phases of internal MIT processing.
AR_BADALTA=0x1000
The altimetry antenna was pointed more than 5 degrees
from its expected location as given by the nominal look-angle profile.
AR_SLOPEBAD=0x2000
The ar_slope parameter value is suspect, and ar_prof should also be disregarded.

AR_RHOBAD=0x4000
The ar_rho value is suspect.
AR_RAD2=0x8000
This record was created under software version 2 or higher, in which the data fields ar_rhofact, ar_radius2, ar_sqi, and ar_thresh are significant.

ALT_FOOTPRINT_LATITUDE [PDS-GEO-MGN] REAL <deg>
The alt_footprint_latitude (VBF85) element provides the value of the crust-fixed latitude of the center of the altimeter footprint, in the range of -90 (South Pole) to 90 (North Pole).

ALT_FOOTPRINT_LONGITUDE [PDS-GEO-MGN] REAL <deg>
The alt_footprint_longitude (VBF85) element provides the value of the crust-fixed longitude of the center of the altimeter footprint, in the range of 0 - 360 easterly longitude. Periapsis nadir increases in longitude by about 1.48 deg per day (about 0.2 deg per orbit).

ALT_FOOTPRINTS [PDS-GEO-MGN] INTEGER
The footprints element provides the value of the number of Standard Format Data Units in a specific orbit's altimetry data file.

ALT_GAIN_FACTOR [PDS-GEO-MGN] NTEGER
The alt_gain_factor elements provide the values of the altimeter gain factor taken from the radar burst header. alt_gain_factor[0] pertains to the measurement of raw_rad_antenna_power and alt_gain_factor[1] to raw_rad_load_power.

ALT_PARTIALS_GROUP [PDS-GEO-MGN] REAL
The alt_partials_group of the alt_footprint_longitude, alt_footprint_latitude, and the derived_planetary_radius with respect to the alt_spacecraft_position_vector and alt_spacecraft_velocity_vector elements provides the value of the partial derivatives of the footprint coordinates with respect to changes in the spacecraft position and velocity.

ALT_SKIP_FACTOR [PDS-GEO-MGN] INTEGER
The alt_skip_factor elements provide the values of the altimeter skip factor taken from the radar burst header. alt_skip_factor[0] pertains to the measurement of raw_rad_antenna_power and alt_skip_factor[1] to raw_rad_load_power.

ALT_SPACECRAFT_POSITION_VECTOR [PDS-GEO-MGN] REAL <km>
The alt_spacecraft_position_vector element provides the value of the spacecraft position at altimetry_footprint_tdb_time, relative to the Venus center of mass, expressed in inertial coordinates in the J2000 coordinate system.

ALT_SPACECRAFT_VELOCITY_VECTOR [PDS-GEO-MGN] REAL <km/s>
The alt_spacecraft_velocity_vector element provides the spacecraft velocity at altimetry_footprint_tdb_time, relative to the Venus center of mass, expressed in inertial coordinates in the J2000 coordinate system.

ALTERNATE_TELEPHONE_NUMBER CHARACTER(30)
The alternate_telephone_number data element provides an alternate telephone number for an individual or node. (Includes the area code.)

ALTIMETRY_FOOTPRINT_TDB_TIME [PDS-GEO-MGN] REAL
The altimetry_footprint_tdb_time element provides the value of the ephemeris time at which the spacecraft passed directly over the center of the footprint. As each footprint is composed of data collected from several altimeter bursts, this epoch doesn't necessarily coincide with a particular burst.

ANTECEDENT_SOFTWARE_NAME CHARACTER(30)
The antecedent_software_name element identifies the processing software which is commonly applied to a science data set before processing by the subject software.

APERTURE_TYPE [PDS-SBN] CHARACTER(6)
The APERATURE_TYPE element describes a short string of free-format text which provides a distinguishing name or abbreviation for one (or more) of a set of apertures used during data collection.

Note: For the International Ultraviolet Explorer (IUE) spacecraft, the spectrographs have small and large apertures, and can operate with either or both open.

APPLICABLE_START_SCLK [JPL-AMMOS-SPECIFIC] CHARACTER
The applicable_start_sclk element is an alias within AMMOS for spacecraft_clock_start_count.

APPLICABLE_START_TIME [JPL-AMMOS-SPECIFIC] TIME
The applicable_start_time element is an alias within AMMOS for start_time.

Note: The current AMMOS recommendation is to use start_time instead.

APPLICABLE_STOP_SCLK [JPL-AMMOS-SPECIFIC] CHARACTER
The applicable_stop_sclk element is an alias within AMMOS for spacecraft_clock_stop_count.

APPLICABLE_STOP_TIME [JPL-AMMOS-SPECIFIC] TIME
The applicable_stop_time element is an alias within AMMOS for stop_time.

Note: The current AMMOS recommendation is to use stop_time instead.

APPLICATION_PACKET_ID INTEGER
The application_packet_id element identifies the telemetry packet queue to which the data were directed.

APPLICATION_PACKET_NAME CHARACTER
The application_packet_name element provides the name associated with the telemetry packet queue to which data were directed.

Note: For Mars Pathfinder, the queues were distinguished on the basis of type and priority of data.

ARCHIVE_FILE_NAME CHARACTER(12)
The archive_file_name element provides the file_name under which a discrete entity is stored on the archive medium. It is typically used when the project-supplied file name does not meet PDS standards and must be changed on the archive medium.

ARCHIVE_STATUS [DIS] CHARACTER(30)
The archive_status element provides the status of a data set that has been submitted for inclusion into the PDS archive. The archive_status_note element is available to describe the archive_status value in finer detail.

ARCHIVE_STATUS_DATE [DIS] DATE
The archive_status_date element provides the date that the archive status will in the future or has in the past changed.

ARCHIVE_STATUS_NOTE [DIS] CHARACTER(120)

The archive_status_note element provides a text description that further explains the value of the archive_status element. (e.g. The archive_status_note element could be used to strongly encourage an user to consult the errata files associated with an archived data set.)

ASCENDING_NODE_LONGITUDE REAL(0, 360) <deg>
The ascending_node_longitude element provides the value of the angle measured eastward along the ecliptic from the vernal equinox to the ascending node of the orbit. The ascending node is defined as the point where the body in its orbit rises north of the ecliptic.

ASSUMED_WARM_SKY_TEMPERATURE [PDS-GEO-MGN] REAL <K>
The assumed_warm_sky_temperature element provides the value of the temperature assumed for the dominant portion of 'sky' reflected by the radiometer footprint, including atmospheric absorption and emission.

ATMOS_CORRECTION_TO_DISTANCE [PDS-GEO-MGN] REAL <km>
The atmos_correction_to_distance element provides the value of the correction applied to derived_planetary_radius to allow for the delay of signals passing through the atmosphere, calculated by the MGMOUT phase of the altimetry and radiometry data reduction program.

AUTHOR_FULL_NAME CHARACTER(60)
The author_full_name element provides the full_name of an author of a document. See also: full_name.

AUTO_EXPOSURE_DATA_CUT INTEGER
The auto_exposure_data_cut element provides the DN value which a specified fraction of pixels is permitted to exceed. The fraction is specified using the auto_exposure_pixel_fraction keyword.

AUTO_EXPOSURE_PIXEL_FRACTION REAL(0, 100)
The auto_exposure_pixel_fraction element provides the percentage of pixels whose value is higher than the auto_exposure_data_cut keyword.

Note: For Mars Pathfinder, this field is only applicable if the exposure type is set to AUTO or INCREMENTAL.

AVAILABILITY_ID CHARACTER(20)
The availability_id element is a numeric key which identifies the availability of the subject program or algorithm (e.g., program permanently on line, user request necessary for operator to load program, program undergoing development and testing--use at own risk).

AVAILABLE_VALUE_TYPE [PDS-CN] CHARACTER(1)
The available_value_type element indicates whether the available values for a PDS data element consist of a set of literal values or represent example values (i.e. values which must conform to a formation rule). Example values: L (available values are literal values), or X (available values are example values).

AVERAGE_ASC_NODE_LONGITUDE [PDS-GEO-MGN] REAL <deg>
The average_asc_node_longitude element provides the value of the angle in the xy-plane of the J2000 coordinate system to the ascending node of the predicted orbit.

AVERAGE_ECCENTRICITY [PDS-GEO-MGN] REAL
The average_eccentricity element provides the value of the eccentricity of the predicted orbit.

AVERAGE_INCLINATION [PDS-GEO-MGN] REAL <deg>
The average_inclination element provides the value of the angle of inclination of the predicted orbit with respect to the xy-plane of the J2000 coordinate system.

AVERAGE_ORBIT_PERI_TDB_TIME [PDS-GEO-MGN] REAL
The average_orbit_peri_tdb_time element provides the value of the periapsis time of the predicted orbit. This orbit is based on the elements used to generate the uplink commands for the current mapping pass. It represents an average over the entire orbit, and is not the result of post-orbit navigation solutions. The elements should be used for comparison purposes only, since they may involve large errors. The predicted orbit elements are copied from the orbit header file of the ALT-EDR tape, or, if unavailable, from the orbit header file of the C-BIDR.

AVERAGE_PERIAPSIS_ARGUMENT [PDS-GEO-MGN] REAL <deg>
The average_periapsis_argument element provides the value of the angle in the plane of the predicted orbit from the ascending node in the xy-plane of the J2000 coordinate system to the periapsis.

AVERAGE_PLANETARY_RADIUS [PDS-GEO-MGN] REAL <km>
The average_planetary_radius element provides the value of the planetary radius of the radiometer footprint, used to compute rad_footprint_longitude and rad_footprint_latitude, and also surface_temperature and atmospheric corrections to surface_emissivity.

AVERAGE_SEMIMAJOR_AXIS [PDS-GEO-MGN] REAL <km>
The average_semimajor_axis element provides the value of the semi-major axis of the predicted orbit.

AXES INTEGER(1, 6)
The axes element identifies the number of axes or dimensions of an array or qube data object.

AXIS_INTERVAL CONTEXT DEPENDENT
The axis_interval element identifies the spacing of value(s) for an ordered sequence of regularly sampled data objects along a defined axis. For example, a spectrum measured in the 0.4 to 3.5 micrometer spectral region at 0.1 micrometer intervals, but whose values are stored in decending order in an ARRAY object would have an axis_interval = -0.1. For ARRAY objects with more than 1 axis, a sequence of values is used to identify the axis_interval associated with each axis_name.

AXIS_ITEMS INTEGER(1, 0)
The axis_items element provides the dimension(s) of the axes of an array data object. For arrays with more than 1 dimension, this element provides a sequence of values corresponding to the number of axes specified. The rightmost item in the sequence corresponds to the most rapidly varying axis, by default.

AXIS_NAME CHARACTER(30)
The axis_name element provides the sequence of axis names of a qube or array data object, and identifies the order in which the axes are stored in the object. By default, the first axis name in the sequence identifies the array dimension that varies the slowest, followed by the next slowest, and continuing so the rightmost axis named varies the fastest. The number of names specified must be equal to the value of the axes element.

Note: For ISIS qube data objects, the most frequently varying axis is listed first, or leftmost, in the sequence.

AXIS_ORDER_TYPE CHARACTER(20)
The AXIS_ORDER_TYPE element is used to identify the storage order for elements of a multidimensional ARRAY object. The default storage order for an ARRAY object presumes the rightmost or last index of a sequence varies the fastest. This is the ordering used in the C programming language and is equivilant to ROW_MAJOR storage order for COLUMN elements within tables. Specifying an AXIS_ORDER_TYPE of FIRST_INDEX_FASTEST may be used for ARRAYs that must be labelled and referenced in the reverse, and is the ordering used in the Fortran programming language.

AXIS_START CONTEXT DEPENDENT
The axis_start element identifies the starting value(s) for an ordered sequence of regularly sampled data objects. For example, a spectrum that was measured in the 0.4 to 3.5 micrometer spectral region at 0.1 micrometer intervals, but whose values are stored in decending order would have axis_start = 3.5 and axis_interval = -0.1. For ARRAY objects with more than 1 axis, a sequence of values is used to identify the axis_start value for each dimension.

AXIS_STOP CONTEXT DEPENDENT
The axis_stop element identifies the ending value(s) for an ordered sequence of regularly sampled data objects. For example, a spectrum that was measured in the 0.4 to 3.5 micrometer spectral region at 0.1 micrometer intervals, but whose values are stored in decending order may have axis_stop = 0.4 and axis_interval = -0.1. For ARRAY objects with more than 1 axis, a sequence of values is used to identify the axis_stop value for each dimension.

AXIS_UNIT CHARACTER(60)
The axis_unit element provides the unit(s) of measure of associated axes identified by the axis_name element in an ARRAY data object. For arrays with more than 1 dimension, this element provides a sequence of values corresponding to the number of axes specified. The rightmost item in the sequence corresponds to the most rapidly varying axis, by default.

AZIMUTH REAL(0, 360) <deg>
The azimuth element provides the azimuth value of a point of interest (for example, the center point of an image of a solar system object taken from a lander or a rover). Azimuth is an angular distance from a fixed reference position. Azimuth is measured in a spherical coordinate system, in a plane normal to the principal axis. Azimuth values increase according to the right hand rule relative to the positive direction of the principal axis of the spherical coordinate system. See elevation.

AZIMUTH_FOV REAL(0, 360) <deg>
The azimuth_fov element provides the angular measure of the horizontal field of view of an imaged scene.

AZIMUTH_MOTOR_CLICKS [PDS_IMG] INTEGER
The azimuth_motor_clicks element provides the number of motor step counts an instrument or other mechanism rotated in the horizontal direction from the low hard stop.

B1950_DECLINATION [PDS-RINGS] REAL(-90, 90) <deg>
The B1950_declination element provides the declination of a star or other object using the B1950 coordinate frame rather than the J2000 frame.

B1950_RIGHT_ASCENSION [PDS-RINGS] REAL(0, 360) <deg>
The B1950_right_ascension element provides the right ascension of a star or other object using the B1950 coordinate frame rather than the J2000 frame.

B1950_RING_LONGITUDE [PDS-RINGS] REAL(0, 360) <deg>
The B1950_ring_longitude element specifies the inertial longitude of a ring feature relative to the B1950 prime meridian, rather than to the J2000 prime meridian. The prime meridian is the ascending node of the planet's invariable plane on the Earth's mean equator of B1950. Longitudes are measured in the direction of orbital motion along the planet's invariable plane to the ring's ascending node, and thence along the ring plane.

B_AXIS_RADIUS REAL <km>
The b_axis_radius element provides the value of the intermediate axis of the ellipsoid that defines the approximate shape of a target body. 'B' is usually in the equatorial plane.

BAD_PIXEL_REPLACEMENT_FLAG CHARACTER(5)
The bad_pixel_replacement_flag element indicates whether or not bad pixel replacement processing was completed. If set to TRUE, certain pixels in the image were replaced based on a bad pixel table.

BAD_BIN_CENTER [ISIS] REAL <micron>
The band_bin_center element of a Standard ISIS Qube provides the sequence of wavelengths describing the center of each 'bin' along the band axis of the qube. When describing data from a spectrometer, each wavelength corresponds to the peak of the response function for a particular detector and/or grating position.

BAND_BIN_DETECTOR [ISIS] INTEGER(1, 0)
The band_bin_detector element of a Standard ISIS Qube provides the sequence of spectrometer detector numbers corresponding to the bands of the qube. Detector numbers are usually assigned consecutively from 1, in order of increasing wavelength.

BAND_BIN_GRATING_POSITION [ISIS] INTEGER
The band_bin_grating_position element of a Standard ISIS Qube provides the sequence of grating positions which correspond to the bands of the qube. Grating positions are usually assigned consecutively from 0, and increasing position causes increasing wavelength for each detector.

BAND_BIN_ORIGINAL_BAND [ISIS] INTEGER(1, 512)
The band_bin_original_band element of a Standard ISIS Qube provides the sequence of band numbers in the qube relative to some original qube. In the original qube, the values are just consecutive integers beginning with 1. In a qube which contains a subset of the bands in the original qube, the values are the original sequence numbers from that qube.

BAND_BIN_STANDARD_DEVIATION [ISIS] REAL <micron>
The band_bin_standard_deviation element of a Standard ISIS Qube provides the sequence of standard deviations of spectrometer measurements at the wavelengths of the bands in the qube.

BAND_BIN_UNIT [ISIS] CHARACTER(30)
The band_bin_unit element of a Standard ISIS Qube identifies the scientific unit of the values of the band_bin_center element. Currently this must be MICROMETER, since band_bin_center must have wavelength values.

BAND_BIN_WIDTH [ISIS] REAL <micron>
The band_bin_width element of a Standard ISIS Qube provides the sequence of widths (at half height) of the spectrometer response functions at the wavelengths of the bands in the qube.

BAND_NAME CHARACTER(20)
BAND_NAME refers to the spectral band name associated with each band within a single- or multi-band image (i.e. RED, GREEN, BLUE, 415nm, 750nm, 900nm, etc.).

BAND_SEQUENCE CHARACTER(30)
The band_sequence element identifies the order in which spectral bands are stored in an image or other object.

Note: In the PDS, this data element is used to identify the primary colors composing a true color image. The standard values that appear in sets of three support color image display. They are not appropriate for describing multi-spectral bands. For these, it is advisable to use the sampling_parameter keywords defined elsewhere in the PSDD.

BAND_STORAGE_TYPE CHARACTER(20)
The band_storage_type element indicates the storage sequence of lines, samples and bands in an image. The values describe, for example, how different samples are interleaved in image lines, or how samples from different bands are arranged sequentially. Example values: BAND SEQUENTIAL, SAMPLE INTERLEAVED, LINE INTERLEAVED.

BANDS INTEGER(1, 256)
The bands element indicates the number of spectral bands in image or other object.

BANDWIDTH REAL <Hz>
The bandwidth element provides a measure of the spectral width of a filter or channel. For a root-mean-square detector this is the effective bandwidth of the filter i.e., the full width of an ideal square filter having a flat response over the bandwidth and zero response elsewhere.

BEST_NON_RANGE_SHARP_MODEL_TPT [PDS-GEO-MGN] INTEGER
The best_non_range_sharp_model_tpt provides the value of the theoretical echo profile, at half-baud (0.21 microsecond) intervals, that best approximates the peak of the non_range_sharp_echo_prof array. The optimal fit is made by matching best_non_range_sharp_model_tpt[i] with non_range_sharp_echo_prof[i+non_range_prof_corrs_index], where i is a value from 0 to 49.

BEST_RANGE_SHARP_MODEL_TMPLT [PDS-GEO-MGN] INTEGER
The best_range_sharp_model_tmplt element provides the value of the theoretical echo profile, at one-baud (0.21 microsecond) intervals, that best approximates the peak of the range_sharp_echo_profile array. The optimal fit is made by matching the best_range_sharp_model_tmplt[i] element with the range_sharp_echo_profile[i+range_sharp_prof_corrs_index] element, where i is a value from 0 to 49.

BILLING_ADDRESS_LINE [PDS-CN] CHARACTER(60)
This column stores text for the billing address. The text may consist of several lines containing up to sixty (60) characters each.

BIN_NUMBER INTEGER
The bin_number element provides the number of a bin. Bin_number values are dependent upon the associated binning scheme.

BIN_POINTS INTEGER
The bin_points element identifies the number of data samples which fall in a given bin.

Note: For radiometry applications, the bin_points value is the number of points from a given sequence that are located in the given bin.

BIT_DATA_TYPE CHARACTER(30)
The bit_data_type element provides the data type for data values stored in the BIT_COLUMN or BIT_ELEMENT object. See also: data_type.

BIT_MASK NON DECIMAL
The bit_mask element is a series of binary digits identifying the active bits in a value. This is determined by applying a bitwise AND (&) operation between the value and the bit_mask. For example, specifiying a BIT_MASK = 2#11110000# within a 1 byte unsigned integer COLUMN or ELEMENT object would identif only the high-order 4 bits to be used for the value of the object. If other data elements are included in the object description that may be dependent on a bit_mask operation (e.g. DERIVED_MINIMUM, DERIVED_MAXIMUM, INVALID), the rule is to apply the bit_mask first, and then apply or interpret the data with the other values. Byte swapping, if required, should be performed prior to applying the bit_mask.

BITS INTEGER(1, 32)
The bits element identifies the count of bits, or units of binary information, in a data representation.

BL_NAME [PDS-CN] CHARACTER(12)
The bl_name element is a unique 12-character name for elements used in any PDS data base table. These are only elements used in the data base.

BL_SQL_FORMAT [PDS-CN] CHARACTER(15)
This is the format required to generate CREATE statements in IDM SQL.

BLEMISH_FILE_NAME CHARACTER(20)
The blemish_file_name element indicates the file that provides corrections for blemishes (reseaus, dust spots, etc.) that affect the response of the sensor at specific locations. The blemish file is selected based on camera, filter, gain-state, camera mode, and time.

BLEMISH_PROTECTION_FLAG CHARACTER(3)
The BLEMISH_PROTECTION_FLAG element indicates whether the blemish protection was on or off.

BLOCK_BYTES INTEGER(1, 0)
The block_bytes element identifies the number of bytes per physical block used to record data files on magnetic tapes.

Note: In the PDS, for portability the block_bytes element should be limited to a maximum value of 32767 for a tape volume.

BODY_POLE_CLOCK_ANGLE REAL(0, 360) <deg>
The body_pole_clock_angle element specifies the direction of the target body's rotation axis in an image. It is measured from the 'upward' direction, clockwise to the direction of the northern rotational pole as projected into the image plane, assuming the image is displayed as defined by the SAMPLE_DISPLAY_DIRECTION and LINE_DISPLAY_DIRECTION elements.

Note: In some cases, knowledge of the inertial orientation of the rotational axis improves with time. This keyword necessarily reflects the state of knowledge of the rotational axis at the time of preparing the data product as given by the POLE_DECLINATION and POLE_RIGHT_ASCENSION elements.

BOND_ALBEDO REAL(0, 1)
The bond_albedo element provides the value of the ratio of the total amount of energy reflected from a body to the total amount of energy (sunlight) incident on the body.

BRIGHTNESS_TEMPERATURE [PDS-GEO-MGN] REAL <K>
The brightness_temperature element provides the value of the planet brightness temperature, derived from the planet_reading_system_temp after correcting for antenna efficiency and side-lobe gain.

BRIGHTNESS_TEMPERATURE_ID CHARACTER(12)
The brightness_temperature_id element provides the designation of the spectral band for which particular brightness temperature measurements were made. In the spectral_contrast_range group, the brightness_temperature_id designator may refer to a planetary temperature model.

BROWSE_FLAG CHARACTER(1)
The browse_flag element is a yes-or-no flag which indicates whether browse_format data are available for a given sample interval.

BUILD_DATE DATE

The build_date element provides the date associated with the completion of the manufacture of an instrument. This date should reflect the level of technology used in the construction of the instrument.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

BYTES INTEGER(1, 0)
The bytes element indicates the number of bytes allocated for a particular data representation.

C_AXIS_RADIUS REAL <km>
The c_axis_radius element provides the value of the semiminor axis of the ellipsoid that defines the approximate shape of a target body. 'C' is normal to the plane defined by 'A' and 'B'.

CCSDS_SPACECRAFT_NUMBER [JPL-AMMOS-SPECIFIC] INTEGER
The ccsds_spacecraft_number element provides the number assigned by the CCSDS to a given spacecraft.

Note: Due to conflicting numbering schemes between the DSN and the CCSDS it is recommended that this element not be used in AMMOS catalog headers.

CELESTIAL_NORTH_CLOCK_ANGLE REAL(0, 360) <deg>
The celestial_north_clock_angle element specifies the direction of celestial north at the center of an image. It is measured from the 'upward' direction, clockwise to the direction toward celestial north (declination = +90 degrees), when the image is displayed as defined by the SAMPLE_DISPLAY_DIRECTION and LINE_DISPLAY_DIRECTION elements. The epoch of the celestial coordinate system is J2000 unless otherwise indicated.

Note: This element bears a simple relationship to the value of TWIST_ANGLE:
When TWIST_ANGLE_TYPE = DEFAULT,
CELESTIAL_NORTH_CLOCK_ANGLE = (180 - TWIST_ANGLE) mod 360;
When TWIST_ANGLE_TYPE = GALILEO,
CELESTIAL_NORTH_CLOCK_ANGLE = (270 - TWIST_ANGLE) mod 360.
Note: For images pointed near either pole, the value varies significantly across the image; in these cases, the element is very sensitive to the accuracy of the pointing information.

CENTER_ELEVATION [PDS-GEO-VL] REAL(-90, 90) <deg>
The CENTER_ELEVATION is the angular elevation from the azimuthal reference plane of the center point of an image or observation. Elevation is measured in a spherical coordinate system. The zero elevation point lies in the azimuthal reference plane and positive elevation is measured toward the positive direction of the principal axis of the spherical coordinate system.

CENTER_FILTER_WAVELENGTH REAL <micron>
The center_filter_wavelength element provides the mid_point wavelength value between the minimum and maximum instrument filter wavelength values.

CENTER_FREQUENCY REAL <Hz>
The center_frequency element provides the frequency of maximum transmittance of a filter or the frequency that corresponds to the geometric center of the passband of a filter or a channel.

CENTER_LATITUDE REAL(-90, 90) <deg>
The center_latitude element provides a reference latitude for certain map projections. For example, in an Orthographic projection, the center_latitude along with the center_longitude defines the point or tangency between the sphere of the planet and the plane of the projection. The map_scale (or map_resolution) is typically defined at the center_latitude and center_longitude. In unprojected images, center_latitude represents the latitude at the center of the image frame.

CENTER_LONGITUDE REAL(-180, 360)<deg>
The center_longitude element provides a reference longitude for certain map projections. For example, in an Orthographic projection, the center_longitude along with the center_latitude defines the point or tangency between the sphere of the planet and the plane of the projection. The map_scale (or map_resolution) is typically defined at the center_latitude and center_longitude. In unprojected images, center_longitude represents the longitude at the center of the image frame.

CENTER_RING_RADIUS REAL(0, 1E9) <km>
The CENTER_RING_RADIUS element applies to images of planetary rings only. It is the radius of the ring element that passes through the center of the image. The ring plane is an imaginary plane that divides the planet in half at the equator and extends infinitely outward into space. The center of the image is a point on the ring plane, even though there may be no actual ring material there.

CENTRAL_BODY_DISTANCE REAL <km>
The CENTRAL_BODY_DISTANCE element provides the distance from the spacecraft to the center of a primary target.

CHANGE_DATE DATE
The change_date data element provides the date on which a record or object was altered.

Note: In the PDS, the change_date element indicates the date when a record in the data dictionary was updated per a change request.

CHANNEL_GEOMETRIC_FACTOR REAL
The channel_geometric_factor element provides the value of G in the formula: j = R/((E2-E1)G), where (E2-E1) is the energy range accepted by the channel. This formula allows conversion of a particle detector channel count rate, R, into a differential intensity, j (counts/time.area.steradians.energy). G has dimensions of area.steradians, and here includes the efficiency of particle counting by the relevant detector.

CHANNEL_GROUP_NAME CHARACTER(20)
The channel_group_name element provides the name given to a group of particle detector channels that are activated or deactivated as a group in any instrument mode configuration. The grouping is not tied to the physical groupings of detectors, and more than one group can be activated during any one mode.

CHANNEL_ID CHARACTER(4)
The channel_id element identifies the instrument channel through which data were obtained. This may refer to a spectral band or to a detector and filter combination.

CHANNEL_INTEGRATION_DURATION REAL(0.24, 0.96) <s>
The channel_integration_duration element provides the length of time during which charge from incoming particles is counted by the detectors for each channel in a given mode.

CHANNELS INTEGER
The channels element provides the number of channels in a particular instrument, section of an instrument, or channel group.

CHECKSUM INTEGER
The checksum element represents an unsigned 32-bit sum of all data values in a data object.

CLASSIFICATION_ID [PDS-CN] CHARACTER(20)

The classification_id data element supplies an identifier that is used to link an abbreviated term to a full, spelled-out name that would be displayed in a data dictionary. In the PDS, classification_id is a general term that embraces both general_classification_type and system_classification_id.

CLUSTERED_KEY [PDS-CN] CHARACTER(12)
The clustered_key element indicates whether a column in a table is part of a unique clustered index. This index determines uniqueness in the table and the sorting order of the data.

CMPRS_QUANTZ_TBL_ID [PDS-IMG-GLL] CHARACTER(10)
The cmprs_quantz_tbl_id (compression quantization table identifier) element provides the Integer Cosine Transform 8X8 quantization matrix identifier. For Galileo the valid values are: UNIFORM, VG2, VG3, and UNK.

COGNIZANT_FULL_NAME CHARACTER(60)
The cognizant_full_name element provides the full name of the individual who has either developed the processing software or has current knowledge of its use. See also: full_name.

COLUMN_DESCRIPTION [PDS-CN] CHARACTER
This is the description of an element in the data base. There should be a description for every element.

COLUMN_NAME [PDS-CN] CHARACTER(30)
This is the < or = to 30 character dictionary name used in documentation and template objects. They are unique and are an alias to the BLNAMEs.

COLUMN_NUMBER INTEGER(1, 0)
The column_number element identifies the location of a specific column within a larger data object, such as a table. For tables consisting of rows (i = 1, N) and columns (j = 1, M), the column_number is the j-th index of any row.

COLUMN_ORDER [PDS-CN] INTEGER
The column_order element represents the sequence number of columns within a table. The sequence begins with 1 for the first column and is incremented by 1 for each subsequent column in the table.

COLUMN_VALUE [PDS-CN] CHARACTER(80)
The column value contains a standard ASCII value used in domain validation. An element may have many possible values that are valid.

COLUMN_VALUE_NODE_ID [PDS-CN] CHARACTER(10)
The column_value_node_id element indicates a list of one or more science nodes for which a standard value is available. The list of science nodes is represented as a concatenation of single-character identifiers in alphabetic order. Allowable identifiers include: F (Fields and Particles), I (Images), N (NAIF), U (unknown - valid only if the column_value_type element is 'P' for a possible value that was provided but the provider is unknown), A (Atmospheres), P (Planetary Rings), R (Radiometry), S (Spectroscopy).

COLUMN_VALUE_TYPE [PDS-CN] CHARACTER(1)
The column_value_type element indicates whether a standard value is considered to be an available value (the value currently exists in the PDS catalog) or a possible value (the value does not currently exist in the PDS catalog but may exist in the future). Example values: A (available value) or P (possible value).

COLUMNS INTEGER(1, 0)
The columns element represents the number of columns in each row of a data object.

Note: In the PDS, the term 'columns' is synonymous with 'fields'.

COMMAND_DESC CHARACTER
The command_desc element provides a textual description associated with a COMMAND_NAME.

COMMAND_NAME CHARACTER(30)
The command_name element provides the name of an uplinked command sent to a spacecraft or instrument.

COMMAND_SEQUENCE_NUMBER INTEGER(1, 0)
The command_sequence_number element provides a numeric identifier for a sequence of commands sent to a spacecraft or instrument.

COMMENT_DATE [PDS-CN] DATE
The comment_date element indicates the date when a user's comment information is inserted into the data base.

COMMENT_ID [PDS-CN] INTEGER
The comment_id element is a unique key used to identify a particular set of user comments.

COMMENT_TEXT [PDS-CN] CHARACTER
The comment_text indicates a line of text in a user's comments.

COMMITTEE_MEMBER_FULL_NAME [PDS-CN] CHARACTER(60)
The committee_member_full_name element identifies a peer review committee member. The member does not necessarily have a PDS userid. See also: full_name.

COMPRESSION_TYPE [PDS-IMG-GLL] CHARACTER(24)
The compression_type element indicates the type of compression/ encoding used for data that was subsequently decompressed/unencoded before storage.

COMPUTER_VENDOR_NAME [PDS-CN] CHARACTER(30)
The computer_vendor_name element identifies the manufacturer of the computer hardware on which the processing software operates.

CONE_ANGLE REAL(0, 180) <deg>
The cone_angle element provides the value of the angle between the primary spacecraft axis and the pointing direction of the instrument.

CONE_OFFSET_ANGLE REAL(-90, 180) <deg>
The cone_offset_angle element provides the elevation angle (in the cone direction) between the pointing direction along which an instrument is mounted and the cone axis of the spacecraft. See also cross_cone_offset_angle, twist_offset_angle, and cone_angle.

CONFIDENCE_LEVEL_NOTE CHARACTER
The confidence_level_note element is a text field which characterizes the reliability of data within a data set or the reliability of a particular programming algorithm or software component. Essentially, this note discusses the level of confidence in the accuracy of the data or in the ability of the software to produce accurate results.

CONTAMINATION_DESC CHARACTER
The contamination_desc element describes the type of data contamination which is associated with a particular contamination_id value. The various values of contamination_id and contamination_desc are instrument dependent.

CONTAMINATION_ID CHARACTER(3)
The contamination_id element identifies a type of contamination which affected an instrument during a particular period of data acquisition. The associated contamination_desc element describes the type of contamination.

COORDINATE_SYSTEM_CENTER_NAME CHARACTER(40)
The coordinate_system_center_name element identifies a named target, such as the Sun, a planet, a satellite or a spacecraft, as being the location of the center of the reference coordinate system. The coordinate_system_center_name element can also be used to identify a barycenter used for a SPICE s_ or p_kernel.

COORDINATE_SYSTEM_DESC CHARACTER
The coordinate_system_desc element describes a named reference coordinate system in terms of the definitions of the axes and the 'handedness' of the system. It also provides other necessary descriptive information, such as the rotation period for rotating coordinate systems.

COORDINATE_SYSTEM_ID CHARACTER(30)
The coordinate_system_id element provides an alphanumeric identifier for the referenced coordinate system.

COORDINATE_SYSTEM_NAME CHARACTER(30)
The coordinate_system_name element provides the full name of the coordinate system to which the state vectors are referenced. PDS has currently defined body-fixed rotating coordinate systems. The Planetocentric system has an origin at the center of mass of the body. The planetocentric latitude is the angle between the equatorial plane and a vector connecting the point of interest and the origin of the coordinate system. Latitudes are defined to be positive in the northern hemisphere of the body, where north is in the direction of Earth's angular momentum vector, i.e., pointing toward the hemisphere north of the solar system invariant plane. Longitudes increase toward the east, making the Planetocentric system right-handed. The Planetographic system has an origin at the center of mass of the body. The planetographic latitude is the angle between the equatorial plane and a vector through the point of interest, where the vector is normal to a biaxial ellipsoid reference surface. Planetographic longitude is defined to increase with time to an observer fixed in space above the object of interest. Thus, for prograde rotators (rotating counter clockwise as seen from a fixed observer located in the hemisphere to the north of the solar system invariant plane), planetographic longitude increases toward the west. For a retrograde rotator, planetographic longitude increases toward the east.

Note: If this data element is not present in the PDS Image Map Projection Object (for pre-V3.1 PDS Standards), the default coordinate system is assumed to body-fixed rotating Planetographic.

COORDINATE_SYSTEM_REF_EPOCH REAL(>=2415000) <d>
The coordinate_system_reference_epoch element provides the Julian date selected as the reference time for a geometric quantity that change over time. For example, the location of a prime meridian may have a fixed value at a reference epoch, with additional time_dependent terms added.

COORDINATE_SYSTEM_TYPE CHARACTER(25)
There are three basic types of coordinate systems: body-fixed rotating, body-fixed non-rotating and inertial. A body-fixed coordinate system is one associated with a body (e.g., planetary body or satellite). In contrast to inertial coordinate systems, a body-fixed coordinate system is centered on the body and rotates with the body (unless it is a non-rotating type). For the inertial coordinate system type, the coordinate system is fixed at some point in space.

Note: If this data element is not present in the PDS Image Map Projection Object (for pre-V3.1 PDS Standards), the default coordinate system is assumed to be body-fixed rotating Planetographic.

COPIES [PDS-CN] INTEGER
The copies element provides the inventory software with the number of copies of an order that a node is willing to ship using a particular order.

CORE_BASE [ISIS] REAL
The core_base element, together with the core_multiplier element, describes the scaling performed on a 'true' data value to compute the value stored in the data object. It also defines the method for recovering the 'true' value: 'true'_value = base + multiplier * stored_value In ISIS practice, the value of core_base is 0.0 for real core items, since scaling is not usually necessary for floating point data.

Note: Base and multiplier correspond directly to the PDS standard data elements OFFSET and SCALING_FACTOR.

CORE_HIGH_INSTR_SATURATION [ISIS] CONTEXT DEPENDENT
The core_high_instr_saturation element identifies a special value whose presence indicates the measuring instrument was saturated at the high end. This value must be algebraically less than the value of the core_valid_minimum element. For Standard ISIS Qubes, a value has been chosen by ISIS convention. The general data type of this element is determined by the core_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If core_item_type is real, the value will be hardware-specific (or rather floating-point-representation-specific) so that it may be specified exactly near the bottom of the allowable range of values. A non-decimal (hexadecimal) general data type is used for this purpose; e.g. 16#FFFCFFFF# for a VAX.

CORE_HIGH_REPR_SATURATION [ISIS] CONTEXT DEPENDENT
The core_high_repr_saturation element identifies a special value whose presence indicates the true value cannot be represented in the chosen data type and length -- in this case being above the allowable range -- which may happen during conversion from another data type. This value must be algebraically less than the value of the core_valid_minimum element. For Standard ISIS Qubes, a value has been chosen by ISIS convention. The general data type of this element is determined by the core_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If core_item_type is real, the value will be hardware- specific (or rather floating-point-representation-specific) so that it may be specified exactly near the bottom of the allowable range of values. A non-decimal (hexadecimal) general data type is used for this purpose; e.g. 16#FFFBFFFF# for a VAX.

CORE_ITEM_BYTES [ISIS] INTEGER(1, 4)
The core_item_bytes element identifies the size in bytes of a core data value. It is the unit of the dimensions specified by the core_items element.

CORE_ITEM_TYPE [ISIS] CHARACTER(30)
The core_item_type element identifies the data type of a core data value. A hardware-specific prefix is used on this element for qubes whose core contains items of more than one byte. The current VAX/VMS implementation of ISIS allows three item types, additional types will be added for a forthcoming Sun/Unix implementation.

CORE_ITEMS [ISIS] INTEGER(1, 1024)
The core_items element provides the sequence of dimensions of the core of a qube data object. The size of the most frequently varying axis is given first. The number of items specified must be equal to the value of the axes element and the items must be listed in storage order. Each dimension is measured in units of the core_item_bytes element.

CORE_LOW_INSTR_SATURATION [ISIS] CONTEXT DEPENDENT
The core_low_instr_saturation element identifies a special value whose presence indicates the measuring instrument was saturated at the low end. This value must be algebraically less than the value of the core_valid_minimum element. For Standard ISIS Qubes, a value has been chosen by ISIS convention. The general data type of this element is determined by the core_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If core_item_type is real, the value will be hardware-specific (or rather floating-point-representation-specific) so that it may be specified exactly near the bottom of the allowable range of values. A non-decimal (hexadecimal) general data type is used for this purpose; e.g. 16#FFFDFFFF# for a VAX.

CORE_LOW_REPR_SATURATION [ISIS] CONTEXT DEPENDENT
The core_low_repr_saturation element identifies a special value whose presence indicates the true value cannot be represented in the chosen data type and length -- in this case being below the allowable range -- which may happen during conversion from another data type. This value must be algebraically less than the value of the core_valid_minimum element. For Standard ISIS Qubes, a value has been chosen by ISIS convention. The general data type of this element is determined by the core_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If core_item_type is real, the value will be hardware- specific (or rather floating-point-representation-specific) so that it may be specified exactly near the bottom of the allowable range of values. A non-decimal (hexadecimal) general data type is used for this purpose; e.g. 16#FFFEFFFF# for a VAX.

CORE_MULTIPLIER [ISIS] REAL
The core_multiplier element, together with the core_base element, describes the scaling performed on a 'true' data value to compute the value stored in the data object. It also defines the method for recovering the 'true' value:
'true'_value = base + multiplier * stored_value
In ISIS practice, the value of core_multiplier is 1.0 for real core items, since scaling is not usually necessary for floating point data.

Note: In the PDS, base and multiplier correspond directly to the data elements OFFSET and SCALING_FACTOR.

CORE_NAME [ISIS] CHARACTER(30)
The core_name element identifies the scientific meaning of the values in the core of a qube data object; e.g. SPECTRAL_RADIANCE or RAW_DATA_NUMBER.

CORE_NULL [ISIS] CONTEXT DEPENDENT
The core_null element identifies a special value whose presence indicates missing data. This value must be algebraically less than the value of the core_valid_minimum element. For Standard ISIS Qubes, the null value is chosen to be the algebraically smallest value allowed by the core_item_type and core_item_bytes elements. The general data type of this element is determined by the core_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If core_item_type is real, the value will be hardware- specific (or rather floating-point-representation-specific) so that it may be specified exactly at the bottom of the allowable range of values. A non-decimal (hexadecimal) general data type is used for this purpose; e.g. 16#FFFFFFFF# for a VAX.

Note: In the PDS, the CORE_NULL element corresponds directly to the data element MISSING.

CORE_UNIT [ISIS] CHARACTER(30)
The core_unit element identifies the scientific unit of the values in the core of a qube data object; e.g. 'WATT*M**-2*SR**-1*uM**-1' (for spectral radiance) or 'DIMENSIONLESS' (for raw data number).

CORE_VALID_MINIMUM [ISIS] CONTEXT DEPENDENT

The core_valid_minimum element identifies the minimum valid core value. Values algebraically less than this value is reserved for special values indicating missing data or various types of invalid data. The general data type of this element is determined by the core_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If core_item_type is real, the value will be hardware-specific (or rather floating-point-representation-specific) so that it may be specified exactly near the bottom of the allowable range of values. A non-decimal (hexadecimal) general data type is used for this purpose; e.g. 16#FFEFFFFF# for a VAX.

CREATE_DATE [PDS-CN] DATE
This date is in YYYYMMDD format and is used for storing the create date of a table or query on the data base.

CRITICALITY [PDS-CN] CHARACTER(1)
This column stores the criticality code for an attribute. A criticality id is assigned to each table's attribute so the criticality can be dependent on the usage within a table. This criticality is used by the catalog bulk load software during a template object validation step.

CROSS_CONE_ANGLE REAL(0, 360) <deg>
The cross_cone_angle element provides the value of an azimuthal measurement orthogonal to cone_angle.

CROSS_CONE_OFFSET_ANGLE REAL(-180, 360)<deg>
The cross_cone_offset_angle element provides the azimuthal angle (in the cross-cone direction) between the pointing direction along which an instrument is mounted and the cross_cone axis of the spacecraft. See also cone_offset_angle, twist_offset_angle, and cross_cone_angle.

CROSSTRACK_SUMMING [PDS-IMG] INTEGER(1, 127)
The crosstrack_summing element provides the number of detector pixel values in the crosstrack direction that have been averaged to produce the final output pixel.

CRYOCOOLER_DURATION INTEGER <s>
The cryocooler_duration element provides the length of time the cryocooler was on when an observation was made.

CRYOCOOLER_TEMPERATURE REAL <K>
The cryocooler_temperature element provides the temperature of the cryocooler at the time an observation was made.

CURATING_NODE_ID [DIS] CHARACTER(30)
The curating_node_id element provides the id of the node currently maintaining the data set or volume and is responsible for maintaining catalog information.

CUT_OUT_WINDOW [PDS-IMG-GLL] INTEGER
Galileo Solid State Imaging-specific. Images can be edited so that only an image area or CUT OUT WINDOW is compressed using Integer Cosine Transform, BARC or Huffman compression and transmitted to Earth. The cut_out_window element indicates the location and size of this image area as defined by four numbers: starting line, starting sample, number of lines, number of samples (the origin of the image coordinate system is at line, sample=1,1 for the upper-left corner with samples increasing to the right and lines increasing down).

CYCLE_ID CHARACTER(10)
The cycle_id element identifies one of several cycles, each of which is a set of repeated activities.

DA_CONTACT_PDS_USER_ID CHARACTER(60)

The da_contact_pds_user_id element provides the pds_user_id of the data administration contact at a node.

DARK_CURRENT_CORRECTION_FLAG CHARACTER(5)
The dark_current_correction_flag element indicates whether or not a dark current correction was applied to an image.

Note: For MPF, this correction was applied to the image on board the spacecraft, before the image was transmitted to Earth.

DARK_CURRENT_DOWNLOAD_FLAG CHARACTER(5)
The dark_current_download_flag element indicates whether or not an image of the dark strip area of the CCD was downlinked along with the image data.

DARK_CURRENT_FILE_NAME CHARACTER(50)
The DARK_CURRENT_FILE_NAME element provides the dark current image file (an image taken without opening the camera shutter) which should be used to perform radiometric calibration of the image. The dark current image provides a reference label of the build-up of any charges on the sensor that need to be subtracted from a shuttered image during calibration. Selection of the appropriate dark current image may be based on time, camera, temperature, readout conditions, light flood, gain and offset.

DATA_COVERAGE_PERCENTAGE REAL(0, 100)
The data_coverage_percentage element gives the percentage of samples obtained compared to the maximum number that could have been obtained.

DATA_ENGINEER_FULL_NAME [DIS] CHARACTER(30)
The data_engineer_full_name element provides the id of the CN data engineer.

DATA_FORMAT CHARACTER(20)
The data_format element supplies the name of the data format or language that was used to archive the science data that this software accesses.

DATA_LINES [PDS-PPI] INTEGER
The number of complete or partial lines with valid data within a frame of high rate data.

Note: Voyager Specific: A frame of high rate waveform data can include up to 800 lines, however, some lines may be missing due to data outages or only a partial frame may have been recorded. This parameter provides some visibility on how complete a given frame is.

DATA_OBJECT_TYPE CHARACTER(30)
The data_object_type element identifies the data object type of a given set of data. Example values: IMAGE, MAP, SPECTRUM

Note: Within the PDS, data object types are assigned according to the standards outlined in the PDS Standards Reference.

Note: within AMMOS and only for the Magellan catalog, this element is used as an alias for data_set_id. The use of data_object_type as such provides backward compatibility with earlier AMMOS conventions. The use of this element as an alias for data_set_id is not recommended for any new tables. See data_set_id.

DATA_PATH_TYPE CHARACTER(60)
The data_path_type element identifies the type of data path for transmission between an instrument and the ground data storage system. Example values: REALTIME, RECORDED DATA PLAYBACK.

DATA_QUALITY_DESC CHARACTER
The data_quality_desc element describes the data quality which is associated with a particular data_quality_id value. The various values of data_quality_id and data_quality_desc are instrument dependent.

DATA_QUALITY_ID CHARACTER(3)
The data_quality_id element provides a numeric key which identifies the quality of data available for a particular time period. The data_quality_id scheme is unique to a given instrument and is described by the associated data_quality_desc element.

DATA_RATE REAL <b/s>
The data_rate element provides the rate at which data were transmitted from a spacecraft to the ground (i.e., the telemetry rate).

DATA_RECORDS [MARS-OBSERVER] INTEGER
The data_records data element indicates the number of records that appear in a particular data file.

Note: Within AMMOS, this element is used as a validation tool to ensure data integrity for stream files that have no end marker.

DATA_SET_ACCEPTANCE_DATE [PDS-CN] DATE
Definition TBD.

DATA_SET_CATALOG_FLAG [PDS-CN] CHARACTER(1)
The data_set_catalog_flag element indicates whether or not a data set collection or a data set exists in the PDS Data Set Catalog.

DATA_SET_COLL_OR_DATA_SET_ID [PDS-CN] CHARACTER(40)
The data_set_coll_or_data_set_id element provides the identifier for either a PDS data set collection or data set.

DATA_SET_COLLECTION_DESC CHARACTER
The data_set_collection_desc element describes the content and type of the related data sets contained in the collection.

DATA_SET_COLLECTION_ID CHARACTER(40)
The data_set_collection_id element is a unique alphanumeric identifier for a collection of related data sets or data products. The data set collection is treated as a single unit, whose components are selected according to a specific scientific purpose. Components are related by observation type, discipline, target, time, or other classifications.
Example value: PREMGN-E/L/H/M/V-4/5-RAD/GRAV-V1.0

Note: In the PDS, data set collection ids are constructed according to PDS nomenclature standards outlined in the in the Standards Reference.

DATA_SET_COLLECTION_MEMBER_FLG CHARACTER(1)
The data_set_collection_member_flg element indicates whether or not a data set is a member of a data set collection.

DATA_SET_COLLECTION_NAME CHARACTER(60)
The data_set_collection_name element provides the full name given to a collection of related data sets or data products. The data set collection is treated as a single unit, whose components are selected according

to a specific scientific purpose. Components are related by observation type, discipline, target, time, or other classifications.
Example value: PRE-MAGELLAN E/L/H/M/V 4/5 RADAR/GRAVITY DATA V1.0

Note: In the PDS, the data set collection name is constructed according to nomenclature standards outlined in the PDS Standards Reference.

DATA_SET_COLLECTION_RELEASE_DT DATE
The data_set_collection_release_dt element provides the date when the data set collection was released for use.

Formation rule: YYYY-MM-DD

DATA_SET_COLLECTION_USAGE_DESC CHARACTER
The data_set_collection_usage_desc element provides information required to use the data.

DATA_SET_DESC CHARACTER
The data_set_desc element describes the content and type of a data set and provides information required to use the data (such as binning information).

DATA_SET_ID CHARACTER(40)
The data_set_id element is a unique alphanumeric identifier for a data set or a data product. The data_set_id value for a given data set or product is constructed according to flight project naming conventions. In most cases the data_set_id is an abbreviation of the data_set_name.
Example value: MR9/VO1/VO2-M-ISS/VIS-5-CLOUD-V1.0.

Note: In the PDS, the values for both data_set_id and data_set_name are constructed according to standards outlined in the Standards Reference.

DATA_SET_LOCAL_ID [PDS-SBN] CHARACTER(8)
The DATA_SET_LOCAL_ID element provides a short (of order 3 characters) acronym used as the local ID of a data set (Example value: IGLC). It may also appear as the first element of file names from a particular DATA_SET (Example value:IGLCINDX.LBL).

DATA_SET_NAME CHARACTER(60)
The data_set_name element provides the full name given to a data set or a data product. The data_set_name typically identifies the instrument that acquired the data, the target of that instrument, and the processing level of the data. Example value: MR9/VO1/VO2 MARS IMAGING SCIENCE SUBSYSTEM/VIS 5 CLOUD V1.0. See also: data_set_id.

Note: In PDS, the data_set_name is constructed according to standards outlined in the Standards Reference.

Note: This element is defined in the AMMOS Magellan catalog as an alias for file_name to provide backward compatibility

DATA_SET_OR_INST_PARM_DESC CHARACTER
The data_set_or_inst_parm_desc element describes either a data set or instrument parameter.

DATA_SET_OR_INSTRUMENT_PARM_NM CHARACTER(40)
The data_set_or_instrument_parameter_name element provides either a data_set_parameter_name or an instrument_parameter_name. That is, this element may have values which are either the name of a

parameter derived from measured data (the data_set_parameter_name) or the name of a parameter measured by an instrument (the instrument_parameter_name).

DATA_SET_PARAMETER_NAME CHARACTER(40)
The data_set_parameter_name element provides the name of the scientific parameter or physical quantity that was derived from measured data. A description of the dataset parameter is provided by the data_set_or_inst_parm_desc. See also instrument_parameter_name. Example value: MAGNETIC FIELD INTENSITY

DATA_SET_PARAMETER_UNIT CHARACTER(60)
The data_set_parameter_unit element specifies the unit of measure of associated data set parameters.

DATA_SET_RELEASE_DATE DATE
The data_set_release_date element provides the date when a data set is released by the data producer for archive or publication. In many systems this represents the end of a proprietary or validation period.

Formation rule: YYYY-MM-DD

Note: In AMMOS, the data_set_release_date element is used to identify the date at which a product may be released to the general public from proprietary access. AMMOS-related systems should apply this element only to proprietary data.

DATA_SET_TERSE_DESC [PDS-CN] CHARACTER(255)
A brief description of the data set

DATA_SETS INTEGER
The data_sets element identifies the number of data sets contained in a data set collection.

DATA_SOURCE_DESC CHARACTER
The data_source_desc element describes the source of a data value descriptive of a target body. The source may be a document, an individual, or an institution. See also data_source_id.

DATA_SOURCE_ID CHARACTER(60)
The data_source_id element identifies the source of a data value descriptive of a target body. The source may be a document, an individual, or an institution, as described by the associated data_source_desc element.

DATA_STREAM_TYPE [JPL-AMMOS-SPECIFIC] CHARACTER(12)
The data_stream_type element identifies a particular type of data stream to which the given data product is related.

Note: In AMMOS this element is used to identify the particular type of data stream that a given decommutation maps can process.

DATA_TYPE CHARACTER(30)
The data_type element supplies the internal representation and/or mathematical properties of a value being stored. See also: bit_data_type, general_data_type.

Note: In the PDS, users may find a bit-level description of each data type in the Standards Reference document.

DECAL_NAME [JPL-AMMOS-SPECIFIC] CHARACTER

The decal_name element describes the specific decalibration data file. This element is used only in AMMOS-Magellan mission operations.

DECLINATION REAL(-90, 90) <deg>
The declination element provides the value of an angle, corresponding to latitude, used to fix position on the celestial sphere. Declination is measured positive north and negative south of the celestial equator, and is defined relative to a specified reference period or epoch. See right_ascension.

DEFINING_AUTHORITY_NAME CHARACTER(60)
The defining_authority_name element identifies the Control Authority Office (CAO) responsible for maintaining the definition of a particular SFDU format. CAOs are officially recognized by the Consultative Committee for Space Data Systems (CCSDS).

DELIMITING_PARAMETER_NAME [PDS-CN] CHARACTER(30)
The delimiting_parameter_name element provides the name of a parameter the values of which are used to establish the boundaries of a set of data. Example values: FRAME IDENTIFICATION, LOCAL TIME, and MAXIMUM LATITUDE.

DERIVED_FRESNEL_REFLECT_CORR [PDS-GEO-MGN] REAL
The derived_fresnel_reflect_corr element provides the value of the derived_fresnel_reflectivity correction factor for diffuse scattering which is a factor by which the derived_fresnel_reflectivity be multiplied by (but only if the derived_fresnel_reflectivity is set in alt_flag_group), to allow for the effect of small-scale surface roughness.

DERIVED_FRESNEL_REFLECTIVITY [PDS-GEO-MGN] REAL
The derived_fresnel_reflectivity element provides the value of the bulk reflectivity of the surface material, averaged over the radar footprint, obtained by fitting the altimeter echo to a suite of theoretical templates derived from the Hagfors scattering model, but ignoring the effect of small-scale surface roughness.

DERIVED_MAXIMUM CONTEXT DEPENDENT
The derived_maximum element indicates the largest value occurring in a given instance of the data object after the application of a scaling factor and/or offset.

DERIVED_MINIMUM CONTEXT DEPENDENT
The derived_minimum element indicates the smallest value occurring in a given instance of the data object after the application of a scaling factor and/or offset.

DERIVED_PLANETARY_RADIUS [PDS-GEO-MGN] REAL <km>
The derived_planetary_radius element provides the value of the mean Venus radius for this radar footprint, obtained by subtracting (uncorrected_range_to_nadir - atmospheric_correct_to_range) from the length of the alt_spacecraft_position_vector element.

DERIVED_PLANETARY_THRESH_RADI [PDS-GEO-MGN] REAL <km>
The derived_planetary_thresh_radi element provides the value of the threshold Venus radius for this radar footprint, obtained from the value of the derived_thresh_detector_index element, after correcting for atmospheric delay.

DERIVED_RMS_SURFACE_SLOPE [PDS-GEO-MGN] REAL <deg>
The derived_rms_surface_slope element provides the value of the root mean square meter-scale surface slope, averaged over the radar footprint, obtained by fitting the altimeter echo to a suite of theoretical templates derived from the Hagfors scattering model.

DERIVED_THRESH_DETECTOR_INDEX [PDS-GEO-MGN] INTEGER

The derived_thresh_detector_index element provides the value of the element in range_sharp_echo_profile that satisfies the altimeter threshold detection algorithm, representing the distance to the nearest object in this radar footprint in units of 33.2 meters, modulus a 10.02 kilometer altimeter range ambiguity.

DESCRIPTION CHARACTER
The description element provides a free-form, unlimited-length character string that represents or gives an account of something.

DETAILED_CATALOG_FLAG CHARACTER(1)
The detailed_catalog_flag element is a yes-or-no flag which indicates whether additional information is available for this data set in a detailed-level catalog.

DETECTOR_ASPECT_RATIO REAL
The detector_aspect_ratio element provides the ratio of the horizontal to the vertical field of view of a detector.

DETECTOR_DESC CHARACTER
The detector_desc element describes a detector utilized by an instrument.

DETECTOR_GROUP_NAME CHARACTER(20)
Definition TBD.

DETECTOR_GROUPS INTEGER
Definition TBD.

DETECTOR_ID CHARACTER(20)
The detector_id element identifies a particular instrument detector. The associated detector_desc element describes the detector.

DETECTOR_PIXEL_HEIGHT REAL <micron>
The detector_pixel_height element provides the height of a pixel in the CCD sensor measured in microns.

DETECTOR_PIXEL_WIDTH REAL <micron>
The detector_pixel_width element provides the width of a pixel in the CCD sensor measured in microns.

DETECTOR_TEMPERATURE [PDS-GEO-VL] REAL <K>
The DETECTOR_TEMPERATURE is the temperature that the instrument (detector) operated at while a measurement was made. The importance for Viking Lander is that the radiometric calibration is slightly dependent on detector temperature.

DETECTOR_TYPE CHARACTER(20)
The detector_type element identifies the type of an instrument's detector. Example values: SI CCD, INSB, GE, VIDICON, PHOTODIODE.

DETECTORS INTEGER
The detectors element provides the number of detectors of a specified type contained in the subject instrument.

DIFFRACTION_CORRECTED_FLAG [PDS-RINGS] CHARACTER(1)
The diffraction_corrected_flag element is a yes-or-no flag that indicates whether a ring occultation data product has been corrected for diffraction. In general, it equals 'N' for stellar occultation but data may equal 'Y' or 'N' for radio occultation data, depending on the processing. If the data product has been corrected for diffraction, then the radres element specifies the processing resolution.

DISCIPLINE_DESC CHARACTER
The discipline_desc element describes the discipline identified by the discipline_name element.

DISCIPLINE_NAME CHARACTER(30)
The discipline_name element identifies the major academic or scientific domain or specialty of interest to an individual or to a PDS Node.

DISPERSION_MODE_ID [PDS-SBN] CHARACTER(4)
The DISPERSION_MODE_ID element describes the dispersion mode selected for a spectrograph.

Note: For the International Ultraviolet Explorer (IUE) spacecraft, the spectrographs can operate in a low (2.64 Angstrom/pix for Long-Wavelength Primary (LWP) and 1.67 A/pix for Short-Wavelength Primary (SWP)) or high (7.22 km/sec/pix for LWP and 7.70 km/sec/pix for SWP) dispersion mode.

DISPLAY_FORMAT [PDS-CN] CHARACTER(12)
The display_format element provides display format information to software that formats data to an output device. Valid format types include DATE(x) where X is the number of digits in a date. Usually DATE(6) (YYYY-MM) or DATE(8) (YYYY-MM-DD). TIME(X) where X is the number of digits in a time statement. This is usually represented as TIME(6) (HH:MM:SS) or TIME(4) (HH:MM)> DATETIME is used for UTC system format date-times (MM-DD-YYYYTHH:MM:SS.HHH). JUSTLEFT is used for left-justified character strings, and JUSTRIGHT is used for right justification. DIGIT(X) is used where X is the number of digits in an integer, so 897 would be DIGIT(3). SCI(X,Y) is used where X is the number of significant digits before the decimal in scientific notation, and Y is the number following the decimal, so 1.293E-2 would be SCI(1,3). FLOAT(X) is used where X is the total number of digits in a floating point number, so 33.018746 would be FLOAT(8). USDOLLAR is used for monetary amounts in the indicated currency, PHONE is used for telephone numbers, and FTSPHONE is used for seven-digit numbers in the Federal Telephone System.

DOCUMENT_FORMAT CHARACTER(60)
The document_format element represents the manner in which documents are stored, such as TEX, POSTSCRIPT, TIFF, etc. Version numbers for these formats should be included when appropriate, such as 'WORDPERFECT 5.0'.

DOCUMENT_NAME CHARACTER(120)
The document_name element provides the name of a document.

DOCUMENT_TOPIC_TYPE CHARACTER(60)
The document_topic_type element is a keyword which identifies the major topic of a reference document.

DOWNLOAD_ID CHARACTER(60)
The download_id element is the unique mission identifier used to indicate a download of the spacecraft's onboard digital data storage unit.

DOWNLOAD_TYPE CHARACTER
The download_type element specifies which data to download.

DOWNTRACK_SUMMING [PDS-IMG] INTEGER(1, 127)
The downtrack_summing element provides the number of detector pixel values in the downtrack direction that have been averaged to produce the final output pixel.

DSN_SPACECRAFT_NUM [JPL-AMMOS-SPECIFIC] INTEGER

The dsn_spacecraft_num element identifies the unique Deep Space Network identification number for a spacecraft or other data source/sink from which a product came or to which the product is to be sent.

DSN_STATION_NUMBER INTEGER
The dsn_station_num identifies the deep space network station number through which data were received or to which commands are to be sent.

DUST_FLAG [PDS-GEO-VL] CHARACTER(1)
The DUST_FLAG parameter indicates whether a dust sequence was executed in association with an image or observation.

EARTH_BASE_DESC CHARACTER
The earth_base_desc element describes the earth base from which particular instrument measurements where taken. An earth base can be a laboratory, observatory, etc., and is identified by the earth_base_id element.

EARTH_BASE_ID CHARACTER(6)
The earth_base_id element provides a unique identifier for the laboratory, observatory, or other location of an earth-based instrument.

EARTH_BASE_INSTITUTION_NAME CHARACTER(60)
The earth_base_institution_name element identifies a university, research center, NASA center or other institution associated with a laboratory or observatory.

EARTH_BASE_NAME CHARACTER(60)
The earth_base_name element identifies the name of the laboratory, observatory, or other location of a earth-based instrument.

EARTH_RECEIVED_START_TIME [PDS-RINGS] TIME
The earth_received_start_time element provides the beginning time at which telemetry was received during a time period of interest. This should be represented in UTC system format. See also earth_received_time.

EARTH_RECEIVED_STOP_TIME [PDS-RINGS] TIME
The earth_received_stop_time element provides the ending time for receiving telemetry during a time period of interest. This should be represented in the UTC system format. See also earth_received_time.

EARTH_RECEIVED_TIME TIME
The earth_received_time element provides the time at which telemetry was received on earth. This should be represented in the UTC system format. For real time data, the difference between this time and the spacecraft_event_time is the signal travel time from the spacecraft to earth.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

EASTERNMOST_LONGITUDE REAL(-180, 360)<deg>
The following definitions describe easternmost longitude for the body-fixed, rotating coordinate systems: For Planetocentric coordinates and for Planetographic coordinates in which longitude increases toward the east, the easternmost (rightmost) longitude of a spatial area (e.g.,a map, mosaic, bin,feature or region) is the maximum numercial value of longitude unless it crosses the Prime Meridian. NULL For Planetographic coordinates in which longitude increases toward the west, the easternmost (rightmost) longitude of a spatial area (e.g., a map, mosaic, bin, feature or region) is the minimum numerical value of longitude unless it crosses the Prime Meridian. For the Earth, Moon and Sun, PDS also supports the traditional use of the range (-180,180) in which case the easternmost (rightmost) longitude is the maximum numerical value of longitude unless it crosses 180.

EDIT_MODE_ID CHARACTER(20)
The edit_mode_id element indicates the amount of data read from an imaging instrument's vidicon. '1:1' indicates the full-resolution of the vidicon. Example values: (Voyager) 3:4, 1:2, 1:3, 1:5, and 1:1.

EDIT_ROUTINE_NAME [PDS-CN] CHARACTER(12)
The edit_routine_name element provides the name of a edit routine name that the catalog bulk loading software should execute during any validation procedures.

EDR_FILE_NUMBER INTEGER(1, 100)
The EDR_FILE_NUMBER element provides the file position of the data file when it was originally recorded on an Experiment Data Record tape.

EDR_SOFTWARE_NAME [CLEM] CHARACTER(30)
The edr_software_name element identifies the name and version of the Clementine Mission software that generated the EDR products.

EDR_TAPE_ID CHARACTER(7)
The EDR_TAPE_ID element indicates the volume identifier of the Experiment Data Record tape on which the data file was originally recorded.

EFFECTIVE_TIME [JPL-AMMOS-SPECIFIC] TIME
The effective_time is an alias for start_time used by AMMOS- MGN ephemeris files to define the time at which the data takes effect.

ELECTRONIC_MAIL_ID CHARACTER(60)
The electronic_mail_id element provides an individual's mailbox name on the electronic mail system identified by the electronic_mail_type element.

ELECTRONIC_MAIL_TYPE CHARACTER(20)
The electronic_mail_type element identifies an electronic mail system by name. Example values: TELEMAIL, NSI/DECNET.

ELECTRONICS_DESC CHARACTER
The electronics_desc element describes the electronics associated with a given instrument.

ELECTRONICS_ID CHARACTER(20)
The electronics_id element identifies the electronics associated with a given instrument.

ELEVATION REAL(-90, 90) <deg>
The elevation element provides the angular elevation of a point of interest (for example, the center point of an image of a solar system object taken from a lander or a rover) above the azimuthal reference plane. Elevation is measured in a spherical coordinate system. The zero elevation point lies in the azimuthal reference plane and positive elevation is measured toward the positive direction of the principal axis of the spherical coordinate system. See azimuth.

ELEVATION_FOV REAL(0, 360) <deg>
The elevation_fov element provides the angular measure of the vertical field of view of an imaged scene.

ELEVATION_MOTOR_CLICKS INTEGER
The elevation_motor_clicks element provides the number of motor step counts an instrument or other mechanism rotated in the vertical direction from the low hard stop.

EMISSION_ANGLE REAL(0, 180) <deg>
The emission_angle element provides the value of the angle between the surface normal vector at the intercept point and a vector from the intercept point to the spacecraft. The emission_angle varies from 0 degrees when the spacecraft is viewing the subspacecraft point (nadir viewing) to 90 degrees when the intercept is tangent to the surface of the target body. Thus, higher values of emission_angle indicate more oblique viewing of the target. Values in the range of 90 to 180 degrees are possible for ring data.

ENCODING_COMPRESSION_RATIO REAL
The encoding_compression_ratio element specifies the compression factor of the data.

ENCODING_MAX_COMPRESSION_RATIO [PDS-IMG-GLL] REAL(0, 999)
The encoding_max_compression_ratio element provides the maximum compression ratio applied to the data on board the spacecraft. For Galileo, this keyword is valid only for Integer Cosine Transform (ICT) or Huffman compression. If the image is compressed with ICT this value is the ICT Maximum Compression Ratio, otherwise it is the Huffman Maximum Compression Ratio.

ENCODING_MIN_COMPRESSION_RATIO [PDS-IMG-GLL] REAL(0, 999)
The encoding_min_compression_ratio element provides the minimum compression ratio applied to the data on board the spacecraft. For Galileo, valid only for Integer Cosine Transform (ICT) or Huffman compression. If the image is compressed with ICT this value is the ICT Minimum Compression Ratio, otherwise it is the Huffman Minimum Compression Ratio.

ENCODING_TYPE CHARACTER(30)
The encoding_type element indicates the type of compression or encryption used for data storage.

ENTROPY REAL(0, 8) <b/pixel>
The ENTROPY element identifies the average entropy level (bits/pixel). Entropy is a measure of scene activity and it applies to the entire image.

Note: For the Galileo SSI flight images the entropy is defined as: H = - SUM (from j= -255 to j= +255) p(j)[log(2) p(j)] where p(j) is the probability that two horizontally adjacent pixels have a different j, where -255 <j < 255.

EPHEMERIS_LATITUDE_CORRECTION [PDS-GEO-MGN] REAL <deg>
The ephemeris_latitude_correction (VBF85) element provides the value of the correction applied to the footprint latitude value by the post-fitting MGMORB phase of the altimetry and radiometry reduction program.

EPHEMERIS_LONGITUDE_CORRECTION [PDS-GEO-MGN] REAL <deg>
The ephemeris_longitude_correction (VBF85) element provides the value of the correction applied to the footprint longitude value by the post-fitting MGMORB phase of the altimetry and radiometry reduction program.

EPHEMERIS_RADIUS_CORRECTION [PDS-GEO-MGN] REAL <km>
The ephemeris_radius_correction element provides the value of the correction applied to the length of the alt_spacecraft_position_vector element by the post-fitting MGMORB phase of the altimetry and radiometry reduction program.

EQUATORIAL_RADIUS REAL(0, 100000) <km>
The equatorial_radius element provides the average radius in the equatorial plane of the best fit spheroid which approximates the target body.

ERROR_PIXELS INTEGER

The error_pixels element provides the number of pixels that are outside a valid DN range, after all decompression and post decompression processing has been completed.

EVENT_NAME CHARACTER(40)
The event_name element identifies an event. This may be a spacecraft event, a ground_based event or a system event.

EVENT_START_HOUR CHARACTER(10)
The event_start_hour element provides the date and hour of the beginning of an event (whether a spacecraft event, a ground based event or a system event) in the PDS standard (UTC system) format. The values associated with this element are derived from existing values of start_time and are used strictly for the PDS catalog performance enhancements.

EVENT_TYPE CHARACTER(30)
The event_type element identifies the classification of an event. Example values: MAGNETOPAUSE CROSSING, VOLCANIC ERUPTION, CLOSEST APPROACH.

EVENT_TYPE_DESC CHARACTER
The event_type_desc element describes the type of event identified by the event_type element.

EXPECTED_PACKETS INTEGER
The expected_packets element provides the total number of telemetry packets which constitute a complete data product, i.e., a data product without missing data.

EXPERTISE_AREA_DESC CHARACTER
The expertise_area_desc element describes a particular area of individual expertise.

EXPERTISE_AREA_TYPE CHARACTER(20)
The expertise_area_type element identifies an individual's area of expertise. The corresponding expertise_area_desc element describes the area of expertise.

EXPOSURE_COUNT INTEGER
The exposure_count element provides the maximum number of exposures taken during a specified interval. The value is dependent on exposure type.

EXPOSURE_DURATION REAL <ms>
The exposure_duration element provides the value of the time interval between the opening and closing of an instrument aperture (such as a camera shutter).

EXPOSURE_OFFSET_FLAG CHARACTER(3)
The exposure_offset_flag element indicates the (instrument_dependent) mode of the offset state of a camera. Offset is a constant value which is added to an instrument's output signal to increase or decrease the level of that output.

EXPOSURE_OFFSET_NUMBER REAL <ms>
The exposure_offset_number element provides the value of a numerical constant which was added to the exposure duration for a given imaging instrument.

EXPOSURE_TYPE CHARACTER(15)
The EXPOSURE_TYPE element indicates the exposure setting on a camera.

FACILITY_NAME CHARACTER(60)

The facility_name element identifies a department, laboratory, or subsystem that exists within an institution.

FAX_NUMBER CHARACTER(30)
The fax_number data element provides the area code and telephone number needed to transmit data to an individual or a node via facsimile machine.

FEATURE_NAME CHARACTER(40)
The feature_name element provides the proper IAU_approved name of a feature on a solar system body. Example value: OLYMPUS MONS.

FEATURE_TYPE CHARACTER(30)
The feature_type element identifies the type of a particular feature, according to IAU standards. Example values: IMPACT CRATER, VOLCANO.

FEATURE_TYPE_DESC CHARACTER
The feature_type_desc element provides the IAU standard definition for a particular feature_type.

FILE_NAME CHARACTER
The file_name element provides the location independent name of a file. It excludes node or volume location, directory path names, and version specification. To promote portability across multiple platforms, PDS requires the file_name to be limited to an 8-character basename, a full stop (. period), and a 3-character extension. Valid characters include capital letters A - Z, numerals 0 - 9, and the underscore character (_).

FILE_RECORDS INTEGER
The file_records element indicates the number of physical file records, including both label records and data records.

Note: In the PDS the use of file_records along with other file-related data elements is fully described in the Standards Reference.

FILE_SPECIFICATION_NAME CHARACTER(255)
The file_specification_name element provides the full name of a file, including a path name, relative to a PDS volume. It excludes node or volume location. Path names are limited to eight (8) directory levels, and are separated by the forward slash (/) character. Each directory is limited to 8 characters chosen from the set {A-Z, 0-9, _}. The path is followed by a valid file name. See also: file_name. Example values: TG15NXXX/TG15N1XX/TG15N12X/TG15N120.DAT EDR/C100611/E1006110.00A

FILES INTEGER(1, 0)
The files element identifies the total number of files.

Note: As an example in the PDS, the keyword files within the Directory Object indentifies the total number of files in the directory. Within the Volume Object the keyword files identifies the number of files within the volume.

FILTER_NAME CHARACTER(20)
The filter_name element provides the commonly-used name of the instrument filter through which an image or measurement was acquired or which is associated with a given instrument mode. Example values: RED, GREEN. See also filter_number.

FILTER_NUMBER CHARACTER(4)

The filter_number element provides the number of an instrument filter through which an image or measurement was acquired or which is associated with a given instrument mode.

Note: that the filter_number is unique, while the filter_name is not.

FILTER_TYPE CHARACTER(30)
The filter_type element identifies the type of a given instrument filter. Example values: INTERFERENCE, MESH, BANDPASS, BLOCKING.

FIRST_ALT_FOOTPRINT_TDB_TIME [PDS-GEO-MGN] REAL
The first_alt_footprint_tdb_time element provides the value of the spacecraft ephemeris time that represents the first altimeter footprint of this orbit. It is equal to the altimetry_footprint_tdb_time value in the first record of this orbit's altimetry data file.

FIRST_IMAGE_TIME [MARS-OBSERVER] TIME
The first_image_time element indicates the start_time (or image_time) that appears in the label of the first image on an archive medium.

FIRST_LINE INTEGER(1, 0)
The first_line element indicates the line within a source image that corresponds to the first line in a sub-image.

FIRST_LINE_SAMPLE INTEGER(1, 0)
The first_line_sample element indicates the sample within a source image that corresponds to the first sample in a sub-image.

FIRST_PRODUCT_ID [MARS-OBSERVER] CHARACTER(40)
The first_product_id data element indicates the product_id that appears in the label of the first data product on an archive medium.

FIRST_RAD_FOOTPRINT_TDB_TIME [PDS-GEO-MGN] REAL
The first_rad_footprint_tdb_time element provides the value of the spacecraft ephemeris time of the first radiometer measurement of this orbit. It is equal to the rad_spacecraft_epoch_tdb_time value in the first record of this orbit's radiometry data file.

FIRST_STANDARD_PARALLEL REAL(-90, 90) <deg>
The first_standard_parallel element is used in Conic projections. If a Conic projection has a single standard parallel, then the first_standard_parallel is the point of tangency between the sphere of the planet and the cone of the projection. If there are two standard parallels (first_standard_parallel, second_standard_parallel), these parallel are the intersection lines between the sphere of the planet and the cone of the projection. The map_scale is defined at the standard parallels.

FLAT_FIELD_CORRECTION_FLAG CHARACTER(13)
The flat_field_correction_flag element indicates whether or not a flat field correction was applied to AN image.

Note: For MPF, this correction was applied to the image on board the spacecraft, before the image was transmitted to Earth.

FLATTENING REAL(0, 1)
The flattening data element provides the value of the geometric oblateness of a target body, defined as the ratio of the difference between the body's equatorial and polar radii to the equatorial radius (in most cases, evaluated as: (a_axis_radius - c_axis_radius) / a_axis_radius).

FOCAL_PLANE_TEMPERATURE REAL <K>
The focal_plane_temperature element provides the temperature of the focal plane array in degrees kelvin at the time the observation was made.

FOOTPRINT_NUMBER [PDS-GEO-MGN] INTEGER
The footprint_number element provides a signed integer value. The altimetry and radiometry processing program assigns footprint 0 to that observed at nadir at periapsis. The remaining footprints are located along the spacecraft nadir track, with a separation that depends on the doppler resolution of the altimeter at the epoch at which that footprint is observed. Pre-periapsis footprints will be assigned negative numbers; post-periapsis footprints will be assigned positive ones. A loss of several consecutive burst records from the ALT-EDR will result in missing footprint numbers.

FORMAL_CORRELATIONS_GROUP [PDS-GEO-MGN] REAL
The formal_correlations_group provides the formal correlations between the derived_planetary_radius and the derived_rms_surface_fresnel_reflect elements, and between the derived_fresnel_reflectivity and the derived_planetary_radius elements, respectively. As the profile fitting algorithm is non-linear, the correlations may not be symmetric.

FORMAL_ERRORS_GROUP [PDS-GEO-MGN] REAL
The formal_errors_group element provides the value of the 1-sigma statistical errors expected in the determination of the derived_planetary_radius, the derived_rms_surface_slope, and the derived_fresnel_reflectivity elements, respectively.

FORMAT CHARACTER(10)
A specified or predetermined arrangement of data within a file or on a storage medium.

Note: In the PDS, the format element indicates the display specification for a collection of data. It is equivalent to the FORTRAN language format specification. Example values: 'Ew.deEXP', A6, I5.

FORMAT_DESC CHARACTER
The format_desc element provides a textual description of the format of the subject data.

FORMATION_RULE_DESC [PDS-CN] CHARACTER
The formation_rule_desc element supplies a rule that is to be applied during the creation of a value for the data element. For example, the values supplied for reference_key_id must conform to the rules used by a specific professional journal for referencing citations.

FOV_SHAPE_NAME CHARACTER(20)
The field_of_view_shape_name element identifies the geometric shape of the field of view of an instrument.

FOVS INTEGER
The fovs (fields-of-view) element indicates the number of fields of view associated with a single fov shape within a section of an instrument.

FRAME_DURATION REAL(2, 96) <s>
The frame_duration element provides the value of the length of time required to measure one frame of data. The frame_duration is constant within a given instrument cycle, which is identified by the cycle_id element.

FRAME_ID CHARACTER(10)

The frame_id element provides identification for a particular instrument measurement frame. A frame consists of a sequence of measurements made over a specified time interval, and may include measurements from different instrument modes. These sequences repeat from cycle to cycle and sometimes within a cycle.

FRAME_SEQUENCE_NUMBER INTEGER
The frame_sequence_number element indicates the location within a cycle at which a specific frame occurs. Frames are repeated in a specific order within each cycle.

FRAMES INTEGER
The frames element provides the number of frames within a particular cycle, which is identified by the cycle_id element.

FTP_FILE_FORMAT CHARACTER(12)
The ftp_file_format element describes the format of the file at the anonymous ftp site.

FTP_SITE_ID CHARACTER(30)
The ftp_site_id element supplies name of an anonymous ftp site from which this software may be retrieved

FTS_NUMBER CHARACTER(7)
The fts_number element provides the Federal Telecommunications System (FTS) telephone number of an individual.

FULL_NAME CHARACTER(60)
The full_name element provides the complete name or identifier for a person or object. For an individual, full name includes the name as well as titles and suffixes. For an object, full name provides the spelled-out name that in some cases corresponds to an 'id'.

GAIN_MODE_ID CHARACTER(30)
The gain_mode_id element identifies the gain state of an instrument. Gain is a constant value which is multiplied with an instrument's output signal to increase or decrease the level of that output.

GAIN_MODES INTEGER
The gain_modes element provides the number of gain states of a particular instrument or section of an instrument.

GAIN_NUMBER [PDS-GEO-VL] INTEGER
The GAIN_NUMBER indicates the gain value used in the analog to digital conversion. The gain value is a multiplicative factor used in the analog to digital conversion.

GENERAL_CATALOG_FLAG CHARACTER(1)
The general_catalog_flag element is a yes-or-no flag indicating whether a data set collection or data set exists in a PDS catalog. (invfastrack, invphotoprod)

GENERAL_CLASSIFICATION_TYPE [PDS-CN] CHARACTER(20)
The general_classification_type data element serves to allow data systems to group data objects or elements according to common characteristics. Its purpose is akin to subject access in library systems, because it allows the user to find a data element according to its membership in a larger category. In this document the general_classification_type is an indexing mechanism for data element names, to allow them to be published in a classified list entitled 'DATA ELEMENT CLASSIFIED LISTINGS'. See also: system_classification_id.

GENERAL_DATA_TYPE CHARACTER(30)

The general_data_type element classifies a data element according to a non-implementation-specific list of data types published in the ISO standards documentation. Examples: CHARACTER, INTEGER. Please refer to the section entitled 'DATA TYPE STANDARDS' in this document. See also: data_type.

Note: In the PDS, data type standards for more system-specific applications are described in the Data Preparation Workbook.

HARDWARE_MODEL_ID CHARACTER(20)
The hardware_model_id element identifies the computer hardware on which a data product was produced. (E.g. VAX 11/780, MACINTOSH II).

HEADER_TYPE CHARACTER(12)
The header_type element identifies a specific type of header data structure. For example: FITS, VICAR.

Note: In the PDS, header_type is used to indicate non-PDS headers.

HELP_ID [PDS-CN] INTEGER
The help_id element identifies a PDS topic for which help text is available.

HELP_NAME [PDS-CN] CHARACTER(30)
The help_name element provides the key to help text used in the Inspect Data function.

HELP_TEXT [PDS-CN] CHARACTER
The help_text element provides the ascii help text used for online help in the Inspect Data function.

HIGHEST_DETECTABLE_OPACITY [PDS-RINGS] REAL
The highest_detectable_opacity element indicates the sensitivity of a ring occultation data set to nearly opaque rings. It specifies the normal ring opacity corresponding to a signal one standard deviation above the background (complete obstructed) signal. The value is computed assuming the data has been re-processed to the radial resolution specified by the reference_radial_resolution element.

HORIZONTAL_FOV REAL(0, 360) <deg>
The horizontal_field_of_view element provides the angular measure of the horizontal field of view of an instrument.

HORIZONTAL_FRAMELET_OFFSET REAL(>=1)
The horizontal_framelet_offset provides the row number of a framelet within a tiled image. In the PDS, offsets are counted from one.

HORIZONTAL_PIXEL_FOV REAL(0, 360) <deg>
The horizontal_pixel_field_of_view element provides the angular measure of the horizontal field of view of a single pixel.

HORIZONTAL_PIXEL_SCALE REAL(0, 1E9) <m/pixel>
The HORIZONTAL_PIXEL_SCALE element indicates the horizontal picture scale.

HOST_ID [JPL-AMMOS-SPECIFIC] CHARACTER
The host_id element provides the name or identification of the particular computer on which the product was generated.

HUFFMAN_TABLE_TYPE [PDS-IMG-GLL] CHARACTER(10)
The The huffman_table_type element indicates the type of Huffman table used in compression. For Galileo the valid values are: SKEWED, UNIFORM, N/A.

ICT_DESPIKE_THRESHOLD [PDS-IMG-GLL] INTEGER(1, 255)
The ict_despike_threshold (integer cosine transform despike threshold) element indicates the threshold value at which despiking occurs. Despiking is used as a pre-processing step to the Integer Cosine Transform in order to minimize the effects of radiation-induced noise on compression efficiency. This element is Galileo Solid State Imaging-specific.

ICT_QUANTIZATION_STEP_SIZE [PDS-IMG-GLL] INTEGER(1, 255)
The ict_quantization_step_size (integer cosine transform quantization step size) element provides the integer value by which the ICT transform is divided. The greater the step-size/compression, the greater the data loss.

ICT_ZIGZAG_PATTERN [PDS-IMG-GLL] CHARACTER(10)
The ict_zigzag_pattern element provides the name of the Integer Cosine Transform zigzag pattern used to rearrange the transform. For Galileo, the valid values are: ZIGZAG or ALT.

IMAGE_ID CHARACTER(30)
The image_id element is used to identify an image and typically consists of a sequence of characters representing 1) a routinely occurring measure, such as revolution number, 2) a letter identifying the spacecraft, target, or camera, and 3) a representation of a count within the measure, such as picture number within a given revolution.
Example:
Mariner 9 - Levanthal Identifier - (orbit, camera, pic #,
total # of pics in orbit)
Viking Orbiter - (orbit #, sc, and pic #(FSC/16)),
Viking Lander - (sc, camera, mars doy, diode (filter),
pic # for that day),
Voyager - (pic # for encounter, FDS for cruise)

IMAGE_KEY_ID CHARACTER(30)
The image_key_id element provides a shorthand identifier for an image which is unique for a given spacecraft. The image_key_id and spacecraft_id together provide a unique identifier for any image. The contents of image_key_id may be any common identifier of an image, but it is suggested that one of the following be used: 1) image_id (pic_no), 2) image_number (FSC), 3) spacecraft_clock_count (FDS).

Note: Guaranteeing uniqueness may require modification of the selected common identifier and is the responsibility of the data supplier. For example, in the case where an image was retransmitted, an alphabetic character could be appended. When unique identifiers are not supplied, PDS will assign a simple numeric identifier as the image_key_id. This identifier will range from 1 to the number of images associated with the specified spacecraft.

IMAGE_NUMBER CHARACTER(30)
The image_number element is a value obtained from the spacecraft_clock_start_count. The image number is another commonly used identifier for an image.
Example:
Viking - Frame Start Count (FSC)
Voyager - Flight Data Subsystem (FDS) clock count
(integer 7 digit)

IMAGE_OBSERVATION_TYPE CHARACTER(15)
The image_observation_type element identifies the type or purpose of an observation that may be associated with an image. Image observation types include limb, black sky, spacecraft calibration, or other

image attribute that may be used for identification. Observation types should not include features, regions, or standard target names.

IMAGE_TIME TIME
The image_time element provides the spacecraft event time at the time of frame acquisition. This should be represented in UTC system format.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

IMPORTANT_INSTRUMENT_PARMS INTEGER
The important_instrument_parameters element provides the number of instrument parameters which are required to derive a particular data set parameter. This value depends partly on the particular characteristics of the instruments providing the instrument parameters. For example, in the case of Voyager instruments, the data set parameter PLASMA BETA may be derived from the following set of instrument parameters: ELECTRON RATE, ION RATE, MAGNETIC FIELD COMPONENT. In that case, the value of the important_instrument_parameters element is 3.

INCIDENCE_ANGLE REAL(0, 180) <deg>
The incidence_angle element provides a measure of the lighting condition at the intercept point. Incidence angle is the angle between the local vertical at the intercept point (surface) and a vector from the intercept point to the sun. The incidence_angle varies from 0 degrees when the intercept point coincides with the sub_solar point to 90 degrees when the intercept point is at the terminator (i.e., in the shadowed or dark portion of the target body). Thus, higher values of incidence_angle indicate the existence of a greater number of surface shadows.

Note: In PDS labels for Magellan's altimetry and radiometry products, incidence_angle is defined as the value of the angle between the local vertical and the spacecraft direction, measured at the center of the radiometer footprint at rad_spacecraft_epoch_time.

INDEX_TYPE [PDS-CN] CHARACTER(15)
The INDEX_TYPE element identifies the type of an index table that describes an archive volume. It is used in the label for a volume index table. In general, the two allowable index types are SINGLE, meaning that every row in the index table describes a file on the current volume; CUMULATIVE, meaning that every row in the index table describes a file residing on the current volume or a previous volume in the volume set.

INDEXED_FILE_NAME [PDS-CN] CHARACTER(120)
The INDEXED_FILE_NAME element is a string (or set of strings) identifying the files included in an index table on an archive volume. The element is used in the label for a volume index table. The value may include a directory path. The usage of INDEXED_FILE_NAME may vary based on the value of the INDEX_TYPE element in the index label.

Note: For Mars Observer, some volume indicies have INDEX_TYPE = SINGLE, and the value of INDEXED_FILE_NAME is a set of wildcard strings matching the product file names on the volume being indexed. Other indicies may have INDEX_TYPE = CUMULATIVE, and the value of INDEXED_FILE_NAME is a list of file names identifying the SINGLE index files which were appended together to create the CUMULATIVE index.

INST_CMPRS_BLK_SIZE INTEGER
The inst_cmprs_blk_size element provides the dimensions of a pixel block for on-board compression. This value may be a two dimensional array, where the first value is the line dimension of the block, and the second value is the sample dimension of the block. Otherwise, the block is assumed to be square.

INST_CMPRS_BLOCKS INTEGER
The inst_cmprs_blocks element provides the number of blocks used to spatially segment a data product prior to compression.

INST_CMPRS_MODE INTEGER
The inst_cmprs_mode element identifies the method used for on-board compression of data.

Note: The inst_cmprs_name element provides the full name of an inst_cmprs_mode.

INST_CMPRS_NAME CHARACTER
The inst_cmprs_name element identifies the type of on-board compression used for data storage and transmission.

Note: The inst_cmprs_mode element provides an abbreviated identifier for the inst_cmprs_name.

INST_CMPRS_PARAM INTEGER
The inst_cmprs_param element is a JPEG specific variable which specifies on-board compression determination by image quality or by compression factor, based on a selected on-board compression mode.

INST_CMPRS_QUALITY INTEGER
The inst_cmprs_quality element is a JPEG specific variable which identifies the resultant or targeted image quality index for on-board data compression.

INST_CMPRS_QUANTZ_TBL_ID CHARACTER(15)
The inst_cmprs_quantz_tbl_id element identifies the reference table used for quantization in the frequency domain for on-board transform compression. This name or code should be specific enough to allow the user of the data to have sufficient information to reference the quantization table used to compress the data.

INST_CMPRS_QUANTZ_TYPE CHARACTER
The inst_cmprs_quantz_type element indicates the method of quantization used for the output of transform coders.

INST_CMPRS_RATE REAL
The inst_cmprs_rate element provides the average number of bits needed to represent a pixel for an on-board compressed image.

INST_CMPRS_RATIO REAL
The inst_cmprs_ratio element provides the ratio of the size, in bytes, of the original uncompressed data file to its compressed form.

INST_CMPRS_SYNC_BLKS INTEGER(1, 0)
The inst_cmprs_sync_blks element is a RICE specific variable providing the number of compressed blocks between synchronization counters.

INSTITUTION_NAME CHARACTER(60)
The institution_name element identifies a university, research center, or NASA center.

INSTRUMENT_AZIMUTH_METHOD CHARACTER(20)
The instrument_azimuth_method identifies the method used to calculate the instrument azimuth from the azimuth motor clicks.

INSTRUMENT_CALIBRATION_DESC CHARACTER

The instrument_calibration_desc element explains the method of calibrating an instrument and identifies reference documents which explain in detail the calibration of the instrument. As an example, this element would explain whether the calibration was time-independent (i.e., a single algorithm was used) or time-dependent and whether the calibration was performed in-flight or in a laboratory.

INSTRUMENT_DEPLOYMENT_STATE CHARACTER(20)
The instrument_deployment_state element indicates the deployment state (i.e. physical configuration) of an instrument at the time of data acquisition.

INSTRUMENT_DESC CHARACTER
The instrument_desc element describes a given instrument.

INSTRUMENT_ELEVATION_METHOD CHARACTER(20)
The instrument_elevation_method element identifies the method used to calculate the instrument elevation from the elevation motor clicks.

INSTRUMENT_FORMATTED_DESC [PDS-CN] CHARACTER
The instrument_formatted_desc element contains the formatted instrument descriptions. These descriptions represent the information collected for the PDS Version 1.0 instrument model and were created by extracting instrument information from several tables in the catalog data base. These descriptions represent an archive since the tables have been eliminated as part of the catalog streamlining task.

INSTRUMENT_HEIGHT REAL <m>
The instrument_height element provides the physical height of an instrument.

INSTRUMENT_HOST_DESC CHARACTER
The instrument_host_desc data element describes the spacecraft or earthbase from which particular instrument measurements were taken. For spacecraft, this description addresses the complement of instruments carried, the on-board communications and data processing equipment, the method of stabilization, the source of power and the capabilities or limitations of the spacecraft design which are related to data-taking activities. The description may be a synopsis of available mission documentation.

INSTRUMENT_HOST_ID CHARACTER(6)
The instrument_host_id element provides a unique identifier for the host where an instrument is located. This host can be either a spacecraft or an earth base (e.g., and observatory or laboratory on the earth). Thus, the instrument_host_id element can contain values which are either spacecraft_id values or earth_base_id values.

INSTRUMENT_HOST_NAME CHARACTER(60)
The instrument_host_name element provides the full name of the host on which an instrument is based. This host can be either a spacecraft or an earth base. Thus, the instrument_host_name element can contain values which are either spacecraft_name values or earth_base_name values.

INSTRUMENT_HOST_TYPE CHARACTER(20)
The instrument_host_type element provides the type of host on which an instrument is based. For example, if the instrument is located on a spacecraft, the instrument_host_type element would have the value SPACECRAFT.

INSTRUMENT_ID CHARACTER(12)
The instrument_id element provides an abbreviated name or acronym which identifies an instrument.

Note: The instrument_id is not a unique identifier for a given instrument. Note also that the associated instrument_name element provides the full name of the instrument. Example values: IRTM (for Viking Infrared Thermal Mapper), PWS (for plasma wave spectrometer).

INSTRUMENT_LENGTH REAL <m>
The instrument_length element provides the physical length of an instrument.

INSTRUMENT_MANUFACTURER_NAME CHARACTER(60)
The instrument_manufacturer_name element identifies the manufacturer of an instrument.

INSTRUMENT_MASS REAL <kg>
The instrument_mass element provides the mass of an instrument.

INSTRUMENT_MODE_DESC CHARACTER
The instrument_mode_desc element describes the instrument mode which is identified by the instrument_mode_id element.

INSTRUMENT_MODE_ID CHARACTER(20)
The instrument_mode_id element provides an instrument-dependent designation of operating mode. This may be simply a number, letter or code, or a word such as 'normal', 'full resolution', 'near encounter', or 'fixed grating'.

INSTRUMENT_MOUNTING_DESC CHARACTER
The instrument_mounting_desc element describes the mounting of an instrument (on a platform on spacecraft or a mounting at a lab) and the orientation of the instrument with respect to the platform.

INSTRUMENT_NAME CHARACTER(60)
The instrument_name element provides the full name of an instrument.

Note: that the associated instrument_id element provides an abbreviated name or acronym for the instrument. Example values: FLUXGATE MAGNETOMETER, NEAR_INFRARED MAPPING SPECTROMETER.

INSTRUMENT_PARAMETER_NAME CHARACTER(40)
The instrument_parameter_name element provides the name of the data parameter which was measured by an instrument. As an example, the instrument_parameter_name value could be ELECTRIC FIELD COMPONENT. It is intended that the instrument_parameter_name element provide the name of the rawest measured value which has some physical significance. Thus, for example, while the detector of an instrument may actually record voltage differences, the electric field component which is proportional to those differences is considered to be the instrument parameter.

Note: that the associated data_set_or_inst_parm_desc element describes the measured parameter.

INSTRUMENT_PARAMETER_RANGES INTEGER
The instrument_parameter_ranges element provides the number of instrument parameter ranges for a given instrument.

INSTRUMENT_PARAMETER_UNIT CHARACTER(60)
The instrument_parameter_unit element specifies the unit of measure of associated instrument parameters.

INSTRUMENT_POWER_CONSUMPTION REAL <W>
The instrument_power_consumption element provides power consumption information for an instrument.

Note: instrument_power_consumption may vary with different modes of instrument operation.

INSTRUMENT_SERIAL_NUMBER CHARACTER(20)
The instrument serial number element provides the manufacturer's serial number assigned to an instrument. This number may be used to uniquely identify a particular instrument for tracing its components or determining its calibration history, for example.

INSTRUMENT_TEMPERATURE REAL(>=-273) <deg>
The instrument_temperature element provides the temperature, in degrees Celcius, of an instrument or some part of an instrument.

INSTRUMENT_TEMPERATURE_COUNT INTEGER
The instrument_temperature_count element provides the instrument temperature in raw counts or DN values.

INSTRUMENT_TYPE CHARACTER(30)
The instrument_type element identifies the type of an instrument. Example values: POLARIMETER, RADIOMETER, REFLECTANCE SPECTROMETER, VIDICON CAMERA.

INSTRUMENT_WIDTH REAL <m>
The instrument_width element provides the physical width of an instrument.

INTENSITY_TRANSFER_FUNCTION_ID [PDS-SBN] CHARACTER(10)
The INTENSITY_TRANSFER_FUNCTION_ID element designates the type of intensity transfer function (ITF) used to map raw data to intensity values for an image.

Note: For the International Ultraviolet Explorer (IUE) spacecraft, the ITF maps values to flux numbers on a pixel by pixel basis across the image. The ITF for each camera is defined in geometrically correct space, and is generated from a series of geometrically corrected mercury flood-lamp flat-field images at graded exposure levels.

INTERCEPT_POINT_LATITUDE [PDS-IMG-GLL] REAL(-90, 90) <deg>
The intercept_point_latitude element provides the latitude of a point on the body surface. This intercept point can describe the point at which lighting geometry is calculated or the point at which the target body resolution is calculated.

INTERCEPT_POINT_LINE [PDS-IMG-GLL] REAL(>=1) <pixel>
The intercept_point_line element provides the instrument line location of a point on the body surface. This intercept point can describe the point at which lighting geometry is calculated or the point at which the target body resolution is calculated.

INTERCEPT_POINT_LINE_SAMPLE [PDS-IMG-GLL] REAL(>=1) <pixel>
The intercept_point_line_sample element provides the instrument sample location of a point on the body surface. This intercept point can describe the point at which lighting geometry is calculated or the point at which the target body resolution is calculated.

INTERCEPT_POINT_LONGITUDE [PDS-IMG-GLL] REAL(0, 360) <deg>
The intercept_point_longitude element provides the longitude of a point on the body surface. This intercept point can describe the point at which lighting geometry is calculated or the point at which the target body resolution is calculated. Value is in west longitude for Galileo

INTERCHANGE_FORMAT CHARACTER(6)

The interchange_format element represents the manner in which data items are stored. Example values: BINARY, ASCII.

INVALID_CONSTANT CONTEXT DEPENDENT
The invalid_constant element supplies the value used when the received data were out of the legitimate range of values.

Note: For PDS and Mars Observer applications -- because of the unconventional data type of this data element, the element should appear in labels only within an explicit object, i.e. anywhere between an 'OBJECT =' and an 'END_OBJECT'.

INVENTORY_SPECIAL_ORDER_NOTE [PDS-CN] CHARACTER
The inventory_special_order_note element is a text field that provides information on special orders that can be placed for a given data set collection or data set.

INVERTED_CLOCK_STATE_FLAG CHARACTER(12)
The inverted_clock_state element indicates whether a clock signal was inverted.

IRAS_CLOCK_ANGLE [PDS-SBN] REAL <deg>
The satellite viewing angle projected onto the plane perpedicular to the Sun- line, measured from ecliptic North, clockwise as viewed from the Sun. This is the same direction as the IRAS orbital motion.

IRAS_CLOCK_ANGLE_RANGE [PDS-SBN] REAL <deg>
The change in the clock angle during the elapsed time of the scan.

IRAS_CLOCK_ANGLE_RATE [PDS-SBN] REAL <deg>
The average time rate of change of the clock angle during a scan.

IRAS_CLOCK_ANGLE_RATE_SIGMA [PDS-SBN] REAL <deg>
The standard deviation of the scan rate determined from variations in values from the gyro.

IRAS_HCON [PDS-SBN] INTEGER
HCON is hours-confirmation. In order to maximize the reliability of the IRAS observations, the satellite scanning strategy was designed so that a piece of the sky would be re-observed on timescales of hours (generally one orbit of 103 minutes). Three hours-confirmed surveys, designated HCONs 1, 2 and 3 respectivley, of the sky were made by IRAS over the course of its mission. HCON 1 and 2's observations were interleaved on timescales of weeks. HCON 3 consists of all scans after SOP 426, inclusive.(See Beichman et al. (1989) for further information.)

ITEM_BITS INTEGER
The item_bits element indicates the number of bits allocated for a particular bit data item.

Note: In the PDS, the item_bits element is used when the items element specifies multiple occurrences of an implied item within a BIT_COLUMN object definition.

ITEM_BYTES INTEGER
The item_bytes data element represents the size in bytes of an item within a data object such as a column.

Note: In the PDS, the term item_bytes is distinguished from the term bytes because both elements may appear in a single data object definition (e.g., a label) and refer to different parts of the data object. In an object such as a column, bytes represent the size of the column. Should the column be split into equal items, item_bytes would represent the size of each item. For fuller explanation of the use of these data elements, please refer to the PDS Data Preparation Workbook.

ITEM_OFFSET INTEGER
The item_offset data element indicates the number of bytes from the start of one item to the start of the next item in any ASCII column or array.

ITEMS INTEGER(1, 0)
The items element defines the number of multiple, identical occurrences of an single object, such as a column. See also: repetitions.

Note: In the PDS, the data element ITEMS is used for multiple occurrences of a single object, such as a column. REPETITIONS are used for multiple occurrences of a repeating group of objects, such as a container. For a fuller description of the use of these data elements, please refer to the Standards Reference.

JOURNAL_NAME CHARACTER(60)
The journal_name element identifies, where applicable, the published work (e.g., journal or report) which contains a reference document.

JPL_PRESS_RELEASE_ID [JPL-AMMOS-SPECIFIC] CHARACTER
This element describes the JPL press release id for a data product associated with the given data product.

KERNEL_TYPE [SPICE] CHARACTER(18)
The kernel_type data element identifies the specific kernel of ancillary data produced within the SPICE system.

KEYWORD_DEFAULT_VALUE [PDS-CN] CHARACTER(20)
The keyword_default_value element is used to initialize a template keyword value to a default value during construction of templates. When filling out templates, the data supplier provides a value for all keywords except those which have a default value.

KEYWORD_VALUE_HELP_TEXT [PDS-CN] CHARACTER(30)
The keyword_value_help_text element provides text which describes the information required from the data supplier to assign a value to a template keyword.

LABEL_RECORDS INTEGER
The label_records element indicates the number of physical file records that contain only label information. The number of data records in a file is determined by subtracting the value of label_records from the value of file_records.

Note: In the PDS, the use of label_records along with other file-related data elements is fully described in the Standards Reference.

LABEL_REVISION_NOTE CHARACTER
The LABEL_REVISION_NOTE element is a free-form unlimited length character string providing information regarding the revision status and authorship of a PDS label. This should include the latest revision date and author of the current version, but may include a more complete history. This element is required in all Catalog labels and should be the second element in the label. Example: '1999-06-07 SBN:raugh Auto-generated, 1999-07-08 CN:JSH Updated;'

LANDER_SURFACE_QUATERNION [PDS_IMG] REAL
The lander_surface_quaternion element provides an array of four values that define the relationship between the lander coordinate frame and the local level coordinate frame. These values are commonly listed in the order 'cosine, x, y, z' or in the order 'x, y, z, cosine.'

LAST_ALT_FOOTPRINT_TDB_TIME [PDS-GEO-MGN] REAL
The last_alt_footprint_tdb_time element provides the value of the spacecraft ephemeris time that represents the last altimeter footprint of this orbit. It is equal to the altimetry_footprint_tdb_time value in the last record of this orbit's altimetry data file.

LAST_IMAGE_TIME [MARS-OBSERVER] TIME
The last_image_time element indicates the start_time (or image_time) that appears in the label of the last image on an archive medium.

LAST_NAME CHARACTER(30)
The last_name element provides the last name (surname) of an individual.

LAST_PRODUCT_ID [MARS-OBSERVER] CHARACTER(40)
The last_product_id data element indicates the product_id that appears in the label of the last data product on an archive medium.

LAST_RAD_FOOTPRINT_TDB_TIME [PDS-GEO-MGN] REAL
The last_rad_footprint_tdb_time element provides the value of the spacecraft ephemeris time of the last radiometer measurement of this orbit. It is equal to the rad_spacecraft_epoch_tdb_time value in the last record of this orbit's radiometry data file.

LATITUDE REAL(-90, 90) <deg>
For a Planetocentric, body-fixed, rotating coordinate system, latitude is defined as: The angle between the equatorial plane and a vector connecting the point of interest and the origin of the planetocentric coordinate system. Positive in the hemisphere north of the equator (i.e., hemisphere to the north of the solar system invariant plane) and negative in the southern hemisphere. For a Planetographic, body-fixed, rotating coordinate system, latitude is defined as: The angle between the equatorial plane and a vector through the point of interest that is normal to a biaxial ellipsoid reference surface. Positive in the hemisphere north of the equator (i.e., hemisphere to the north of the solar system invariant plane) and negative in the southern hemisphere.

Note: With a non-zero polar flattening, the vector does not intersect the coordinate system origin, except at the equator and the poles. See coordinate_system_name, coordinate_system_type and the PDS Cartographic Standards in the PDS Standards Reference V3.2 for further details.

LAUNCH_DATE DATE
The launch_date element identifies the date of launch of a spacecraft or a spacecraft_carrying vehicle.

Formation rule: YYYY-MM-DD

LENS_TEMPERATURE REAL <K>
The lens_temperature element provides the temperature of the lens in degrees kelvin at the time the observation was made.

LIGHT_FLOOD_STATE_FLAG CHARACTER(3)
The light_flood_state_flag element indicates the mode (on or off) of light flooding for an instrument.

LIGHT_SOURCE_DISTANCE REAL <km>
The light_source_distance element provides the distance from the target body center and secondary light source center.

LIGHT_SOURCE_INCIDENCE_ANGLE REAL(0, 180) <deg>

The light_source_incidence_angle element provides a measure of the lighting condition at the intercept point. Incidence angle is the angle between the local vertical at intercept (surface) point and a vector from the intercept point to the light source.

LIGHT_SOURCE_NAME CHARACTER(30)
The light_source_name element provides the name of the light source used in observations when it is not the Sun.

Note: For the Clementine Mission, the light source is the Earth when making lunar observations, and the Moon when making Earth observations.

LIGHT_SOURCE_PHASE_ANGLE REAL(0, 180) <deg>
The light_source_phase_angle element provides a measure of the relationship between the spacecraft viewing position and the light source. Light_source_phase_angle is defined as the angle between a vector from the intercept point to the light source and a vector from the intercept point to the spacecraft.

LIMB_ANGLE REAL(-90, 90) <deg>
The limb_angle element provides the value of the angle between the center of an instrument's field of view and the nearest point on the lit limb of the target body. Limb_angle values are positive off_planet and negative on_planet.

LINE_DISPLAY_DIRECTION CHARACTER(6)
The line_display_direction element is the preferred orientation of lines within an image for viewing on a display device. The default value is down, meaning lines are viewed top to bottom on the display. See also SAMPLE_DISPLAY_DIRECTION.

Note: The image rotation elements such as TWIST_ANGLE, CELESTIAL_NORTH_CLOCK_ANGLE, and BODY_POLE_CLOCK_ANGLE are all defined under the assumption that the image is displayed in its preferred orientation.

LINE_EXPOSURE_DURATION [MARS-OBSERVER] REAL <ms>
The line_exposure_duration data element indicates the time elapsed during the aquisition of one image line of data.

LINE_FIRST_PIXEL INTEGER
The line_first_pixel element provides the line index for the first pixel that was physically recorded at the beginning of the image array.

Note: In the PDS, for a fuller explanation on the use of this data element in the Image Map Projection Object, please refer to the PDS Standards Reference.

LINE_LAST_PIXEL INTEGER
The line_last_pixel element provides the line index for the last pixel that was physically recorded at the end of the image array.

Note: In the PDS, for a fuller explanation on the use of this data element in the Image Map Projection Object, please refer to the PDS Standards Reference.

LINE_PREFIX_BYTES INTEGER
The line_prefix_bytes element indicates the number of non-image bytes at the beginning of each line. The value must represent an integral number of bytes.

LINE_PREFIX_STRUCTURE CHARACTER(120)

The line_prefix_structure element indicates a pointer to a file containing a definition of the structure of the line prefix bytes.

Note: In the PDS this data element is obsolete. It is kept in the data dictionary for historical purposes to allow data validation software to function. According to current standards, the structures of prefix and suffix data are illustrated through the use of the table object.

LINE_PROJECTION_OFFSET REAL <pixel>
The line_projection_offset element provides the line offset value of the map projection origin position from the line and sample 1,1 (line and sample 1,1 is considered the upper left corner of the digital array).

Note: that the positive direction is to the right and down.

LINE_SAMPLES INTEGER
The line_samples element indicates the total number of data instances along the horizontal axis of an image.

LINE_SUFFIX_BYTES INTEGER
The line_suffix_bytes element indicates the number of non-image bytes at the end of each line. This value must be an integral number of bytes.

LINE_SUFFIX_STRUCTURE CHARACTER(120)
The line_suffix_structure element indicates a pointer to a file containing a definition of the structure of the line suffix bytes.

Note: In the PDS this data element is obsolete. It is kept in the data dictionary for historical purposes to allow data validation software to function. According to current standards, the structures of prefix and suffix data are illustrated through the use of the table object.

LINES INTEGER
The lines element indicates the total number of data instances along the vertical axis of an image.

Note: In PDS label convention, the number of lines is stored in a 32-bit integer field. The minimum value of 0 indicates no data received.

LOCAL_HOUR_ANGLE REAL(0, 360) <deg>
The local_hour_angle element provides a measure of the instantaneous apparent sun position at the subspacecraft point. The local_hour_angle is the angle between the extension of the vector from the Sun to the target body and the vector projection on the target body's ecliptic plane of a vector from the target body's planetocentric center to the observer (usually, the spacecraft). This angle is measured in a counterclockwise direction when viewed from north of the ecliptic plane. It may be converted from an angle in degrees to a local time, using the conversion of 15 degrees per hour, for those planets for which the rotational direction corresponds with the direction of measure of the angle.

LOCAL_TIME REAL(0, 24) <local day/24>
The local_time element provides the local time of day at the center of the field of view of an instrument, measured in local hours from midnight. A local hour is defined as one twenty_fourth of a local solar day.

LOGICAL_VOLUME_PATH_NAME CHARACTER(72)
The logical_volume_path_name element is a character string or set of character strings giving the root directory path for each logical volume. If missing, the volume begins in the root directory as usual.

LOGICAL_VOLUMES INTEGER(1, 0)

The logical_volumes element is an integer indicating the number of logical volumes in the given volume. If it is missing, it has a default value of 1.

LONGITUDE REAL(-180, 360)<deg>
For a Planetocentric, body-fixed, rotating coordinate system, longitude is defined as: The angle increasing eastward between the prime meridian and the vector from the coordinate system origin to the point of interest, projected into the equatorial plane. This is a right-handed coordinate system. For a Planetographic, body-fixed, rotating coordinate system, longitude is defined as: The angle between the prime meridian and the vector from the coordinate system origin to the point of interest, projected into the equatorial plane. Planetographic longitudes are defined to increase with time for a distant observer. Thus, they increase to the west for prograde rotators, and to the east for retrograde rotators. For the Earth, Moon and Sun, PDS also supports the traditional use of the range (-180,180)

Note: Longitudes are measured in the direction of rotation for all planetary rings. See ring_longitude, minimum_ring_longitude, maximum_ ring_longitude, b1950_ring_longitude, minimum_b1950_ring_longitude and maximum_b1950_ring_longitude.

LOWEST_DETECTABLE_OPACITY [PDS-RINGS] REAL
The lowest_detectable_opacity element indicates the sensitivity of a ring occultation data set to faint rings. It specifies the normal ring opacity corresponding to a signal one standard deviation below the unobstructed signal. The value is computed assuming the data has been re-processed to the radial resolution specified by the reference_radial_resolution element.

MAGNETIC_MOMENT REAL <J/T>
The magnetic_moment element provides the value of the magnetic moment of a target body.

MAILING_ADDRESS_LINE CHARACTER
The mailing_address_line element provides one line of the mailing address of an individual or institution. The ordering of the mailing address lines is provided by the associated tuple_sequence_number.

MANDATORY_COLUMN [PDS-CN] CHARACTER(1)
The mandatory_column element denotes whether an attribute may be set to a null value. Example: Y or N

MAP_DESC CHARACTER
The map_desc element describes the contents and processing history of a given map.

MAP_NAME CHARACTER(40)
The map_name element provides the name assigned to a map, and typically corresponds to the name of a prominent feature which appears on the map.

Note: This element is also used within AMMOS as a unique identifier for decommutation maps.

MAP_NUMBER CHARACTER(20)
The map_number element provides a numeric identifier for a given map.

MAP_PROJECTION_DESC CHARACTER
The map_projection_desc element describes the map_projection_type unambiguously. It shall contain the mathematical expressions (it may even contain the source code or pseudo code, with comments) and any assumptions (e.g. the planet is assumed spherical). Additionally it shall describe the planet eccentricity, the treatment of the a_axis_radius, b_axis_radius, and c_axis_radius when the projection was created, and where the map_scale (or map_resolution) is defined.

MAP_PROJECTION_ROTATION REAL(0, 180) <deg>

The map_projection_rotation element provides the clockwise rotation, in degrees, of the line and sample coordinates with respect to the map projection origin (line_projection_offset, line_projection_offset) this parameter is used to indicate where 'up' is in the projection. For example, in a polar stereographic projection does the zero meridian go center to bottom, center to top, center to left, or center to right? The polar projection is defined such that the zero meridian goes center to bottom. However, by rotating the map projection, the zero meridian can go in any direction.

Note: 180 degrees is at the top of the North Pole and 0 degrees is at the top of the South Pole. For example, if 0 degrees is at the top of the North Pole than the map_projection_rotation would be 180 degrees.

MAP_PROJECTION_TYPE CHARACTER(20)
The map_projection_type element identifies the type of projection characteristic of a given map. Example value: ORTHOGRAPHIC.

MAP_RESOLUTION REAL <pix/deg>
The map_resolution element identifies the scale of a given map. Please refer to the definition for map_scale for a more complete definition.

Note: map_resolution and map_scale both define the scale of a map except that they are expressed in different units: map_resolution is in PIXEL/DEGREE and map_scale is in KM/PIXEL.

MAP_SCALE REAL <km/pix>
The map_scale element identifies the scale of a given map. The scale is defined as the ratio of the actual distance between two points on the surface of the target body to the distance between the corresponding points on the map. The map_scale references the scale of a map at a certain reference point or line. Certain map projections vary in scale throughout the map. For example, in a Mercator projection, the map_scale refers to the scale of the map at the equator. For Conic projections, the map_scale refers to the scale at the standard parallels. For an Orthographic point, the map_scale refers to the scale at the center latitude and longitude. The relationship between map_scale and the map_resolution element is that they both define the scale of a given map, except they are expressed in different units: map_scale is in KM/PIXEL and map_resolution is in PIXEL/DEGREE. Also note that one is inversely proportional to the other and those kilometers and degrees can be related given the radius of the planet: 1 degree = (2 * RADIUS * PI) / 360 kilometers.

MAP_SEQUENCE_NUMBER [JPL-AMMOS-SPECIFIC] INTEGER
The map_sequence_number element identifies the sequence number of a particular series of decommutation maps.

MAP_SERIES_ID CHARACTER(20)
The map_series_id element identifies a map series (as specified by the agency which issued the map).

MAP_SHEET_NUMBER INTEGER
The map_sheet_number element provides the sequence number of a map which comprises multiple sheets.

MAP_TYPE CHARACTER(20)
The map_type element identifies the general type of information depicted on a given map. Example values: GEOLOGIC, TOPOGRAPHIC, SHADED_RELIEF.

MAPPING_START_TIME [JPL-AMMOS-SPECIFIC] TIME
The mapping_start_time element is an alias for start_time used exclusively by AMMOS-MGN ephemeris files.

MAPPING_STOP_TIME [JPL-AMMOS-SPECIFIC] TIME

The mapping_stop_time element is an alias for stop_time used exclusively by AMMOS-MGN ephemeris files.

MASS REAL <kg>
The mass element provides the estimated mass of a target body.

MASS_DENSITY REAL <g/cm**3>
The mass_density element provides the bulk density (mass per unit volume) of a target body. Bulk density is defined as the ratio of total mass to total volume.

MAXIMUM CONTEXT DEPENDENT
The maximum element indicates the largest value occurring in a given instance of the data object.

Note: For PDS and Mars Observer applications -- because of the unconventional data type of this data element, the element should appear in labels only within an explicit object, i.e. anywhere between an 'OBJECT =' and an 'END_OBJECT'.

MAXIMUM_B1950_RING_LONGITUDE [PDS-RINGS] REAL(0, 360)<deg>
The maximum_B1950_ring_longitude element specifies the maximum inertial longitude within a ring area relative to the B1950 prime meridian, rather than to the J2000 prime meridian. The prime meridian is the ascending node of the planet's invariable plane on the Earth's mean equator of B1950. Longitudes are measured in the direction of orbital motion along the planet's invariable plane to the ring's ascending node, and thence along the ring plane.

Note: For areas that cross the prime meridian, the maximum ring longitude will have a value less than the minimum ring longitude.

MAXIMUM_BRIGHTNESS_TEMPERATURE REAL(>=2.4) <K>
The maximum_brightness_temperature element provides the maximum brightness temperature value measured within a given set of data or a given sequence. Brightness temperature is the temperature of aideal blackbody whose radiant energy in a particular wavelength range is the same as that of an observed object or feature.

MAXIMUM_CHANNEL_ID CHARACTER(4)
The maximum_channel_id element identifies the highest channel from which data were obtained. For example, the Voyager PLS instrument reported measurements in a number of energy/charge channels. But not all channel values were reported to Earth; the maximum_channel_id element indicated the highest energy reported in the telemetry stream.

MAXIMUM_COLUMN_VALUE [PDS-CN] REAL
The maximum_column_value element provides the maximum real value currently allowed by the PDS catalog for a given table element. This value is updated when new limits are discovered.

Note: These elements are unique to a table and may have different values depending on which table the element is associated with.

MAXIMUM_EMISSION_ANGLE REAL(0, 180) <deg>
The maximum_emission_angle element provides the maximum emission angle value. See emission_angle.

MAXIMUM_INCIDENCE_ANGLE REAL(0, 180) <deg>
The maximum_incidence_angle element provides the maximum incidence angle value. See incidence_angle.

MAXIMUM_INSTRUMENT_EXPOSR_DUR REAL <ms>
The maximum_instrument_exposure_duration element provides the maximum possible exposure time for the instrument mode identified by the instrument_mode_id element. See instrument_exposure_duration.

MAXIMUM_INSTRUMENT_PARAMETER REAL
The maximum_instrument_parameter element provides an instrument's maximum usefully detectable signal level for a given instrument parameter. This value indicates the physical value corresponding to the maximum output of an instrument by the instrument_parameter_name element.

MAXIMUM_LATITUDE REAL(-90, 90) <deg>
The maximum_latitude element specifies the northernmost latitude of a spatial area, such as a map, mosaic, bin, feature, or region. See latitude.

MAXIMUM_LENGTH [PDS-CN] INTEGER(1, 0)
The maximum_length element supplies the maximum number of units associated with the representation of a data element.

MAXIMUM_LIMB_ANGLE REAL(-90, 90) <deg>
The maximum_limb_angle element provides the maximum value of the limb angle within a given set of data. See limb_angle.

MAXIMUM_LOCAL_TIME REAL(0, 24) <local day/24>
The maximum_local_time element provides the maximum local time of day on the target body, measured in hours from local midnight.

MAXIMUM_LONGITUDE REAL(0, 360) <deg>
The maximum_longitude element specifies the westernmost (left_most) longitude of a spatial area, such as a map, mosaic, bin, feature, or region. See longitude.

Note: The maximum longitude data element is obsolete and should no longer be used. The assumed coordinate system was planetographic for prograde rotators (PDS Cartographic Standards V3.0). See coordinate_ system_type, easternmost_longitude and westernmost_longitude.

MAXIMUM_PARAMETER REAL
The maximum_parameter element specifies the maximum allowable value for a parameter input to a given data processing program. The parameter constrained by this value is identified by the parameter_name element.

MAXIMUM_PHASE_ANGLE REAL(0, 180) <deg>
The maximum_phase_angle element provides the maximum phase angle value. See phase_angle.

MAXIMUM_RADIAL_RESOLUTION [PDS-RINGS] REAL <km>
The maximum_radial_resolution element indicates the maximum (coarsest) radial distance over which changes in ring properties can be detected within a data product.

MAXIMUM_RADIAL_SAMPLING_INTERV [PDS-RINGS] REAL <km>
The maximum_radial_sampling_interval element indicates the maximum radial spacing between consecutive points in a ring profile. In practice, this may be somewhat smaller than the maximum_radres element because the profile may be over-sampled.

MAXIMUM_RING_LONGITUDE [PDS-RINGS] REAL(0, 360) <deg>

The maximum_ring_longitude element specifies the maximum inertial longitude of a ring area relative to the prime meridian. In planetary ring systems, the prime meridian is the ascending node of the planet's invariable plane on the Earth's mean equator of J2000. Longitudes are measured in the direction of orbital motion along the planet's invariable plane to the ring's ascending node, and thence along the ring plane.

Note: For areas that cross the prime meridian, the maximum ring longitude will have a value less than the minimum ring longitude.

Note: The invariable plane of a planet is equivalent to its equatorial plane for every ringed planet except Neptune.

MAXIMUM_RING_RADIUS [PDS-RINGS] REAL <km>
The maximum_ring_radius element indicates the maximum (outermost) radial location of an area within a planetary ring system. Radii are measured from the center of the planet along the nominal ring plane.

MAXIMUM_SAMPLING_PARAMETER REAL
The maximum_sampling_parameter element identifies the maximum value at which a given data item was sampled. For example, a spectrum that was measured in the 0.4 to 3.5 micrometer spectral region would have a maximum_sampling_parameter value of 3.5. The sampling parameter constrained by this value is identified by the sampling_parameter_name element.

Note: The unit of measure for the sampling parameter is provided by the unit element.

MAXIMUM_SLANT_DISTANCE REAL <km>
The maximum_slant_distance element provides the maximum slant distance value. See slant_distance.

MAXIMUM_SOLAR_BAND_ALBEDO REAL(0, 1)
The maximum_solar_band_albedo element provides the maximum solar band albedo value measured within a given set of data or a given sequence.

MAXIMUM_SPECTRAL_CONTRAST REAL <K>
The maximum_spectral_contrast element provides the maximum value of spectral contrast within a given set of data. See spectral_contrast_range.

MAXIMUM_SURFACE_PRESSURE REAL <bar>
The maximum_surface_pressure element provides the maximum surface pressure value for the atmosphere of a given body.

MAXIMUM_SURFACE_TEMPERATURE REAL(>=2.4) <K>
The maximum_surface_temperature element provides the maximum equatorial surface temperature value for a given body during its year.

MAXIMUM_WAVELENGTH REAL <micron>
The maximum_wavelength element identifies the maximum wavelength at which an observation can be made or was made. For instruments, this may depend on the instrument detector or filter characteristics. For data products, this is the effective upper limit on the wavelength detected.

MCP_GAIN_MODE_ID CHARACTER(20)
The MCP_gain_mode_id element identifies the MCP (Micro Channel Plate) gain state of an instrument.

MEAN REAL
The mean element provides the average of the DN values in the image array.

MEAN_ORBITAL_RADIUS REAL <km>
The mean_orbital_radius element provides the mean distance between the center of a solar system object and the center of its primary (e.g., the primary body for a planet is the Sun, while the primary body for a satellite is the planet about which it orbits). As the radius of an elliptical orbit varies with time, the notion of mean radius allows for general, time-independent comparisons between the sizes of different bodies' orbits.

MEAN_RADIANCE REAL
The mean_radiance is the mean of the radiance values in a radiometrically corrected product.

MEAN_RADIUS REAL <km>
The mean_radius element is measured or derived using a variety of methods. It provides, approximately, an average of the equatorial and polar radii of the best fit spheroid (for planets) or ellipsoid (for satellites).

MEAN_REFLECTANCE REAL
The MEAN_REFLECTANCE element represents the mean reflectance of an imaged area of a target body in intensity over flux (I over F) units. 10,000 I over F units would be produced by normal incidence of sunlight on a Lambert disk at the target-body's distance from the sun

MEAN_SOLAR_DAY REAL <d>
The mean_solar_day element provides the average interval required for successive transits of the Sun. This is computed as if planets and satellites move in circular orbits about their primaries with periods as specified by the revolution_period element, and as if planets and satellites have spin axes which are perpendicular to their orbit planes.

MEAN_SURFACE_PRESSURE REAL <bar>
The mean_surface_pressure element provides the mean equatorial atmospheric pressure value at the mean equatorial surface of a body, averaged over the body's year.

MEAN_SURFACE_TEMPERATURE REAL(>=2.4) <K>
The mean_surface_temperature element provides the mean equatorial surface temperature of a body, averaged over the body's year.

MEAN_TRUNCATED_BITS REAL(0, 4) <b/pixel>
The MEAN_TRUNCATED_BITS element provides the mean number of truncated bits/pixel.

MEAN_TRUNCATED_SAMPLES REAL(0, 800)<p/line>
The MEAN_TRUNCATED_SAMPLES element provides the mean number of truncated pixels/line.

MEASURED_QUANTITY_NAME [PDS-CN] CHARACTER(60)
The measured_quantity_name element indicates the physical phenomenon measured by a declared unit of measure. For example, the measured quantity name for the unit AMPERE is ELECTRIC CURRENT.

Note: A table of standard units, unit ids, and measured quantities based on those published by the Systeme Internationale appears in the 'Units of Measurement' section of the PSDD. (Please refer to the table of contents for its location.) The values in this table's 'Measured Quantity' column constitute the standard values for the data element measured_quantity_name.

MEASUREMENT_ATMOSPHERE_DESC CHARACTER
The measurement_atmosphere_desc element describes the atmospheric conditions through which data were taken.

MEASUREMENT_SOURCE_DESC CHARACTER

The measurement_source_desc element describes the source of light used in a laboratory-generated data set, or the radar transmitter in the case of radar astronomy experiments.

MEASUREMENT_STANDARD_DESC CHARACTER
The measurement_standard_desc element identifies the standard object on which observations are performed in order to calibrate an instrument.

MEASUREMENT_WAVE_CALBRT_DESC CHARACTER
The measurement_wave_calbrt_desc element identifies the technique and procedure used to calibrate wavelength.

MEDIAN REAL
The median element provides the median value (middle value) occurring in a given instance of the data object. Because of the unconventional data type of this data element, the element should appear in labels only within an explicit object, i.e. anywhere between an 'OBJECT =' and an 'END OBJECT'.

Note: For Mars Pathfinder, refers specifically to the median DN value in the image array.

MEDIUM_DESC [PDS-CN] CHARACTER
The medium_desc element provides the textual description for the medium used in the distribution of an ordered data set.

MEDIUM_FORMAT CHARACTER(60)
The medium_format element identifies the unformatted recording capacity or recording density of a given medium.

MEDIUM_TYPE CHARACTER(30)
The medium_type element identifies the physical storage medium for a data volume. Examples: CD-ROM, CARTRIDGE TAPE.

METEORITE_LOCATION_NAME CHARACTER(70)
The meteorite_location_name provides the name of the region or geographic feature where the meteorite was found.

METEORITE_NAME CHARACTER(40)
The meteorite_name element provides the name that is assigned to a meteorite. It is often derived from the name of the place or geographic feature where the meteorite was found.

METEORITE_SUB_TYPE CHARACTER(70)
The meteorite_sub_type element defines a subcategory of a meteorite_type (see definition for meteorite_type). For example, octahedrites are a subtype of iron meteorites. Octahedrites contain 4 sets of parallel plates that intersect with each other in a complex manner.

METEORITE_TYPE CHARACTER(40)
The meteorite_type element defines which class a meteorite belongs to based on the meteorite composition and physical characteristics.

METHOD_DESC CHARACTER
The method_desc element describes the method used to perform a particular observation.

MIDNIGHT_LONGITUDE REAL(-180, 360)<deg>

The midnight_longitude element identifies the longitude on the target body at which midnight was occurring at the time of the start of an observation sequence. Midnight_longitude is used to assist in geometry calculations.

Note: The coordinate_system_type data element should be used in conjunction with this data element.

MINERAL_NAME CHARACTER(60)
The mineral_name element provides the name assigned to a mineral. The name is usually chosen by the person who first identified and described the mineral.

MINIMUM CONTEXT DEPENDENT
The minimum element indicates the smallest value occurring in a given instance of the data object.

Note: For PDS and Mars Observer applications -- because of the unconventional data type of this data element, the element should appear in labels only within an explicit object, i.e. anywhere between an 'OBJECT =' and an 'END_OBJECT'.

MINIMUM_AVAILABLE_SAMPLING_INT REAL
The minimum_available_sampling_interval element identifies the finest sampling at which a particular set of data is available. For example, magnetometer data are available in various sampling intervals ranging from 1.92 seconds to 96 seconds. Thus, for magnetometer data the value of the minimum_available_sampling_interval would be 1.92.

Note: The unit of measure for the sampling interval is provided by the unit element.

MINIMUM_B1950_RING_LONGITUDE [PDS-RINGS] REAL(0, 360) <deg>
The minimum_B1950_ring_longitude element specifies the minimum inertial longitude within a ring area relative to the B1950 prime meridian, rather than to the J2000 prime meridian. The prime meridian is the ascending node of the planet's invariable plane on the Earth's mean equator of B1950. Longitudes are measured in the direction of orbital motion along the planet's invariable plane to the ring's ascending node, and thence along the ring plane.

Note: For areas that cross the prime meridian, the minimum ring longitude will have a value greater than the maximum ring longitude.

MINIMUM_BRIGHTNESS_TEMPERATURE REAL(>=2.4) <K>
The minimum_brightness_temperature element provides the minimum brightness temperature value measured within a given set of data or a given sequence. Brightness temperature is the temperature of an ideal blackbody whose radiant energy in a particular wavelength range is the same as that of an observed object or feature.

MINIMUM_CHANNEL_ID CHARACTER(4)
The minimum_channel_id element provides an identification of the lowest energy channel from which PLS instrument data is telemetered to Earth while the instrument is operating in a particular mode in a given frame. Each mode consists of a specific number of energy/charge channels which sequentially measure current, but information from all measured channels may not be telemetered to Earth.

MINIMUM_COLUMN_VALUE [PDS-CN] REAL
The minimum_column_value provides the minimum real value currently allowed by the PDS catalog for a given table element. This value is updated when new limits are discovered.

Note: These elements are unique to a table and may have different values depending on which table the element is associated with.

MINIMUM_EMISSION_ANGLE REAL(0, 180) <deg>
The minimum_emission_angle element provides the minimum emission angle value. See emission_angle.

MINIMUM_INCIDENCE_ANGLE REAL(0, 180) <deg>
The minimum_incidence_angle element provides the minimum incidence angle value. See incidence_angle.

MINIMUM_INSTRUMENT_EXPOSR_DUR REAL <ms>
The minimum_instrument_exposure_duration element provides the minimum possible exposure time for the instrument mode identified by the instrument_mode_id element. See instrument_exposure_duration.

MINIMUM_INSTRUMENT_PARAMETER REAL
The minimum_instrument_parameter element provides an instrument's minimum usefully detectable signal level for a given instrument parameter. This value indicates the physical value corresponding to the minimum output of an instrument. The instrument parameter to which this relates is identified by the instrument_parameter_name element.

MINIMUM_LATITUDE REAL(-90, 90) <deg>
The minimum_latitude element specifies the southernmost latitude of a spatial area, such as a map, mosaic, bin, feature, or region. See latitude.

MINIMUM_LENGTH [PDS-CN] INTEGER(1, 0)
The minmum_length element supplies the minimum number of units that are required for the representation of a data element. This element is generally assigned a value of N/A except in the case where a minimum number of units are required for the value. For example a password may require a minimum number of characters to be valid.

MINIMUM_LIMB_ANGLE REAL(-90, 90) <deg>
The minimum_limb_angle element provides the minimum value of the limb angle within a given set of data. See limb_angle.

MINIMUM_LOCAL_TIME REAL(0, 24) <local day/24>
The minimum_local_time element provides the minimum local time of day on the target body, measured in hours from local midnight.

MINIMUM_LONGITUDE REAL(0, 360) <deg>
The minimum_longitude element specifies the easternmost (right_most) longitude of a spatial area, such as a map, mosaic, bin, feature, or region. See longitude.

Note: The minimum longitude data element is obsolete and should no longer be used. The assumed coordinate system was planetographic for prograde rotators (PDS Cartographic Standards V3.0). See coordinate_ system_type, easternmost_longitude and westernmost_longitude.

MINIMUM_PARAMETER REAL
The minimum_parameter element specifies the minimum allowable value for a parameter input to a given data processing program. The parameter constrained by this value is identified by the parameter_name element.

MINIMUM_PHASE_ANGLE REAL(0, 180) <deg>
The minimum_phase_angle element provides the minimum phase angle value. See phase_angle.

MINIMUM_RADIAL_RESOLUTION [PDS-RINGS] REAL <km>

The minimum_radial_resolution element indicates the minimum (finest) radial distance over which changes in ring properties can be detected within a data product.

MINIMUM_RADIAL_SAMPLING_INTERV [PDS-RINGS] REAL <km>
The minimum_radial_sampling_interval element indicates the minimum radial spacing between consecutive points in a ring profile. In practice, this may be somewhat smaller than the minimum_radres element because the profile may be over-sampled.

MINIMUM_RING_LONGITUDE [PDS-RINGS] REAL(0, 360) <deg>
The minimum_ring_longitude element specifies the minimum inertial longitude of a ring area relative to the prime meridian. In planetary ring systems, the prime meridian is the ascending node of the planet's invariable plane on the Earth's mean equator of J2000. Longitudes are measured in the direction of orbital motion along the planet's invariable plane to the ring's ascending node, and thence along the ring plane.

Note: For areas that cross the prime meridian, the minimum ring longitude will have a value greater than the maximum ring longitude.

Note: The invariable plane of a planet is equivalent to its equatorial plane for every ringed planet except Neptune.

MINIMUM_RING_RADIUS [PDS-RINGS] REAL <km>
The minimum_ring_radius element indicates the minimum (innermost) radial location of an area within a planetary ring system. Radii are measured from the center of the planet along the nominal ring plane.

MINIMUM_SAMPLING_PARAMETER REAL
The minimum_sampling_parameter element identifies the minimum value at which a given data item was sampled. For example, a spectrum that was measured in the 0.4 to 3.5 micrometer spectral region would have a minimum_sampling_parameter value of 0.4. The sampling parameter constrained by this value is identified by the sampling_parameter_name element.

Note: The unit of measure for the sampling parameter is provided by the unit element.

MINIMUM_SLANT_DISTANCE REAL <km>
The minimum_slant_distance element provides the minimum slant distance value. See slant_distance.

MINIMUM_SOLAR_BAND_ALBEDO REAL(0, 1)
The minimum_solar_band_albedo element provides the minimum solar band albedo value measured within a given set of data or a given sequence.

MINIMUM_SPECTRAL_CONTRAST REAL <K>
The minimum_spectral_contrast element provides the minimum value of spectral contrast within a given set of data. See spectral_contrast_ range.

MINIMUM_SURFACE_PRESSURE REAL <bar>
The minimum_surface_pressure element provides the minimum surface pressure value for the atmosphere of a given body.

MINIMUM_SURFACE_TEMPERATURE REAL(>=2.4) <K>
The minimum_surface_temperature element provides the minimum equatorial surface temperature value for a given body during its year.

MINIMUM_WAVELENGTH REAL <micron>

The minimum_wavelength element identifies the minimum wavelength at which an observation can be made or was made. For instruments, this may depend on the instrument detector or filter characteristics. For data products, this is the effective lower limit on the wavelength detected.

MISSING_CONSTANT CONTEXT DEPENDENT
The missing_constant element supplies the value used when no science data were available.

Note: For PDS and Mars Observer applications -- because of the unconventional data type of this data element, the element should appear in labels only within an explicit object, i.e. anywhere between an 'OBJECT =' and an 'END_OBJECT'.

MISSING_SCAN_LINES [PDS-GEO-VL] INTEGER
The MISSING_SCAN_LINES element is the total number of scan lines missing from an image or observation when it was received on Earth.

MISSION_ALIAS_NAME CHARACTER(60)
The mission_alias_name element provides an official name of a mission used during the initial design, implementation, or prelaunch phases. Example values: mission_name:MAGELLAN, mission_alias_name:VENUS RADAR MAPPER.

MISSION_DESC CHARACTER
The mission_desc element summarizes major aspects of a planetary mission or project, including the number and type of spacecraft, the target body or bodies and major accomplishments.

MISSION_ID [JPL-AMMOS-SPECIFIC] CHARACTER
The mission_id element provides a synonym or mnemonic for the mission_name element.

Note: Within AMMOS this may also be a numeric value which is the DSN mission number.

MISSION_NAME CHARACTER(60)
The mission_name element identifies a major planetary mission or project. A given planetary mission may be associated with one or more spacecraft.

MISSION_NAME_OR_ALIAS CHARACTER(30)
The mission_name_or_alias element provides the capability to enter either a mission name or a mission alias name in a single input parameter field of a user view.

MISSION_OBJECTIVES_SUMMARY CHARACTER
The mission_objectives_summary element describes the major scientific objectives of a planetary mission or project.

MISSION_PHASE_DESC CHARACTER
The mission_phase_desc element summarizes key aspects of a mission phase.

MISSION_PHASE_NAME CHARACTER(30)
The mission_phase_name element provides the commonly-used identifier of a mission phase.

MISSION_PHASE_START_TIME TIME
The mission_phase_start_time element provides the date and time of the beginning of a mission phase in UTC system format.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

MISSION_PHASE_STOP_TIME TIME
The mission_phase_stop_time element provides the date and time of the end of a mission phase in UTC system format.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

MISSION_PHASE_TYPE CHARACTER(20)
The mission_phase_type element identifies the type of a major segment or 'phase' of a spacecraft mission. Example values: LAUNCH, CRUISE, ENCOUNTER.

MISSION_START_DATE DATE
The mission_start_date element provides the date of the beginning of a mission in UTC system format.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

MISSION_STOP_DATE DATE
The mission_stop_date element provides the date of the end of a mission in UTC system format.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

MODE_CONTINUATION_FLAG CHARACTER(1)
The mode_continuation_flag element is a yes-or-no flag which indicates if the first mode in a frame is a continuation of a measurement from the previous frame. Some modes require longer than one frame to make a measurement, resulting in their continuation to a subsequent frame. In that case, the mode_continuation_flag element would have the value Y.

MODE_INTEGRATION_DURATION REAL(3.84, 122.88) <s>
The mode_integration_duration element provides the length of time required to measure all the channels which are sampled when the instrument is operating in a given mode.

MOSAIC_DESC CHARACTER
The mosaic_desc element provides a brief textual description of a mosaic.

MOSAIC_IMAGES INTEGER
The mosaic_images element identifies the number of images which are contained in a given mosaic.

MOSAIC_PRODUCTION_PARAMETER CHARACTER(10)
The mosaic_production_parameter element identifies the method of production of a mosaic product (e.g., manual vs. digital).

MOSAIC_SEQUENCE_NUMBER INTEGER
The mosaic_sequence_number element is a numeric identifier which defines a group of related images on a single mosaic. The mosaic_sequence_number is necessary when several groups of images covering different regions are printed on one photo_product.

MOSAIC_SERIES_ID CHARACTER(30)
The mosaic_series_id element is an alphanumeric identifier for mosaics from a given mission.

MOSAIC_SHEET_NUMBER INTEGER
The mosaic_sheet_number element is a numeric identifier for a mosaic series or for a mosaic within a mosaic series.

MULT_PEAK_FRESNEL_REFLECT_CORR [PDS-GEO-MGN] REAL

The mult_peak_fresnel_reflect_corr element provides the correction factor that has been applied to derived_fresnel_reflectivity to allow for radar echoes possessing more than an single peak.

NAIF_DATA_SET_ID CHARACTER(40)
The naif_data_set_id element provides the data_set_id which contains the position information for the instrument.

Note: This data element is obsolete. The product_id data element should be used instead.

NAME CHARACTER(60)
The name data element indicates a literal value representing the common term used to identify an element or object. See also: 'id'.

Note: In the PDS data dictionary, name is restricted to 30 characters, and must conform to PDS nomenclature standards.

NATIVE_START_TIME CHARACTER(40)
The native_start_time element provides a time value at the beginning of a time period of interest. Native time is 'native to' (that is, resident within) a given set of data, in those cases in which the native time field is in a format other than the standard UTC system format. For example, the spacecraft clock count could be a native time value.

NATIVE_STOP_TIME CHARACTER(40)
The native_stop_time element provides a time value at the end of a time period of interest. Native time is 'native to' (that is, resident within) a given set of data, in those cases in which the native time field is in a format other than the standard UTC system format. For example, the spacecraft clock count could be a native time value.

NAV_UNIQUE_ID [JPL-AMMOS-SPECIFIC] CHARACTER
The nav_unique_id element is an AMMOS-MGN unique element used to express a NAV-unique identifier for the file.

Note: This data element is obsolete. The source_product_id element should be used instead.

NODE_DESC CHARACTER
The node_desc element describes a PDS Node.

NODE_ID CHARACTER(12)
The node_id element provides the node id assigned to a science community node.

NODE_INSTITUTION_NAME CHARACTER(60)
The node_institution_name element identifies a university, research center, NASA center or other institution associated with a PDS node.

NODE_MANAGER_PDS_USER_ID CHARACTER(60)
The node_manager_pds_user_id element provides the pds_user_id of the node manager.

NODE_NAME CHARACTER(60)
The node_name element provides the officially recognized name of a PDS Node.

NOISE_LEVEL REAL
The noise_level element identifies the threshold at which signal is separable from noise in a given data set or for measurements performed by a particular instrument. For instruments the noise level is a function

primarily of the instrument characteristics, while for data sets or data products the noise level can also be a function of the data processing history.

NOISE_TYPE [PDS-RINGS] CHARACTER(20)
The noise_type element indicates the type of the noise statistics in a data product.

NOMINAL_ENERGY_RESOLUTION REAL(2.9, 30)
The nominal_energy_resolution element provides an approximation of the energy resolution obtained during a particular instrument mode. Energy resolution is defined as the width of an energy channel divided by the average energy of that channel. A nominal value is given as this quantity varies between channels.

NOMINAL_OPERATING_TEMPERATURE REAL(2.4, 1100) <K>
The nominal_operating_temperature element identifies the operating temperature as given in the specifications for an instrument detector.

NON_CLUSTERED_KEY [PDS-CN] CHARACTER(1)
The non_clustered_key element indicates whether a column in a table has a nonclustered index. This index is not unique does not determines the sorting order of the data, but is intended purely for query performance optimization.

NON_RANGE_PROF_CORRS_INDEX [PDS-GEO-MGN] INTEGER
The non_range_prof_corrs_index element provides the value of the index of the element in non_range_sharp_echo_prof that corresponds to the first element in best_non_range_sharp_model_tpt[0]. The indices start at zero.

NON_RANGE_SHARP_ECHO_PROF [PDS-GEO-MGN] INTEGER
The non_range_sharp_echo_prof element provides the value of the power vs. time echo profile, at half-baud (0.21 microsecond) intervals, assembled from up to 16 frequency components, without shifting their time origins (see range_sharp_echo_profile element). This profile yields the best estimate of the time dispersion of the echo, and hence the value of the derived_rms_surface_slope and derived_fresnel_reflectivity element.

NON_RANGE_SHARP_FIT [PDS-GEO-MGN] REAL
The non_range_sharp_fit element provides the value of the 'goodness of fit' measuring the correlation between the observed profile non_range_sharp_echo_prof and the theoretical template best_non_range_sharp_model_tpt elements. Scaling_factors for the best_non_range_sharp_model_tpt and the non_range_sharp_echo_prof elements provide the value of the conversion factor that multiplies the integer array elements of the best_non_range_sharp_model_tpt and non_range_sharp_echo_prof elements to yield their physical values, expressed as equivalent radar cross-sections in units of km**2.

NON_RANGE_SHARP_LOOKS [PDS-GEO-MGN] INTEGER
The non_range_sharp_looks element provides the value of the number of statistically independent measurements of echo profile that were summed to produce the value for the profile non_range_sharp_echo_prof element.

NORTH_AZIMUTH REAL(0, 360) <deg>
The north_azimuth element provides the value of the angle between a line from the image center to the north pole and a reference line in the image plane. The reference line is a horizontal line from the image center to the middle right edge of the image. This angle increases in a clockwise direction.

NORTH_AZIMUTH_CLOCK_ANGLE REAL(0, 360) <deg>

The north_azimuth_clock_angle element specifies the direction of the northward pointing azimuth on the surface of the target body as it appears at the center of an image. It is measured from the 'upward' direction, clockwise to the northward azimuth as projected into the image plane, assuming the image is displayed as defined by the SAMPLE_DISPLAY_DIRECTION and LINE_DISPLAY_DIRECTION elements. This keyword is intended to be a replacement for the NORTH_AZIMUTH keyword which has not been used in a consistent way in the past.

Note: In some cases, knowledge of the inertial orientation of the ratational axis improves with time. This keyword necessarily reflects the state of knowledge of the rotational axis at the time of preparing the data product as given by the POLE_DECLINATION and POLE_RIGHT_ASCENSION elements. Note also that this quantity can vary significantly within a single image, particularly when a large fraction of the body is included in the image, so it is sensitive to the accuracy of an image's pointing information. This keyword is undefined if the central pixel of an image does not intersect the target body.

NOT_APPLICABLE_CONSTANT CONTEXT DEPENDENT
The not_applicable_constant element supplies the numeric value used to represent the figurative constant 'N/A'. 'N/A' (Not Applicable) is defined as indicating when values within the domain of a particular data element do not apply in a specific instance.

NOTE CHARACTER
The note element is a text field which provides miscellaneous notes or comments (for example, concerning a given data set or a given data processing program).

NOTEBOOK_ENTRY_TIME TIME
The notebook_entry_time element provides the date and time at which an experimenter made a particular entry in the experimenter notebook.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

NSSDC_DATA_SET_ID [PDS-CN] CHARACTER(40)
The nssdc_data_set_id element is the identifier used by the NSSDC for a data set or data product. A PDS data set or collection may have one or more associated NSSDC data sets.

NTV_SAT_TIME_FROM_CLOSEST_APRH [PDS-IMG-GLL] CHARACTER(14)
The ntv_sat_time_from_closest_aprh (native satellite time from closest approach) element provides the time from closest approach to the satellite. This should not be confused with NTV_TIME_FROM_CLOSEST_APPROACH which is the time from closest approach to the central body. The format is +/- DDDHHMMSS, where negative refers to Days,Hours, Minutes, Seconds before the encounter.

NTV_TIME_FROM_CLOSEST_APPROACH [PDS-IMG-GLL] CHARACTER(14)
The ntv_time_from_closest_approach (native time from closest approach) element provides the time from closest approach to the central body. The format is +/- DDDHHMMSS, where negative refers to Days, Hours, Minutes, Seconds before the encounter.

NULL_CONSTANT CONTEXT DEPENDENT
The NULL_CONSTANT element supplies the numeric value used to represent the figurative constant 'NULL'. 'NULL' is defined as indicating when values within the domain of a particular element are temporarily unknown. A value is applicable and may be forthcoming. See also NOT_APPLICABLE_CONSTANT, UNKNOWN_CONSTANT.

OBJECT_CLASSIFICATION_TYPE [PDS-CN] CHARACTER(20)

The object_classification_type element identifies a defined object with a classification specified by the defining data system.

OBJECT_NAME [PDS-CN] CHARACTER(12)
The object_name element provides the template object name assigned by the Central Node data administrator to a logical template used in the PDS.

OBJECT_TYPE [PDS-CN] CHARACTER(10)
The object_type data element indicates a system-specific categorization for a data object. Example: GENERIC, SPECIFIC. In the PDS, the difference between generic and specific objects is illustrated in the PDS Data Preparation Workbook.

OBLIQUITY REAL(0, 90) <deg>
The obliquity element provides the value of the angle between the plane of the equator and the orbital plane of a target body.

OBSERVATION_ID CHARACTER(30)
The observation_id element uniquely identifies a scientific observation within a data set.

Note: For Galileo the observation_id is in the form NNTIOOOOOOMM#SSSXXXX. Where NN is the orbit number, T is the scan platform target body initial (if applicable), I is the instrument, oooooo is the orbit planning guide objective mnemonic, MM is the sequential OAPEL number for each value of NNTIOOOOOO, # is the multiple observation flag symbol (- or +), SSS is the PA set number and XXXX is the MIPL processing code.

OBSERVATION_NAME CHARACTER(64)
The observation_name element provides the identifier for an observation or sequence of commands.

OBSERVATION_TIME TIME
The observation_time element provides the date and time of the midpoint between the start and end times (spacecraft, ground-based, or system event) in UTC system format.

OBSERVATION_TYPE CHARACTER(30)
The observation_type element identifies the general type of an observation.

OBSERVER_FULL_NAME [PDS-SBN] CHARACTER(80)
The OBSERVER_FULL_NAME element provides the name of the person(s) that calculated or collected relevant data in support of an archived project or campaign. In the case of catalogs of calculated quantities OBSERVER_FULL_NAME identifies the person who performed the calculations. In the case of compilations from the literature OBSERVER_FULL_NAME indicates the identity of the person responsible for collecting the source observations into a single dataset.

OBSTRUCTION_ID CHARACTER(20)
The obstruction_id element identifies a boom or other obstruction blocking the view of an instrument during an observation. For example, the Galileo SSI is occasionally blocked by a boom.

OFFSET CONTEXT DEPENDENT
The offset element indicates a shift or displacement of a data value. See also: scaling_factor.

Note: Expressed as an equation: true value = offset value + (scaling factor x stored value).

OFFSET_MODE_ID CHARACTER(20)

The offset_mode_id identifies the analog value that is subtracted from the video signal prior to the analog/digital converters.

OFFSET_NUMBER [PDS-GEO-VL] REAL
The OFFSET_NUMBER indicates the offset value used in the analog to digital conversion. The OFFSET_NUMBER times a constant is the voltage value added to the measured voltage signal before digitization.

ON_CHIP_MOSAIC_FLAG [PDS-IMG-GLL] CHARACTER(1)
Galileo Solid State Imaging-specific. The on_chip_mosaic_flag element indicates whether the image is part of a multiple exposure/single read-out mode, or ON_CHIP_MOSAIC. For example, four images of the target-body are acquired by slewing the camera to image the target at each of the four corners of the Charged Coupled Device (CCD) array. The CCD read-out is suppressed until all four exposures are completed, thus resulting in a 2X2 mosaic. An on chip mosaic is not limited to a 2x2 mosaic, it can be an nxm mosaic.

ON_LINE_IDENTIFICATION [PDS-CN] CHARACTER(255)
The on_line_identification element is a unique identifier for product resources which are on-line. It may be a URL to a home page, an e-mail address, an ftp site or a jukebox. An on_line_identification element may be associated with a data set, data set collection, mission, instrument, host, target or volume.

ON_LINE_NAME [PDS-CN] CHARACTER(60)
The on_line_name element is a unique name which corresponds to a given on_line_identification element. It is used to create HTML links to appropriate home pages.

OPERATING_SYSTEM_ID CHARACTER(20)
The operating_system_id element identifies the computer operating system and version of the operating system on which data were manipulated, (e.g., VMS 4.6,UNIX SYSTEM 5, DOS 4.0, MAC).

OPERATIONAL_CONSID_DESC CHARACTER
The operational_consid_desc element provides a brief description of operational characteristics which affect the measurements made by an instrument.

OPERATIONS_CONTACT_PDS_USER_ID CHARACTER(60)
The operations_contact_pds_user_id element provides the pds_user_id of the operations contact at a node.

OPTICS_DESC CHARACTER
The optics_desc element provides a textual description of the physical and operational characteristics of the optics of an instrument.

OPTIONAL_ELEMENT_SET [PDS-CN] CHARACTER(30)
The optional_element_set element identifies the data elements that are optional members of a defined object.

Note: In the PDS, the data elements listed in this set must be approved for inclusion in the data dictionary.

OPTIONAL_OBJECT_SET [PDS-CN] CHARACTER(30)
The optional_object_set element identifies the ODL objects that are optional members of a defined object.

ORBIT_DIRECTION CHARACTER(30)
The orbit_direction element provides the direction of movement along the orbit about the primary as seen from the north pole of the 'invariable plane of the solar system', which is the plane passing through the center of mass of the solar system and perpendicular to the angular momentum vect or of the solar system

orbit motion. PROGRADE for positive rotation according to the right-hand rule, RETROGRADE for ne gative rotation. See also: orbital_inclination

ORBIT_NUMBER REAL
The orbit_number element identifies the number of the orbital revolution of the spacecraft around a target body.

Note: In PDS Magellan altimetry and radiometry labels, the orbit_number data element refers to the Magellan orbit number corresponding to the following files: ephemeris, altimetry, and radiometry.

ORBIT_START_NUMBER [JPL-AMMOS-SPECIFIC] INTEGER
The orbit_start_number is an alias for start_orbit_number used exclusively by the AMMOS-MGN KEY_TIMES data file.

ORBIT_START_TIME [JPL-AMMOS-SPECIFIC] TIME
The orbit_start_time element is an alias for start_time used exclusively by AMMOS-MGN ephemeris files.

ORBIT_STOP_NUMBER [JPL-AMMOS-SPECIFIC] INTEGER
The orbit_stop_number is an alias for stop_orbit_number used exclusively by the AMMOS-MGN KEY_TIMES data file.

ORBIT_STOP_TIME [JPL-AMMOS-SPECIFIC] TIME
The orbit_stop_time element is an alias for stop_time used exclusively by AMMOS-MGN ephemeris files.

ORBITAL_ECCENTRICITY REAL(0, 1)
The orbital_eccentricity provides a measure of the non-circularity of an orbit. Circular orbits have eccentricities of 0, elliptical orbits have eccentricities between 0 and 1, parabolic trajectories have eccentricities of 1, and hyperbolic trajectories have eccentricities greater than 1.

ORBITAL_INCLINATION REAL(-90, 180) <deg>
The orbital_inclination element provides the value of the angle between the orbital plane of a target body and the ecliptic. The body's orbit direction is prograde if 0 < i 90 degrees, where i is the value of orbital inclination. The orbit direction is retrograde if 90 < i < 180 degrees.

ORBITAL_SEMIMAJOR_AXIS REAL <km>
The orbital_semimajor_axis element provides the value of the semimajor axis of the orbit of a target body. The semimajor axis is one_half of the maximum dimension of an orbit.

ORDER_DATE [PDS-CN] DATE
The order_date element provides the date of when an order was placed for a data set.

ORDER_NUMBER [PDS-CN] INTEGER
The order_number element is a unique system_generated number which is used to identify an order.

ORDER_STATUS [PDS-CN] CHARACTER(10)
The order_status element provides the status associated with orders and order items accepted by the PDS order function.

ORDER_STATUS_DATE [PDS-CN] DATE
The order_status_date element provides the effective date of an order status change.

ORDER_STATUS_DESC [PDS-CN] CHARACTER
The order_status_desc element details the status of an order.

ORDER_STATUS_ID [PDS-CN] CHARACTER(20)
The order_status_id element identifies the status of an order.

ORDER_STATUS_TIME [PDS-CN] TIME
The order_status_time element gives the date (and time, where applicable) as of which the status of an order was changed.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

ORDER_TYPE [PDS-CN] CHARACTER(2)
The order_type element identifies the type of order placed by a user of the PDS. Example values: PR=product orders, CD=CD-ROM fast track orders.

ORIGINAL_PRODUCT_ID CHARACTER(40)
The original_product_id element provides the temporary product identifier that was assigned to a product during active flight operations which was eventually replaced by a permanent id (see product_id).

OUTPUT_FLAG [PDS-CN] CHARACTER(1)
The output_flag element indicates whether standard values shall be output for hardcopy display.

PARAMETER_DESC CHARACTER
The parameter_desc element defines the input or output parameter identified by the parameter_name element, including units, derivation (where applicable), and associated parameters.

PARAMETER_NAME [PDS-CN] CHARACTER(30)
The parameter_name element identifies a parameter input to or output from a program or algorithm.

PARAMETER_SEQUENCE_NUMBER [PDS-CN] INTEGER
The parameter_sequence_number element provides an ordering sequence number for parameters used in user views and associated queries.

PARAMETER_TYPE [PDS-CN] CHARACTER(1)
The parameter_type element provides the type of parameter (input or output) used in user views and associated queries.

PARENT_TEMPLATE [PDS-CN] CHARACTER(12)
The parent_template element contains the name of the template which provides the loader software with a keyword value which occurred elsewhere in the same or a different template. For example: the value for the data_set_id keyword is required in several templates to map the template information to the proper dataset, yet to avoid redundant data supplier effort it appears only on the DATASET template. For these templates, the parenttmplt provides the source of the data_set_id value, i.e. the DATASET template.

PARTICLE_SPECIES_NAME CHARACTER(20)
The particle_species_name element provides the name of a particle detected by a given instrument. Example values: ELECTRON, ION, PROTON, HYDROGEN, HELIUM, OXYGEN, etc. For ions, the specific atomic number designation may be used (e.g., Z=1, Z=2, Z=8, etc.).

PASS_NUMBER [PDS-PPI] REAL
The pass_number data element indicates the number of days since initial spacecraft signal acquisition.

PATH_NAME CHARACTER(72)

The path_name data element identifies the full directory path -- excluding the file name -- used to locate a file on a storage medium or online system. To allow the indication of the full path and file name within a descriptive label, this data element is meant to be used in conjunction with the file_name data element.

Note: In the PDS, the path_name data element is expressed according to the UNIX convention, using forward slashes to delimit directories. While the leading slash denoting the root directory is omitted, the final slash is used.

PDS_ADDRESS_BOOK_FLAG CHARACTER(1)
The pds_address_book_flag data element indicates whether or not a registered PDS user will have an entry in the PDS telephone directory.

PDS_AFFILIATION CHARACTER(30)
The pds_affiliation data element describes the type of relationship an individual has with a PDS node. (e.g., staff, advisory group, etc..)

PDS_USER_ID [PDS-CN] CHARACTER(16)
The pds_user_id element provides a unique identifier for each individual who is allowed access to the PDS. The system manager at the Central Node assigns this identifier at the time of user registration.

PDS_VERSION_ID [PDS-CN] CHARACTER(6)
The PDS_version_id data element represents the version number of the PDS standards documents that is valid when a data product label is created. Values for the PDS_version_id are formed by appending the integer for the latest version number to the letters 'PDS'. Examples: PDS3, PDS4.

PEER_REVIEW_DATA_SET_STATUS [PDS-CN] CHARACTER(20)
The peer_review_data_set_status element provides status for data sets which have been peer reviewed.

PEER_REVIEW_ID [PDS-CN] CHARACTER(40)
The peer_review_id element provides a unique identifier assigned by the bulk loading software to each peer review information set saved in the PDS data base.

PEER_REVIEW_RESULTS_DESC [PDS-CN] CHARACTER
The peer_review_results element provides the textual description of the results of a peer review.

PEER_REVIEW_ROLE [PDS-CN] CHARACTER(30)
The peer_review_role element provides the role of a member of a peer review committee.

PEER_REVIEW_START_DATE [PDS-CN] DATE
The peer_review_start_date element provides the beginning date for a peer review in YYYYMMDD format.

PEER_REVIEW_STOP_DATE [PDS-CN] DATE
The peer_review_stop_date element provides the final date for a peer review in YYYYMMDD format.

PERIAPSIS_ARGUMENT_ANGLE REAL(0, 360) <deg>
The periapsis_argument_angle element provides the value of the periapsis argument angle, which is defined as the angle measured from the ascending node of the orbit of a target body (relative to the reference plane) to the point in the orbit at which the target body obtains its closest approach to the primary body. See also: ascending_node_longitude.

PERIAPSIS_LATITUDE REAL(-90, 90) <deg>

The periapsis_latitude element specifies the latiitude on the planet's surface above which a spacecraft passes through periapsis on a particular orbit.

PERIAPSIS_LONGITUDE REAL(0, 360) <deg>
The periapsis_longitude element specifies the longitude on the planet's surface above which a spacecraft passes through periapsis on a particular orbit.

PERMISSION_FLAG [PDS-CN] CHARACTER(1)
The permission_flag element indicates whether or not a query is orderable.

PERSON_INSTITUTION_NAME CHARACTER(60)
The person_institution_name element identifies a university, research center, NASA center or other institution associated with an individual involved with the PDS.

PHASE_ANGLE REAL(0, 180) <deg>
The phase_angle element provides a measure of the relationship between the instrument viewing position and incident illumination (such as solar light). Phase_angle is measured at the target; it is the angle between a vector to the illumination source and a vector to the instrument. If not specfied, the target is assumed to be at the center of the instrument field of view. If illumination is from behind the instrument, phase_ angle will be small.

PHASE_INFORMATION_FLAG [PDS-RINGS] CHARACTER(1)
The phase_information_flag element is a yes-or-no flag that indicates whether a ring occultation data set includes information about the phase shift of a signal as it passes through the ring plane. A value of 'Y' indicates that the data is intrinsically complex. In general, this element equals 'Y' for radio occultation data and 'N' for stellar occultation data.

PI_PDS_USER_ID CHARACTER(60)
The pi_pds_user_id element provides the pds_user_id of the principal investigator associated with an instrument.

PIXEL_AVERAGING_HEIGHT INTEGER(1, 0)
The pixel_averaging_height element provides the vertical dimension, in pixels, of the area over which pixels were averaged prior to image compression.

PIXEL_AVERAGING_WIDTH INTEGER(1, 0)
The pixel_averaging_width element provides the horizontal dimension, in pixels, of the area over which pixels were averaged prior to image compression.

PLANET_DAY_NUMBER REAL <d>
The planet_day_number element indicates the number of sidereal days (rotation of 360 degrees) elapsed since a reference day (e.g., the day on which a landing vehicle set down). Days are measured in rotations of the planet in question from the reference day (which is day zero).

Note: For MPF, planet_day_number will be measured from 1 rather than 0.

PLANET_READING_SYSTEM_TEMP [PDS-GEO-MGN] REAL <K>
The planet_reading_system_temp element provides the value of the raw radiometer reading, when switched into the SAR antenna, converted to equivalent noise temperature.

PLANETARY_OCCULTATION_FLAG [PDS-RINGS] CHARACTER(1)
The planetary_occultation_flag element is a yes-or-no flag that indicates whether a ring occultation track also intersects the planet.

PLATFORM CHARACTER(40)
The platform element describes the available platforms which the software supports.

PLATFORM_OR_MOUNTING_DESC CHARACTER
The platform_or_mounting_desc element describes the spacecraft platform or laboratory mounting frame on which an instrument is mounted.

PLATFORM_OR_MOUNTING_NAME CHARACTER(30)
The platform_or_mounting_name element identifies the spacecraft platform or the laboratory mounting frame on which an instrument is mounted. Example values: SCAN_PLATFORM, PROBE, MAGNETOMETER_BOOM.

POLE_DECLINATION REAL(0, 90) <deg>
The pole_declination element provides the value of the declination of the polar axis of a target body. See declination.

POLE_RIGHT_ASCENSION REAL(0, 360) <deg>
The pole_right_ascension element provides the value of the right_ascension of the polar axis of a target body. See right_ascension.

POSITION_TIME TIME
The position_time element provides the time when the location information of an event is derived, in the UTC system format.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

POSITIVE_ELEVATION_DIRECTION CHARACTER(10)
The positive_elevation_direction element provides the direction in which elevation is measured in positive degrees for an observer on the surface of a body. The elevation is measured with respect to the azimuthal reference plane. A value of UP or ZENITH indicates that elevation is measured positively upwards, i.e., the zenith point would be at +90 degrees and the nadir point at -90 degrees. DOWN or NADIR indicates that the elevation is measured positively downwards; the zenith point would be at -90 degrees and the nadir point at +90 degrees.

POSITIVE_LONGITUDE_DIRECTION CHARACTER(4)
The positive_longitude_direction element identifies the direction of longitude (e.g. EAST, WEST) for a planet. The IAU definition for direction of positive longitude is adopted. Typically, for planets with prograde rotations, positive longitude direction is to the WEST. For planets with retrograde rotations, positive longitude direction is to the EAST.

Note: The positive_longitude_direction keyword should be used for planetographic systems, but not for planetocentric.

PREFERENCE_ID INTEGER
The preference_id element indicates a user's degree of preference for one of a set of alternatives (for example, preference for a particular electronic mail system such as Internet). Values range from 1 to 4, with 1 indicating the highest preference.

PRIMARY_BODY_NAME CHARACTER(30)
The primary_body_name element identifies the primary body with which a given target body is associated as a secondary body.

PROCESS_TIME [JPL-AMMOS-SPECIFIC] TIME
Alias within AMMOS for product_creation_time.

Note: This element is retained for use by Magellan AMMOS data products only. New products should use product_creation_time.

PROCESS_VERSION_ID CHARACTER(20)
The process_version_id element identifies the version (e.g., the method of processing) of a mosaic.

PROCESSING_CONTROL_PARM_NAME CHARACTER(30)
The processing_control_parm_name element identifies a parameter which allows a user to tailor a program or an algorithm to specific needs, such as outputting planetary surface coordinates in planetocentric or planetographic coordinates, specifying the units of the parameters to be plotted or specifying the scale of a map to be output.

PROCESSING_HISTORY_TEXT CHARACTER
The processing_history_text element provides an entry for each processing step and program used in generating a particular data file.

PROCESSING_LEVEL_DESC CHARACTER
The processing_level_desc element provides the CODMAC standard definition corresponding to a particular processing_level_id value.

Note: For a fuller definition of CODMAC processing levels, please refer to the PDS Standards Reference.

PROCESSING_LEVEL_ID CHARACTER(1)
The processing_level_id element identifies the processing level of a set of data according to the eight_level CODMAC standard.

PROCESSING_START_TIME TIME
The processing_start_time element gives the beginning date (and time, where appropriate) of processing for a particular set of data.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

PROCESSING_STOP_TIME TIME
The processing_stop_time element gives the ending date (and time, where appropriate) of processing for a particular set of data.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

PRODUCER_FULL_NAME CHARACTER(60)
The producer_full_name element provides the full_name of the individual mainly responsible for the production of a data set. See also: full_name.

Note: This individual does not have to be registered with the PDS.

PRODUCER_ID CHARACTER(20)
The producer_id element provides a short name or acronym for the producer or producing team/group of a dataset.

PRODUCER_INSTITUTION_NAME CHARACTER(60)

The producer_institution_name element identifies a university, research center, NASA center or other institution associated with the production of a data set. This would generally be an institution associated with the element producer_full_name.

PRODUCT_CREATION_TIME TIME
The product_creation_time element defines the UTC system format time when a product was created.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

PRODUCT_DATA_SET_ID CHARACTER(40)
The product_data_set_id element provides the data_set_id of a cataloged data set that resulted from the application of the processing software to the source data sets. The data set name associated with the product data set is provided by the data_set_name element.

PRODUCT_ID CHARACTER(40)
The product_id data element represents a permanent, unique identifier assigned to a data product by its producer. See also: source_product_id.

Note: In the PDS, the value assigned to product_id must be unique within its data set.

Additional note: The product_id can describe the lowest-level data object that has a PDS label.

PRODUCT_NAME [PDS-SBN] CHARACTER(80)
The PRODUCT_NAME element provides the full name of a product. It is related to product_id and provides a brief, descriptive title for a particular data product (i.e., a single file).

PRODUCT_RELEASE_DATE DATE
The product_release_date data element identifies the date on which a particular data product is released from one system or process to another, according to system- or application-specific criteria.

Formation rule: YYYY-MM-DD

PRODUCT_TYPE CHARACTER(30)
The PRODUCT_TYPE data element identifies the type or category of a data product within a data set. Examples: EDR, UDR.

PRODUCT_VERSION_ID CHARACTER(10)
The product_version_id element identifies the version of an individual product within a data set. Example: 1.0, 2A, 1.2.3C.

Note: This is not the same as the data set version that is an element of the data_set_id value. Product_version_id is intended for use within AMMOS to identify separate iterations of a given product, which will also have a unique file_name.

PRODUCT_VERSION_TYPE CHARACTER(20)
The product_version_type element identifies the version of an individual data product. It can be applied to any type of data that might appear in several incarnations, including ephemeris files, sequence files, or software. Example values: VERSION 1, PREDICT, ACTUAL, DRAFT, PRELIMINARY, FINAL, REVISION A.

PROGRAMMING_LANGUAGE_NAME CHARACTER(20)
The programming_language_name element identifies the major programming language in which a given data processing program or algorithm is written.

PROJECTED_STAR_DIAMETER [PDS-RINGS] REAL <km>
The projected_star_diameter element indicates the projected linear diameter of a star at the distance of the given planet, during a stellar occultation experiment.

PROTOCOL_TYPE [PDS-CN] CHARACTER(40)
The protocol_type element identifies the protocol type for the on_line_identification element. Example value: URL, FTP, E-MAIL.

PUBLICATION_DATE DATE
The publication_date element provides the date when a published item, such as a document or a compact disc, was issued.

Formation rule: YYYY-MM-DD

RAD_ALONG_TRACK_FOOTPRINT_SIZE [PDS-GEO-MGN] REAL <km>
The rad_along_track_footprint_size provides the value of the along track dimension of the intersection of the SAR antenna (3dB one-way attenuation) cone with a sphere of radius average_planetary_radius.

RAD_CROSS_TRACK_FOOTPRINT_SIZE [PDS-GEO-MGN] REAL <km>
The rad_cross_track_footprint_size element provides the value of the cross track dimension of the intersection of the SAR antenna (3dB one-way attenuation) cone with a sphere of radius average_planetary_radius.

RAD_EMISSIVITY_PARTIAL [PDS-GEO-MGN] REAL <km**-1>
The rad_emissivity_partial element provides the value of the partial derivative of surface_emissivity with respect to average_planetary_radius.

RAD_FLAG2_GROUP [PDS-GEO-MGN] INTEGER
Additional flag fields (unused).

RAD_FLAG_GROUP [PDS-GEO-MGN] INTEGER
The RAD_FLAG_GROUP element identifies the following flag fields.
RR_GEOC=0x0001
Geometry values have been corrected for ephemeris errors in the phase.
RR_RADC=0x0002
The average_planetary_radius value has been corrected by altimeter radius values.
RR_NOS1=0x0004
sar_average_backscatter[0] value missing.
RR_NOS2=0x0008
sar_average_backscatter[1] value missing.
RR_BAD=0x0010
The elements brightness_temperature, average_planetary_radius, planet_reading_system_temp, assumed_warm_sky_temperature, rad_receiver_system_temp, surface_emission_temperature, and surface_emissivity, and surface_temperature should be ignored.
RR_CAL=0x0020
The spacecraft is operating in its 'radiometric calibration' mode, in which the SAR boresight is pointed away from the planet. The rad_footprint_latitude and rad_footprint_longitude fields contain the boresight latitude and longitude in the inertial (J2000) coordinate system, not in VBF85.
RR_NRAD=0x0040
The average_planetary_radius value could not be estimated from the topography model.
RR_RAD2=0x0080

This record was created under software version 2 or higher, in which elements rad_emissivity_partial, surface_temperature, raw_rad_antenna_power, raw_rad_load_power, alt_skip_factor, alt_gain_factor, and alt_coarse_resolution are significant.

RAD_FOOTPRINT_LATITUDE [PDS-GEO-MGN] REAL <deg>
The rad_footprint_latitude (VBF85) element provides the value of the crust-fixed latitude, at rad_spacecraft_epoch_tdb_time, of the intersection of the antenna boresight and the planetary surface (a sphere of radius average_planetary_radius element).

RAD_FOOTPRINT_LONGITUDE [PDS-GEO-MGN] REAL <deg>
The rad_footprint_longitude (VBF85) element provides the crust-fixed longitude, at rad_spacecraft_epoch_tdb_time, of the intersection of the antenna boresight and the planetary surface (a sphere of radius average_planetary_radius).

RAD_FOOTPRINTS [PDS-GEO-MGN] INTEGER
The footprints element provides the value of the number of Standard Format Data Units in a specific orbit's radiometry data file.

RAD_NUMBER [PDS-GEO-MGN] INTEGER
The rad_number element provides the value of the number assigned by the MSPF (Multimission SAR Processing Facility) SAR processor (from C-BIDR) to the burst header that contains the radiometer measurement referenced by this element. This is performed on every other burst, so rad_number will usually increase by 2 between records.

RAD_PARTIALS_GROUP [PDS-GEO-MGN] REAL
The rad_partials_group element provides the value of the partials of the rad_footprint_latitude, the rad_footprint_longitude, and the average_planetary_radius elements with respect to the rad_spacecraft_position_vector and rad_spacecraft_velocity_vector elements.

RAD_RECEIVER_SYSTEM_TEMP [PDS-GEO-MGN] REAL <K>
The rad_receiver_system_temp element provides the value of the receiver input radiometer reading, converted to equivalent noise temperature. This is the difference between raw_rad_antenna_power and raw_rad_load_power, converted to equivalent noise temperature and compensated for changes in receiver gain and temperature.

RAD_SPACECRAFT_EPOCH_TDB_TIME [PDS-GEO-MGN] REAL
The rad_spacecraft_epoch_tdb_time element provides the value of the ephemeris time at which the radiometry measurement was made.

RAD_SPACECRAFT_POSITION_VECTOR [PDS-GEO-MGN] REAL <km>
The rad_spacecraft_position_vector element provides the value of the spacecraft position at rad_spacecraft_epoch_tdb_time, relative to the Venus center of mass, expressed in inertial coordinates in the J2000 coordinate system.

RAD_SPACECRAFT_VELOCITY_VECTOR [PDS-GEO-MGN] REAL <km/s>
The rad_spacecraft_velocity_vector element provides the value of the spacecraft velocity at rad_spacecraft_epoch_tdb_time, relative to the Venus center of mass, expressed in inertial coordinates in the J2000 coordinate system.

RADIAL_RESOLUTION [PDS-RINGS] REAL <km>
The radial_resolution element indicates the nominal radial distance over which changes in ring properties can be detected within a data product.

Note: this value may be larger than the radial_sampling_interval value, since many data products are over-sampled.

RADIAL_SAMPLING_INTERVAL [PDS-RINGS] REAL <km>
The radial_sampling_interval element indicates the average radial spacing between consecutive points in a ring profile. In practice, this may be somewhat smaller than the radres element because the profile may be over-sampled.

RADIANCE_SCALING_FACTOR REAL(0, 999999)
The radiance_scaling_factor element provides the constant value by which a stored radiance is multiplied.

Note: Expressed as an equation: true_radiance_value = radiance_offset + radiance_scaling_factor * stored_radiance_value. Use of this element is discouraged in favor of the more general scaling_ factor.

RANGE_SHARP_ECHO_PROFILE [PDS-GEO-MGN] INTEGER
The range_sharp_echo_profile element provides the value of the power vs. time echo profile, at half-baud (0.21 microsecond) intervals, assembled from up to 16 frequency components, each shifted in time so as to align their rising edges. This profile yields the best estimate of the two-way echo time, and hence the value of the derived_planetary_radius element.

RANGE_SHARP_FIT [PDS-GEO-MGN] REAL
The range_sharp_fit element provides the value of the parameter which measures the correlation between the observed range_sharp_echo_profile and the theoretical template best_range_sharp_model_tmplt elements.

RANGE_SHARP_LOOKS [PDS-GEO-MGN] INTEGER
The range_sharp_looks element provides the value of the number of equivalent looks of statistically independent measurements of echo profile that were summed to produce the values for the range_sharp_echo_profile element.

RANGE_SHARP_PROF_CORRS_INDEX [PDS-GEO-MGN] INTEGER
The range_sharp_prof_corrs_index element provides the value of the index of the element in range_sharp_echo_profile that corresponds to the first element in best_range_sharp_model_tmplt [0] . The indices start at zero.

RANGE_SHARP_SCALING_FACTOR [PDS-GEO-MGN] REAL <km**2>
The range_sharp_scaling_factor element provides the value of the conversion factor for the best_range_model_tmplt and the range_sharp_echo_profile element that multiplies the integer array of the best_range_model_tmplt and range_sharp_echo_profile elements to yield their physical values, expressed as specific radar cross-sections in units of km**2.

RATIONALE_DESC CHARACTER
The rationale_desc element describes the rationale for performing a particular observation.

RAW_RAD_ANTENNA_POWER [PDS-GEO-MGN] REAL
The raw_rad_antenna_power element provides the value of the radiometer noise power when the receiver is connected to the SAR antenna. It is corrected for systematic errors resulting from leakage of the altimeter signal.

RAW_RAD_LOAD_POWER [PDS-GEO-MGN] REAL
The raw_rad_load_power element provides the value of the radiometer noise power when the receiver is connected to a load at a known temperature. It is averaged over as many as 10 successive measurements and corrected for systematic errors resulting from leakage of the altimeter signal.

RECEIVED_PACKETS INTEGER
The received_packets element provides the total number of telemetry packets which constitute a reconstructed data product.

RECEIVER_DESCRIPTION [PDS-RINGS] CHARACTER
The receiver_description element describes a given receiving instrument.

RECEIVER_ID [PDS-RINGS] CHARACTER(12)
The receiver_id element provides an abbreviated name or acronym which identifies a receiving instrument. It is used for experiments that have both transmitting and receiving instruments, in which case the instrument_id element refers to the transmitter.

RECEIVER_NAME [PDS-RINGS] CHARACTER(60)
The receiver_name element provides the unique full name of a receiving instrument. It is used for experiments that have both transmitting and receiving instruments, in which case the instrument_name element refers to the transmitter.

RECEIVER_NOISE_CALIBRATION [PDS-GEO-MGN] REAL <km**2>
The receiver_noise_calibration element provides the value of a measure of the altimeter noise background, obtained from the pulse- compressed altimeter signals by the mgmtac phase of the altimetry and radiometry data reduction program.

RECORD_BYTES INTEGER
The record_bytes element indicates the number of bytes in a physical file record, including record terminators and separators.

Note: In the PDS, the use of record_bytes, along with other file-related data elements is fully described in the Standards Reference.

RECORD_FORMAT CHARACTER(255)
The RECORD_FORMAT element contains a FORTRAN-style format description for reading an entire row of an ASCII/EBCDIC table, or an entire occurrence of an ASCII/EBCDIC COLLECTION. Example: RECORD_FORMAT = '(F8.3,1X,I5,2X,A12)'

Note: that this is an INPUT format only, and may not contain string constant expressions within the format.

RECORD_TYPE CHARACTER(20)
The record_type element indicates the record format of a file.

Note: In the PDS, when record_type is used in a detached label file it always describes its corresponding detached data file, not the label file itself. The use of record_type along with other file-related data elements is fully described in the PDS Standards Reference.

RECORDS INTEGER(1, 0)
The records data element identifies the number of physical records in a file or other data object.

REFERENCE_DESC CHARACTER
The reference_desc element provides a complete bibliographic citation for a published work. The format for such citations is that employed by the Journal of Geophysical Research (JGR). This format is described in the JGR, Volume 98, No. A5, Pages 7849-7850, May 1, 1993 under 'References'. Data suppliers may also refer to recent issues of the Journal for examples of citations. Elements of a complete bibliographic citation must include, wherever applicable, author(s) or editor(s), title, journal name, volume number, page

range and publication date (for journal article citations), or page range, publisher, place of publication, and publication date (for book citations).

REFERENCE_KEY_ID CHARACTER(20)
The reference_key_id element provides the catalog with an identifier for a reference document. Additionally, it may be used in various catalog descriptions, for example in data_set_desc, as a shorthand notation of a document reference.

The reference_key_id element is composed according to the following guidelines:

1. if there is an author for the publication, the general rule is:

REFERENCE_KEY_ID = <author's last name><year><letter>, where

<author's last name> is a maximum of 15 characters,
and may need to be truncated.

<year> is 4 characters for the year published.

<letter> is optional but consists of one character used to distinguish
multiple papers by the same author(s) in the same year.

The following variations apply:

a. If there is one author:
<author's last name><year>

Example value: SCARF1980

b. If there are two authors:
<first author's last name>&<second author's last name><year>

Example value: SCARF&GURNETT1977

c. If there are three or more authors:
<first author's last name>ETAL<year>

Example value: GURNETTETAL1979

d. If one author has the same last name as another:
<author's last name>,<author's first initial>
<year published>

Example value: FREUD,A1935

e. If the same author(s) published more than one paper in the same year:

<author's last name><year><letter> or
<first author's last name>&<second author's last name><year><letter> or
<first author's last name>ETAL<year><letter>

Example values: SCARF1980A
SCARF&GURNETT1977B

. In cases where an initial reference has been catalogued and published on an Archive medium and subsequent references for the same author and same year are needed at a later date, the following rule applies:

Leave the original reference as is, and add a letter to the subsequent references starting with the letter 'B' since the original reference will now be assumed to have an implicit 'A'. For example: PFORD1991, PFORD1991B.

Note that if the initial reference has only been catalogued and not yet published, then it can be modified such that the 'A' is explicit, i.e. PFORD1991A.

2. If there is no author for the publication, the general rule is:

REFERENCE_KEY_ID = <journal name><document identification> where

<journal name> is a maximum of 10 characters, and may need to be abbreviated
<document identification> is a maximum of 10 characters. This id may consist of a volume number, and/or document or issue number, and/or year of ublication.

Example values: SCIENCEV215N4532
JGRV88
JPLD-2468

REFERENCE_LATITUDE REAL(-90, 90) <deg>
The reference_latitude element provides the new zero latitude in a rotated spherical coordinate system that was used in a given map_projection_type.

REFERENCE_LONGITUDE REAL(-180, 360)<deg>
The reference_longitude element defines the zero longitude in a rotated spherical coordinate system that was used in a given map_projection_type.

REFERENCE_OBJECT_NAME CHARACTER(60)
The reference_object_name element identifies the point, vector, or plane used as the origin from which an angle or a distance is measured. As an example, the reference object could be the center of a given planet (a point), the spacecraft z_axis (a vector) or the equatorial plane.

REFERENCE_RADIAL_RESOLUTION [PDS-RINGS] REAL <km>
The reference_radial_resolution element specifies a reference radial resolution to which a ring occultation data set may be reprocessed. It is used to specify a standard radial resolution so that the noise properties of different data products may be more reliably compared. The values of the parameters lowest_detectable_opacity, highest_detectable_opacity and scaled_noise_level depend on this value.

REFERENCE_TARGET_NAME CHARACTER(30)
The reference_target_name element provides the name of the target body being used as the reference to help define a particular vector_component_id. For example, the RJ\$ vector component is defined with the spacecraft as the reference target.

REFLECTANCE_SCALING_FACTOR REAL(0, 1)
The reflectance_scaling_factor element identifies the conversion factor from DN to reflectance.

REGION_DESC CHARACTER
The region_desc element describes a particular region of a planetary surface, indicating its historical significance, identifying major geological features and providing other descriptive information.

REGION_NAME CHARACTER(30)
The region_name element identifies a region of a planetary surface. In many cases, the name of a region derives from the major geologic features found within the region.

REGISTRATION_DATE [PDS-CN] DATE
The registration_date element provides the date as of which an individual is registered as an authorized user of the PDS system.

Formation rule: YYYY-MM-DD

REMOTE_NODE_PRIVILEGES_ID [PDS-CN] CHARACTER(20)
The remote_node_priviledges_id element identifies the systems at a remote node (or nodes) which a user is priviledged to access.

REPETITIONS INTEGER(2, 0)
The repetitions data element within a data object such as a container, indicates the number of times that data object recurs. See also: items.

Note: In the PDS, the data element ITEMS is used for multiple occruuences of a single object, such as a column. REPETITIONS is used for multiple occurrences of a repeating group of objects, such as a container. For fuller explanation of the use of these data elements, please refer to the PDS Standards Reference.

REQUEST_DESC [PDS-CN] CHARACTER
The request_desc element describes a user's request for support.

REQUEST_TIME [PDS-CN] TIME
The request_time element provides the date (and time, where appropriate) at which a user's request was received by the Customer Support function.

REQUIRED_ELEMENT_SET [PDS-CN] CHARACTER(30)
The required_element_set element identifies the data elements that are mandatory members of a defined object.

Note: In the PDS, the data elements listed in this set must be approved for inclusion in the data dictionary.

REQUIRED_FLAG [PDS-CN] CHARACTER(1)
The required_flag data element indicates whether a data element or object is needed for inclusion in a system or process.

Note: In the PDS, required_flag is used in data dictionary tables to indicate whether a data element or object is a required or optional component of a data object.

REQUIRED_MEMORY_BYTES INTEGER

The required_memory_bytes element indicates the amount of memory, in bytes, required to run the subject software.

REQUIRED_OBJECT_SET [PDS-CN] CHARACTER(30)
The required_object_set element identifies the ODL objects that are mandatory members of a defined object.

REQUIRED_STORAGE_BYTES CHARACTER(12)
The required_storage_bytes element provides the number of bytes required to store an uncompressed file. This value may be an approximation and is used to ensure enough disk space is available for the resultant file.

Note: For Zip file labels, this keyword provides the total size of all the data files in the Zip file after being uncompressed. For the software inventory template, this is often the size of the uncompressed distribution tar file.

RESEARCH_TOPIC_DESC CHARACTER
The research_topic_desc element describes the topic of scientific research identified by the research_topic_name element.

RESEARCH_TOPIC_NAME CHARACTER(60)
The research_topic_name element provides the name of a topic of scientific research.

RESOLUTION_DESC [PDS-CN] CHARACTER
The resolution_desc element describes the resolution of and the approach used to resolve a user's request for support.

RESOLUTION_TIME [PDS-CN] TIME
The resolution_time element provides the date (and time, where appropriate) as of which a user's request is resolved.

RESOURCE_ID [DIS] CHARACTER(40)
The resource_id element provides an unique indentifier for the resource.

RESOURCE_KEYVALUE [DIS] CHARACTER(30)
The resource_keyvalue element identifies targets, missions, instrument hosts, and instrument names associated with the data set.

RESOURCE_SIZE [DIS] REAL <MB>
The resource_size element provides the size in megabytes of the data set.

RESOURCE_TYPE [DIS] CHARACTER(30)
The resource_type element provides the type of the data set.

RETICLE_POINT_DECLINATION REAL(-90, 90) <deg>
The reticle_point_declination element refers to the declination of the principle points of the camera.

Note: For the Clementine cameras the principle points are defined as the upper left pixel of the camera (line 1,sample 1), the upper right pixel (line 1, last sample), lower left (last line, sample 1), and lower right (last line, last sample).

RETICLE_POINT_LATITUDE REAL(-90, 90) <deg>

The reticle_point_latitude element provides the latitude of the surface intercept points of the principle points of the camera.

Note: For the Clementine cameras the principle points are defined as the upper left pixel of the camera (line 1,sample 1), the upper right pixel (line 1, last sample), lower left (last line, sample 1), and lower right (last line, last sample).

RETICLE_POINT_LONGITUDE REAL(0, 360) <deg>
The reticle_point_longitude element provides the longitude of the surface intercept points of the principle points of the camera.

Note: For the Clementine cameras the principle points are defined as the upper left pixel of the camera (line 1,sample 1), the upper right pixel (line 1, last sample), lower left (last line, sample 1), and lower right (last line, last sample).

RETICLE_POINT_NUMBER CHARACTER(1)
The reticle_point_number element provides the number of an image reticle point, as follows: 1 upper left, 3 - upper right, 5 - middle, 7 - lower left, 9 - lower right.

RETICLE_POINT_RA REAL(0, 360) <deg>
The reticle_point_ra element refers to the right ascension of the principle points of the camera.

Note: For the Clementine cameras the principle points are defined as the upper left pixel of the camera (line 1,sample 1), the upper right pixel (line 1, last sample), lower left (last line, sample 1), and lower right (last line, last sample).

REVOLUTION_NUMBER INTEGER
The revolution_number element identifies the number of the observational pass of a spacecraft around a target body.

Note: The Clementine Mission used this element in place of orbit_number because orbit number changes half way through the observational pass over the Moon and would not be an ideal parameter when interrogating the data set. The revolution number equals orbit number at the start of the observational pass.

REVOLUTION_PERIOD REAL <d>
The revolution_period element provides the time period of revolution of a solar system object about its spin axis.

RICE_OPTION_VALUE INTEGER(2, 4096)
The rice_option_value element is a RICE compressor specific variable providing the number of options used by compression.

Note: Information about RICE compression is available in JPL Document 91-D, November 15, 1991, 'Some Practical Universal Noiseless Coding Techniques, Part III.'

RICE_START_OPTION INTEGER(0, 4095)
The rice_start_option element is a RICE compressor specific variable that identifies the start option.

Note: Information about RICE compression is available in JPL Document 91-D, November 15, 1991, 'Some Practical Universal Noiseless Coding Techniques, Part III.'

RIGHT_ASCENSION REAL(0, 360) <deg>

The right_ascension element provides the right ascension value. Right_ascension is defined as the arc of the celestial equator between the vernal equinox and the point where the hour circle through the given body intersects the Earth's mean equator (reckoned eastward). See declination.

RING_EVENT_START_TIME [PDS-RINGS] TIME
The ring_event_start_time element indicates the starting instant of a data product as measured at the ring plane. This element differs from the observation start time because it allows for light travel time.

RING_EVENT_STOP_TIME [PDS-RINGS] TIME
The ring_event_stop_time element indicates the stopping instant of a data product as measured at the ring plane. This element differs from the observation stop time because it allows for light travel time.

RING_EVENT_TIME [PDS-RINGS] TIME
The ring_event_time element indicates the instant at which a data product has been acquired as measured at the ring plane. This element differs from the observation instant because it allows for light travel time.

RING_LONGITUDE [PDS-RINGS] REAL(0, 360) <deg>
The ring_longitude element specifies the inertial longitude of a ring feature relative to the prime meridian. In planetary ring systems, the prime meridian is the ascending node of the planet's invariable plane on the Earth's mean equator of J2000. Longitudes are measured in the direction of orbital motion along the planet's invariable plane to the ring's ascending node, and thence along the ring plane.

Note: The invariable plane of a planet is equivalent to its equatorial plane for every ringed planet except Neptune.

RING_OBSERVATION_ID [PDS-RINGS] CHARACTER(60)
The ring observation id uniquely identifies a single experiment or observation (image, occultation profile, spectrum, etc.) within a rings-related data set. This is the common id by which data are identified within the Rings Node catalog. It describes the smallest quantity of data that can be usefully cataloged or analyzed by itself. Note that a single observation may be associated with multiple data products (e.g. raw and calibrated versions of an image). Note also that a single data product may be associated with multiple observations (e.g. a single WFPC2 image file containing four different images). A ring observation id is constructed as follows: p/type/host/inst/time/... where p is a single-letter planet id (one of J, S, U, or N); type is IMG for images, OCC for occultation profile, etc.; host is the instrument host id, inst is the instrument id; time is the observation time as a date or instrument clock count; further information identifying the observation can then be appended as appropriate. Examples are:
J/IMG/VG2/ISS/20693.01/N J/IMG/VG2/ISS/20693.02/W S/IMG/HST/WFPC2/1995-08-10/U2TF020B/PC1 U/OCC/VG2/RSS/1986-01-24/S U/OCC/VG2/RSS/1986-01-24/X N/OCC/VG2/PPS/1989-08-25/SIGMA_SGR

RING_OCCULTATION_DIRECTION [PDS-RINGS] CHARACTER(20)
The ring_occultation_direction element indicates the radial direction of a ring occultation track.

RING_RADIUS [PDS-RINGS] REAL <km>
The ring_radius element indicates a radial location within a planetary ring system. Radii are measured from the center of the planet along the nominal ring plane.

RING_SYSTEM_SUMMARY CHARACTER
The ring_system_summary element provides a brief and general description of the rings or ring_like features associated with a particular solar system body.

ROLE_DESC CHARACTER

The role_desc element describes the role of an individual during his or her association with a particular institution.

Note: The term 'role' is a more specific characterization of the individual's activities than is 'specialty' (see the specialty_name element).

ROTATION_DIRECTION CHARACTER(30)
The rotation_direction element provides the direction of rotation as viewed from the north pole of the 'invariable plane of the solar system', which is the plane passing through the center of mass of the solar system and perpendicular to the angular momentum vector of the solar system. The value for this element is PROGRADE for counter -clockwise rotation, RETROGRADE for clockwise rotation and SYNCHRONOUS for satellites which are tidally locked with the primary. Sidereal_rotation_period and rotation_directio n_type are unknown for a number of satellites, and are not applicable (N/A) for satellites which are tumbling.

ROTATIONAL_ELEMENT_DESC CHARACTER
The rotational_element_desc element describes the standard used for the definition of a planet's pole orientation and prime meridian. The description defines the right ascension and the declination values used to define the planet pole, and the spin angle value of the planet referenced to a standard time (typically EME1950 or J2000 time is used). Periodically, the right ascension, declination, and spin values of the planets are updated by the IAU/IAG/COOSPAR Working Group On Cartographic Coordinates and Rotational Elements because an unambiguous definition of a planet's coordinate system requires these values.

ROW_BYTES INTEGER(1, 0)
The row_bytes element represents the number of bytes in each data object row.

Note: In the PDS, in labels for tables, the value of row_bytes includes terminators, separators, and delimiters unless spares are used. For spares at the beginning of a row, the keyword row_prefix_bytes may be used. For spares at the end of a row, row_suffix_bytes may be used. See the Standards Reference, TABLE object for more information.

ROW_PREFIX_BYTES INTEGER
The row_prefix_bytes element indicates the number of bytes prior to the start of the data content of each row of a table. The value must represent an integral number of bytes.

ROW_PREFIX_STRUCTURE CHARACTER(120)
The row_prefix_structure element indicates a pointer to a file that defines the structure of the row prefix bytes. See also: file_name

Note: In the PDS this data element is obsolete. It is kept in the data dictionary for historical purposes to allow data validation tools to function. According to current standards, the structures of prefix and suffix data are illustrated through the use of the table object.

ROW_SUFFIX_BYTES INTEGER
The row_suffix_bytes element indicates the number of bytes following the data at the end of each row. The value must be an integral number of bytes.

ROW_SUFFIX_STRUCTURE CHARACTER(120)
The row_suffix_structure element indicates a pointer to a file that defines the structure of the ROW_SUFFIX_BYTES. See also: file_name

Note: In the PDS this data element is obsolete. It is kept in the data dictionary for historical purposes to allow data validation tools to function. According to current standards, the structures of prefix and suffix data are illustrated through the use of the table object.

ROWS INTEGER
The rows element represents the number of rows in a data object.

Note: In PDS, the term 'rows' is synonymous with 'records'. In PDS attached labels, the number of rows is equivalent to the number of file_records minus the number of label_records, as indicated in the file_object definition.

SAMPLE_BIT_MASK NON DECIMAL
The sample_bit_mask element identifies the active bits in a sample.

Note: In the PDS, the domain of sample_bit_mask is dependent upon the currently-described value in the sample_bits element and only applies to integer values. For an 8-bit sample where all bits are active the sample_bit_mask would be 2#11111111#.

SAMPLE_BITS INTEGER(1, 64)
The sample_bits element indicates the stored number of bits, or units of binary information, contained in a line_sample value.

SAMPLE_DISPLAY_DIRECTION CHARACTER(6)
The SAMPLE_DISPLAY_DIRECTION element is the preferred orientation of samples within a line for viewing on a display device. The default is right, meaning samples are viewed from left to right on the display. See also LINE_DISPLAY_DIRECTION.

Note: The image rotation elements such as TWIST_ANGLE, CELESTIAL_NORTH_CLOCK_ANGLE, and BODY_POLE_CLOCK_ANGLE are all defined under the assumption that the image is displayed in its preferred orientation.

SAMPLE_FIRST_PIXEL INTEGER
The sample_first_pixel element provides the sample index for the first pixel that was physically recorded at the beginning of the image array.

Note: In the PDS, for a fuller explanation on the use of this data element in the Image Map Projection Object, please refer to the PDS Standards Reference.

SAMPLE_LAST_PIXEL INTEGER
The sample_last_pixel element provides the sample index for the last pixel that was physically recorded at the end of the image array.

Note: In the PDS, for a fuller explanation on the use of this data element in the Image Map Projection Object, please refer to the PDS Standards Reference.

SAMPLE_PROJECTION_OFFSET REAL <pixel>
The sample_projection_offset element provides the sample offset value of the map projection origin position from line and sample 1,1 (line and sample 1,1 is considered the upper left corner of the digital array).

Note: that the positive direction is to the right and down.

SAMPLE_TYPE CHARACTER(30)

The sample_type element indicates the data storage representation of sample value.

SAMPLING_DESC CHARACTER
The sampling_desc element describes how instrument parameters are sampled within an instrument or a section of an instrument. Generally, this includes information on the timing of samples and how they are taken as a function of energy, frequency, wavelength, position, etc.

SAMPLING_FACTOR REAL
The sampling_factor element provides the value N, where every Nth data point was kept from the original data set by selection, averaging, or taking the median.

Note: When applied to an image object, the single value represented in sampling_factor applies to both the lines and the samples. When applied to a table object, the value applies only to the rows.

SAMPLING_PARAMETER_INTERVAL REAL
The sampling_parameter_interval element identifies the spacing of points at which data are sampled and at which a value for an instrument or dataset parameter is available. This sampling interval can be either the original (raw) sampling or the result of some resampling process. For example, in 48-second magnetometer data the sampling interval is 48. The sampling parameter (time, in the example) is identified by the sampling_parameter_name element.

SAMPLING_PARAMETER_NAME CHARACTER(40)
The sampling_parameter_name element provides the name of the parameter which determines the sampling interval of a particular instrument or dataset parameter. For example, magnetic field intensity is sampled in time increments, and a spectrum is sampled in wavelength or frequency.

SAMPLING_PARAMETER_RESOLUTION REAL
The sampling_parameter_resolution element identifies the resolution along the sampling parameter axis. For example, spectral data may be sampled every 0.0005 cm in wavelength, but the smallest resolvable width of a feature could be 0.001 cm. In this example, the sampling parameter resolution would be 0.001.

Note: The unit element identified the unit of measure of the sampling parameter resolution.

SAMPLING_PARAMETER_UNIT CHARACTER(60)
The sampling_parameter_unit element specifies the unit of measure of associated data sampling parameters.

SAR_AVERAGE_BACKSCATTER [PDS-GEO-MGN] REAL <dB>
The sar_average_backscatter element provides the values of a pair of running averages of SAR image pixel values, sar_average_backscatter[0] taken from pixels lying westward of the antenna boresight, and sar_average_backscatter[1] taken from pixels lying to the east of it.

SAR_FOOTPRINT_SIZE [PDS-GEO-MGN] REAL <km>
The sar_footprint_size element provides the value of the approximate diameter of the surface footprint represented by the SAR backscatter values which are provided by the sar_average_backscatter element.

SATELLITE_TIME_FROM_CLST_APR CHARACTER(20)
The SATELLITE_TIME_FROM_CLST_APR element provides the time from closest approach to the nearest satellite. This element can be represented with a negative value, (e.g. before the satellite encounter). This element should not be confused with TIME_FROM_CLOSEST_APPROACH which is the from closest approach to the central body.

SC_SUN_POSITION_VECTOR REAL <km>

The sc_sun_position_vector element indicates the x-, y-, and z- components of the position vector from observer to sun, center expressed in J2000 coordinates, and corrected for light time and stellar aberration, evaluated at epoch at which image was taken.

SC_SUN_VELOCITY_VECTOR REAL <km>
The sc_sun_velocity_vector element indicates the x-, y-, and z- components of the velocity vector of sun relative to observer, expressed in J2000 coordinates, and corrected for light time, evaluated at epoch at which image was taken.

SC_TARGET_POSITION_VECTOR REAL <km>
The sc_target_position_vector element indicates the x-, y-, z- components of the position vector from observer to target center expressed in J2000 coordinates, and corrected for light time and stellar aberration, evaluated at epoch at which image was taken.

SC_TARGET_VELOCITY_VECTOR REAL <km>
The sc_target_velocity_vector element indicates the x-, y-, z- components of the velocity vector of target relative to observer, expressed in J2000 coordinates, and corrected for light time, evaluated at epoch at which image was taken.

SCALED_IMAGE_HEIGHT REAL <km>
The scaled_image_height element provides the height on the target surface of the projection of an image onto the surface. This is the distance on the surface between intercept points 2 (upper middle) and 8 (lower middle).

SCALED_IMAGE_WIDTH REAL <km>
The scaled_image_width element provides the width on the target surface of the projection of an image onto the surface. This is the distance on the surface between intercept points 4 (middle left) and 6 (middle right).

SCALED_NOISE_LEVEL [PDS-RINGS] REAL
The scaled_noise_level element provides an indicator of the dynamic range within a ring occultation data set. It specifies the ratio of the RMS noise level in the data to the amplitude difference between an unobstructed signal (corresponding to opacity = 0) and a completely obstructed signal (corresponding to infinite opacity): (RMS noise)/(unobstructed signal - fully obstructed signal). The value is computed assuming the data has been re-processed to the radial resolution specified by the reference_radial_resolution element.

SCALED_PIXEL_HEIGHT REAL <km>
The scaled_pixel_height element provides the scaled height of a pixel at a given reticle point within an image. Scaled pixel height is defined as the height on the surface of the target of the projection of a pixel onto the surface.

SCALED_PIXEL_WIDTH REAL <km>
The scaled_pixel_width element provides the scaled width of a pixel at a given reticle point within an image. Scaled pixel width is defined as the width on the surface of the target of the projection of a pixel onto the surface.

SCALING_FACTOR CONTEXT DEPENDENT
The scaling factor element provides the constant value by which the stored value is multiplied. See also: offset.

Note: Expressed as an equation: true value = offset value + (scaling factor x stored value). In PDS Magellan altimetry and radiometry labels, the scaling_factor data element is defined as the value of the conversion factor for the best_non_range_sharp_model_tpt and the non_range_sharp_echo_prof element that multiplies the integer array elements of the best_non_range_sharp_model_tpt and the non_range_sharp_echo_prof to yield their physical values, expressed as equivalent radar cross-sections in units of km**2.

SCAN_MODE_ID CHARACTER(8)
The scan_mode_id element identifies one of several internal rates for data acquisition by an instrument.

SCAN_RATE [PDS-GEO-VL] REAL(0, 360) <b/s>
SCAN_RATE is the measured data rate at which an instrument scanned an object while acquiring a data frame.

SCET_START_TIME [JPL-AMMOS-SPECIFIC] TIME
The scet_start_time element is defined as an alias for start_time for Magellan mission operations files in AMMOS.

SCET_STOP_TIME [JPL-AMMOS-SPECIFIC] TIME
The scet_stop_time element is defined as an alias for stop_time for Magellan mission operations files only.

SCIENTIFIC_OBJECTIVES_SUMMARY CHARACTER
The scientific_objectives_summary element explains the science data_gathering purposes for a particular type of observation, for a particular observation sequence or for which an instrument was designed.

SCIENTIST_FUNDING_ID CHARACTER(12)
The scientist_funding_id is the NASA code which supplies funding to the scientist.

SCLK_START_VALUE [JPL-AMMOS-SPECIFIC] CHARACTER
The sclk_start_value element is an alias for spacecraft_ clock_start_count which is used only by AMMOS-Magellan mission operations data files.

SCLK_STOP_VALUE [JPL-AMMOS-SPECIFIC] CHARACTER
The sclk_stop_value element is an alias for spacecraft_ clock_stop_count which is used only in AMMOS-Magellan mission operations files.

SECOND_STANDARD_PARALLEL REAL(-90, 90) <deg>
Please refer to the definition for first_standard_parallel element to see how second_standard_parallel is defined.

SECTION_ID CHARACTER(6)
The section_id element provides a unique identifier for a section of an instrument. An instrument section is a logical view of an instrument's operating functions, and is distinct from the instrument's physical composition. Essentially, instrument sections are a device to describe the instrument's functioning in terms of a set of 'black boxes', which are themselves described parametrically by the data which are produced. Various operational parts of the instrument, such as detectors, filters, and electronics, are considered to participate by providing data from a section, but have no direct physical relationship with the section, since the section is not a physical object. Instrument modes consist of sets of sections, and the physical implementation of a mode is the union of those physical units which are processing data for each section participating in the mode.

SEF_CREATION_TIME [JPL-AMMOS-SPECIFIC] TIME
This element is unique to the AMMOS-MGN KEY_TIMES data file. It defines the time of creation of the source sequence file.

SELECTION_QUERY_DESC [PDS-CN] CHARACTER
The selection_query_desc element provides a query statement, in Standard Query Language (SQL) or another query language, which constrains the set of items requested in an order.

SENSITIVITY_DESC CHARACTER
The sensitivity_desc element provides a textual description of the minimum response threshold of a detector.

SEQ_ID [JPL-AMMOS-SPECIFIC] CHARACTER(30)
The seq_id element provides an identification of the spacecraft sequence associated with the given product.

SEQUENCE_NUMBER INTEGER
The sequence_number element indicates a number designating the place occupied by an item in an ordered sequence.

SEQUENCE_SAMPLES INTEGER
The sequence_samples element specifies the number of samples in a given observation sequence.

SEQUENCE_TABLE_ID CHARACTER(20)
The sequence_table_id element provides a unique identifier for the sequence table that was used for a set of observations. The sequence table provides the image acquistion sequences that specify the camera and filter image sequencing. It indicates the order in which cameras are shuttered and the order for which filters are used.

SEQUENCE_TITLE CHARACTER(60)
The sequence_title element provides the title assigned to a particular observation sequence during planning or data processing.

SFDU_FORMAT_ID CHARACTER(12)
The sfdu_format_id element provides the 12-character Standard Format Data Unit (SFDU) identification for a particular set of data.

SFDU_LABEL_AND_LENGTH [PDS-GEO-MGN] CHARACTER(20)
The SFDU_label_and_length element identifies the label and length of the Standard Format Data Unit (SFDU).

SHUTTER_EFFECT_CORRECTION_FLAG CHARACTER(5)
The shutter_effect_correction_flag element indicates whether or not a shutter effect correction was applied to the image. The shutter effect correction involves the removal from the image of the shutter, or fixed-pattern.

Note: For MPF, this correction was applied to the image on board the spacecraft, before the image was transmitted to Earth.

SHUTTER_MODE_ID CHARACTER(20)
The shutter_mode_id element identifies the state of an imaging instrument's shutter during image acquisition.

Note: the instrument shutter mode affects the radiometric properties of the camera. Example values: (VOYAGER) NAONLY - narrow angle camera shuttered only, WAONLY - wide angle camera shuttered only, BOTSIM - both cameras shuttered simultaneously, BSIMAN - BOTSIM mode followed by NAONLY, BODARK - shutter remained closed for narrow and wide angle camera, NADARK - narrow angle read out without shuttering, WADARK - wide angle read out without shuttering.

SHUTTER_OFFSET_FILE_NAME CHARACTER(20)
The shutter_offset_file_name element identifies the file that contains the corrections for discrepancies between commanded and actual shutter times. Because the shutter blades travel in a vertical direction, offsets in actual exposure are a function of image line number.

SIDEREAL_ROTATION_PERIOD REAL <d>
The sidereal_rotation_period element indicates the time required for an object to complete one full rotation about its primary axis with respect to the stars. See rotation_direction.

SIGNAL_QUALITY_INDICATOR [PDS-GEO-MGN] REAL <dB>
The signal_quality_indicator element provides a measure of the signal-to- noise-ratio of the measurement of the derived_thresh_detector_index value. It is the ratio between the sum of the 10 successive values of range_sharp_echo_profile, starting 10 values after the element numbered by the derived_thresh_detector_index element value, to the 10 successive values of range_sharp_echo_profile, starting 20 values before the element numbered by the derived_thresh_detector_index element value. This ratio is expressed in decibels.

SITE_ID [JPL-AMMOS-SPECIFIC] CHARACTER
Short identifier for each CMD site. See CMD Subsystem doc.

SITE_NAME [JPL-AMMOS-SPECIFIC] CHARACTER
The site_name element is used to describe the spacecraft commanding site for AMMOS CMD subsystem. Values include MASTER, MCCC, SEQTRAN, GSOC.

SLANT_DISTANCE REAL <km>
The slant_distance element provides a measure of the distance from an observing position (e.g., a spacecraft) to a point on a target body. If not specified otherwise, the target point is assumed to be at the center of the instrument field of view.

SLIT_POSITION_ANGLE [PDS-SBN] REAL
The SLIT_POSITION_ANGLE element describes the orientation of the slit of a spectrograph as projected on the sky. This position angle is measured on the inside of the celestial sphere from the direction of the celestial North Pole in a counter-clockwise direction (eastward) toward the long axis of the spectrograph. This angle is defined such that 0 degrees points north and 90 degrees points east. North Pole is defined in J2000 coordinates.

SLOPE_FILE_NAME CHARACTER(20)
The SLOPE_FILE_NAME element provides the file containing corrections for variances in responsivity (shading) across the field-of-view of an imaging sensor.

SMEAR_AZIMUTH REAL(0, 360) <deg>
The smear_azimuth element indicates the direction in which an image was smeared. The values of this angle increment in a clockwise direction from a horizontal reference line.

SMEAR_MAGNITUDE REAL(0, 800) <pixel>
The smear_magnitude element indicates how far an image was smeared during an exposure.

SOFTWARE_ACCESSIBILITY_DESC [PDS-CN] CHARACTER
The software_access_desc element provides a description of the software's accessibility related to the software_type element.

SOFTWARE_DESC CHARACTER

The software_desc element describes the functions performed by the data processing software. If the subject software is a program library, this element may provide a list of the contents of the library.

SOFTWARE_FLAG CHARACTER(1)
The software_flag element is a yes-or-no flag which indicates whether documented software exists which can be used to process a data set.

SOFTWARE_ICON_FILE_SPEC CHARACTER
The software_icon_file_spec element supplies the name of an image file in GIF format that contains the icon that represents a particular tool.

SOFTWARE_ID CHARACTER(16)
The software_id element is a short-hand notation for the software name, typically sixteen characters in length or less (e.g., tbtool,lablib3).

SOFTWARE_LICENSE_TYPE CHARACTER(20)
The software_license_type element indicates the licensing category under which this software falls.

SOFTWARE_NAME CHARACTER(60)
The software_name element identifies data processing software such as a program or a program library.

SOFTWARE_PURPOSE CHARACTER(40)
The software_purpose element describes the intended use of the software.

SOFTWARE_RELEASE_DATE DATE
The software_release_date element provides the date as of which a program was released for use.

Formation rule: YYYY-MM-DD

SOFTWARE_TYPE [PDS-CN] CHARACTER(30)
The software_type element associates a PDS software type with the processing software.

SOFTWARE_VERSION_ID CHARACTER(20)
The software_version_id element indicates the version (development level) of a program or a program library.

SOLAR_DISTANCE REAL <km>
The solar_distance element provides the distance from the center of the sun to the center of a target body.

SOLAR_ELONGATION [PDS-SBN] REAL <deg>
The angle between the line of sight of observation and the direction of the Sun.

Note: For IRAS: The line of sight of observation is the boresight of the telescope as measured by the satellite sun sensor.

SOLAR_ELONGATION_SIGMA [PDS-SBN] REAL <deg>
The standard deviation of the solar elongation determined from variations in values from the spacecraft sun-sensor.

SOLAR_LATITUDE REAL(-90, 90) <deg>
The solar_latitude element provides the subsolar latitude value. Subsolar latitude is defined as the latitude of the point on the target body surface that would be intersected by a straight line from the center of the sun to the center of the target body.

SOLAR_LONGITUDE REAL(0, 360) <deg>
The solar_longitude element provides the value of the angle between the body_Sun line at the time of interest and the body_Sun line at the vernal equinox. This provides a measure of season on a target body, with values of 0 to 90 degrees representing northern spring, 90 to 180 degrees representing northern summer, 180 to 270 degrees representing northern autumn and 270 to 360 degrees representing northern winter. For IRAS: the geocentric ecliptic longitude (B1950) of the Sun at the start of a scan.

SOURCE_DATA_SET_ID CHARACTER(40)
The source_data_set_id element identifies a set of data which was used to produce the subject data set, data product or SPICE kernel.

SOURCE_FILE_NAME CHARACTER(120)
The source_file_name element provides the name of a specific file that resides within the same data directory and contributes data to a given product. See also: source_product_id.

SOURCE_LINE_SAMPLES INTEGER(1, 0)
The source_line_samples element indicates the total number of samples in the image from which a rectangular sub-image has been derived.

Note: In the PDS, if source_line_samples appears in the image object, it should be greater than the value of line_samples, to indicate that the image described by lines and line_samples is a sub-image of the original (source) image.

SOURCE_LINES INTEGER(1, 0)
The source_lines element indicates the total number of lines in the image from which a rectangular sub-image has been derived.

Note: If source_lines appears in the image object, it should be greater than the value of lines, to indicate that the image described by lines and line_samples is a sub-image of the original (source) image.

SOURCE_NAME [PDS-CN] CHARACTER(60)
The source_name element supplies the name of the proponent of the data element or object. (For example, PDS CN/J.S.Hughes)

SOURCE_PRODUCT_ID CHARACTER(40)
The source_product_id data element identifies a product used as input to create a new product. The source_product_id may be based on a file name. See also: product_id.

SOURCE_SAMPLE_BITS INTEGER(1, 64)
The source_sample_bits element indicates the number of bits, or units of binary information, that make up a sample value in the source file used to produce a sub-image.

SPACECRAFT_ALTITUDE REAL <km>
The spacecraft_altitude element provides the distance from the spacecraft to a reference surface of the target body measured normal to that surface.

SPACECRAFT_CLOCK_CNT_PARTITION [PDS-IMG-GLL] INTEGER
The spacecraft_clock_cnt_partition element indicates the clock partition active for the SPACECRAFT_CLOCK_START_COUNT and SPACECRAFT_CLOCK_STOP_COUNT elements.

SPACECRAFT_CLOCK_START_COUNT CHARACTER(30)

The spacecraft_clock_start_count element provides the value of the spacecraft clock at the beginning of a time period of interest.

Note: In the PDS, sclk_start_counts have been represented in the following ways:
Voyager - Flight Data Subsystem (FDS) clock count (floating point 7.2)
Mariner 9 - Data Automation Subsystem,
Mariner 10 - FDS - spacecraft_clock

SPACECRAFT_CLOCK_STOP_COUNT CHARACTER(20)
The spacecraft_clock_stop_count element provides the value of the spacecraft clock at the end of a time period of interest.

SPACECRAFT_DESC CHARACTER
The spacecraft_desc element describes the characteristics of a particular spacecraft. This description addresses the complement of instruments carried, the onboard communications and data processing equipment, the method of stabilization, the source of power and the capabilities or limitations of the spacecraft design which are related to data-taking activities. The description may be a synopsis of available mission documentation.

SPACECRAFT_ID [JPL-AMMOS-SPECIFIC] CHARACTER(6)
The spacecraft_id element provides a synonym or mnemonic for the name of a spacecraft which is uniquely associable with the spacecraft name.

Note: Within AMMOS only, this element is also an alias for dsn_spacecraft_num. This interpretation is not portable to the PDS.

SPACECRAFT_NAME CHARACTER(60)
The spacecraft_name element provides the full, unabbreviated name of a spacecraft. See also: spacecraft_id, instrument_host_id.

SPACECRAFT_OPERATING_MODE_ID CHARACTER(10)
The spacecraft_operating_mode_id element identifies a particular configuration in which the spacecraft takes and returns data.

SPACECRAFT_OPERATIONS_TYPE CHARACTER(60)
The spacecraft_operation_type element provides the type of mode of operation of a spacecraft. Example values: SUN-SYNCHRONOUS, GEOSTATIONARY, LANDER, ROVER, FLYBY.

SPACECRAFT_SOLAR_DISTANCE REAL <km>
The spacecraft_solar_distance element provides the distance from the spacecraft to the center of the sun. See also: solar_distance.

SPECIAL_INSTRUCTION_ID_NUMBER [PDS-CN] INTEGER
The special_instruction_id_number element is a unique key that is used to identify a particular set of special instructions in a user's order.

SPECIALTY_DESC CHARACTER
The specialty_desc element describes an individual's area of specialization during his or her association with a particular institution.

Note: 'specialty' is a more general characterization of the individual's activities than is 'role'. See role_desc.

SPECTRUM_INTEGRATED_RADIANCE REAL <J/(m**2)/s>
The spectrum_integrated_radiance element provides the radiance value derived from integration across an entire spectrum.

SPECTRUM_NUMBER INTEGER
The spectrum_number element provides the number which identifies a particular spectrum.

SPECTRUM_SAMPLES INTEGER
The spectrum_samples element provides the number of samples which form a given spectrum.

SPICE_FILE_NAME [PDS-IMG-GLL] CHARACTER(180)
The spice_file_name element provides the names of the SPICE files used in processing the data. For Galileo, the SPICE files are used to determine navigation and lighting information.

SQL_FORMAT [PDS-CN] CHARACTER(15)
The sql_format element supplies the SQL data type used when the data element is declared as a column in a table in a relational data base management system.

SQRT_COMPRESSION_FLAG CHARACTER(5)
The sqrt_compression_flag element indicates whether or not square root compression was applied to the image.

Note: For MPF, this compression was performed onboard the lander, prior to transmission of the data to Earth. It involved the compression of the pixels from 12 bits down to 8 bits.

SQRT_MAXIMUM_PIXEL INTEGER
The sqrt_maximum_pixel element provides the maximum pixel value in an image prior to square root compression.

SQRT_MINIMUM_PIXEL INTEGER
The sqrt_minimum_pixel element provides the minimum pixel value in an image prior to square root compression.

STANDARD_DEVIATION REAL
The standard_deviation element provides the standard deviation of the DN values in the image array.

STANDARD_VALUE_NAME [PDS-CN] CHARACTER(60)
The standard_value_name element provides a value for a particular data element.

STANDARD_VALUE_SET [PDS-CN] CHARACTER(60)
The standard_value_set element supplies the list of standard values that may be assigned to a data element. The standard_value_set may be explicitly specified via this data element or may be implicitly derived from GENERAL_DATA_TYPE, VALID_MINIMUM and VALID_MAXIMUM data elements.

STANDARD_VALUE_SET_DESC [PDS-CN] CHARACTER
The standard_value_set_desc element is used to supply information about or descriptions of individual members of the standard value set.

STANDARD_VALUE_TYPE [PDS-CN] CHARACTER(10)
The standard_value_type element indicates the type of standard value which exists for a PDS data element. Example values: static - values for the data element exist in a defined and fixed set of standard values, dynamic - values for the data element must either exist in a set of defined standard values or be approved by peer review for inclusion to the set of standard values, suggested - values for the data element must exist

in a set of defined standard values or may be added to the set of standard values with no requirement for peer review, range - values for the data element must fall within a default range specified with the minimum and maximum elements, formation - values for the data element must conform to a formation rule.

STAR_DESCRIPTION [PDS-RINGS] CHARACTER
The star_description element describes the properties of a particular star. Information provided may include, for example, the star's type, V and K magnitudes, catalog references, alternative names, etc.

STAR_DIAMETER [PDS-RINGS] REAL <arcsecond>
The star_diameter element indicates the angular diameter of a star.

STAR_NAME [PDS-RINGS] CHARACTER(40)
The star_name element provides the identifying name of star, including the catalog name if necessary. Examples include 'sigma Sgr' and 'SAO 123456' (for star number 123456 in the Smithsonian Astrophysical Observatory catalog).

STAR_WINDOW [PDS-IMG-GLL] INTEGER
The star_window element provides the location and size of up to 5 star areas (number of image areas defined by STAR_WINDOW_COUNT) in an edited Optical Navigation (OPNAV) image. The location and size of each image area is defined by four numbers: starting line, starting sample, number of lines, number of samples (the origin of the image coordinate system is at line, sample=1,1 for the upper-left corner with samples increasing to the right and lines increasing down). This element is Galileo Solid State Imaging- specific.

STAR_WINDOW_COUNT [PDS-IMG-GLL] INTEGER(0, 5)
Galileo Solid State Imaging-specific. The star_window_count element indicates the number of star areas, defined in the STAR WINDOW keyword, in an edited Optical Navigation (OPNAV) image.

START_AZIMUTH [PDS-GEO-VL] REAL(0, 360) <deg>
The START_AZIMUTH is the angular distance from a fixed reference position at which an image or observation starts. Azimuth is measured in a spherical coordinate system, in a plane normal to the principal axis. Azimuth values increase according to the right hand rule relative to the positive direction of the principal axis of the spherical coordinate system.

START_BIT INTEGER(1, 0)
The start_bit element identifies the location of the first bit of a bit field data object such as a BIT_COLUMN or BIT_ ELEMENT. Bits are numbered from left to right, counting fro 1. The start_bit value assumes that any necessary byte re-ordering has already been performed.

START_BYTE INTEGER(1, 0)
The start_byte element in a data object identifies the location of the first byte of the object, counting from 1. For nested objects, the start_byte value is relative to the start of the enclosing object.

START_DELIMITING_PARAMETER [PDS-CN] REAL
The start_delimiting_parameter element provides the beginning parameter value which, together with the stop_delimiting_parameter value, delimits a subset of data.

START_JULIAN_DATE INTEGER
The start_julian_date element provides the Julian date of the start of a time period of interest. Julian date is defined as an integer count of days elapsed since noon, January 1, 4713 B.C. Thus, the Julian date of noon January 1, 1960 (A.D.) is 2436935.

START_ORBIT_NUMBER REAL
The start_orbit_number data element provides the the lowest revolution orbit number that contributed data to a given data product.

START_PAGE_NUMBER [PDS-CN] CHARACTER(8)
The start_page_number element identifies the beginning page number of a reference document which appears (as an article, for example) in a journal, report or other published work.

START_RESCAN_NUMBER [PDS-GEO-VL] INTEGER
The START_RESCAN_NUMBER is the scan line number at which the rescan mode begins. The rescan mode consists of scanning either vertically or horizontally repeatedly at the same azimuth.

START_SAMPLE_NUMBER INTEGER
The start_sample_number element identifies the lowest of the sample numbers which define the orbit sequence portion located within a given bin.

START_SEQUENCE_NUMBER CHARACTER(2)
The start_sequence_number element provides the number of the first sequence in a revolution. See sequence_number.

START_TIME TIME
The start_time element provides the date and time of the beginning of an event or observation (whether it be a spacecraft, ground-based, or system event) in UTC system format.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

START_TIME_BASE REAL <s>
The start_time_base element provides the elapsed time from the beginning of each frame to the beginning of a particular mode.

START_TIME_FROM_CLOSEST_APRCH CHARACTER(20)
The start_time_from_closest_approach element provides the time from spacecraft periapsis at the beginning of a sequence. See time_from_closest_approach.

STATUS_NOTE [PDS-CN] CHARACTER
The status_note element supplies a log of modifications made to an element or object definition. The required entry includes <Version_Id / Date / Author / Desc>. Example format: \t 1.0 1990-03-28 DET New Data_Element Definition The description can continue for several lines.

STATUS_TYPE [PDS-CN] CHARACTER(13)
The status_type element indicates one of a fixed number of statuses that can describe a particular data element or object. Examples: PENDING, APPROVED.

STOP_AZIMUTH [PDS-GEO-VL] REAL(0, 360) <deg>
The STOP_AZIMUTH is the angular distance from a fixed reference position at which an image or observation stops. Azimuth is measured in a spherical coordinate system, in a plane normal to the principal axis. Azimuth values increase according to the right hand rule relative to the positive direction of the principal axis of the spherical coordinate system.

STOP_DELIMITING_PARAMETER [PDS-CN] REAL
The stop_delimiting_parameter element provides the ending parameter value which, together with the start_delimiting_parameter value, delimits a subset of data.

STOP_ORBIT_NUMBER REAL
The stop_orbit_number data element provides the the highest revolution orbit number that contributed data to a given data product.

STOP_SAMPLE_NUMBER INTEGER
The stop_sample_number element identifies the highest of the sample numbers which define the orbit sequence portion located within a given bin.

STOP_SEQUENCE_NUMBER CHARACTER(2)
The stop_sequence_number element provides the number of the last sequence in a revolution. See sequence_number.

STOP_TIME TIME
The stop_time element provides the date and time of the end of an observation or event (whether it be a spacecraft, ground-based, or system event) in UTC system format.

Formation rule: YYYY-MM-DDThh:mm:ss[.fff]

STOP_TIME_FROM_CLOSEST_APRCH CHARACTER(20)
The stop_time_from_closest_approach element provides the time from spacecraft periapsis at the end of a sequence. See time_from_closest_approach.

STORAGE_LEVEL_ID [PDS-CN] CHARACTER(10)
The storage_level_id element identifies a particular storage level. For example, if the complete pathname for a stored data file is 'JPLPDS::DISK$USER1: [JJEANS.UNIVERSE] DESCRPTR.LIS' then the storage_level_id element value will be one of the following: JPLPDS, DISK$USER1, JJEANS, UNIVERSE, DESCRPTR.LIS.

STORAGE_LEVEL_NUMBER [PDS-CN] INTEGER
The storage_level_number element describes the position of a given storage level within the overall storage hierarchy of an entire data set, data product, or SPICE kernel. As many storage levels are documented as are necessary to identify the data. Level 0 indicates the highest storage level, which successively higher level numbers indicate successively lower levels in the storage hierarchy.

STORAGE_LEVEL_TYPE [PDS-CN] CHARACTER(10)
The storage_level_type element identifies the type of storage structure to which a given storage_level_number refers. Example values: DATABASE, PHOTOGRAPHIC FRAME NUMBER, TAPE REEL NUMBER, VAX COMPUTER, VAX DIRECTORY, VAX FILE, VAX SUBDIRECTORY.

STRETCH_MAXIMUM INTEGER
The stretch_maximum element provides the sample value in a data object which should normally be mapped to the highest display value available on an output device for optimum viewing. Sample values between stretch_minimum and stretch_maximum values are linearly interpolated over the dynamic range of the display device. If it is necessary to map the sample value to a value other than the highest display value (normally 255), the stretch_minimum is expressed as a sequence of values, where the first value represents the sample value in the data object and the second value represents the target output value to the display device. For example:

stretch_maximum = 120

indicates that sample values greater than 120 should be mapped to 255 on the output device.

stretch_minimum = (120,230)

indicates that sample values greater than 120 should be mapped to 230 on the output device.

The STRETCHED_FLAG keyword indicates whether the stretch has already been applied to the data (stretched_flag = true) or whether it needs to be applied (stretched_flag = false).

STRETCH_MINIMUM INTEGER
The stretch_minimum element provides the sample value in a data object which should normally be mapped to the highest display value available on an output device for optimum viewing. Sample values between stretch_minimum and stretch_maximum values are linearly interpolated over the dynamic range of the display device. If it is necessary to map the sample value to a value other than the highest display value (normally 255), the stretch_minimum is expressed as a sequence of values, where the first value represents the sample value in the data object and the second value represents the target output value to the display device. For example:

stretch_maximum = 120

indicates that sample values greater than 120 should be mapped to 255 on the output device.

stretch_minimum = (120,230)

indicates that sample values greater than 120 should be mapped to 230 on the output device.

The STRETCHED_FLAG keyword indicates whether the stretch has already been applied to the data (stretched_flag = true) or whether it needs to be applied (stretched_flag = false).

STRETCHED_FLAG CHARACTER(6)
The stretched_flag element indicates whether a data object has been stretched using the minimum_stretch and maximum_stretch parameters. A value of TRUE means that it has been stretched and a value of FALSE means it has not been stretched.

SUB_LIGHT_SOURCE_AZIMUTH REAL(0, 360) <deg>
The sub_light_source_azimuth element provides the value of the angle between the line from the center of an image to the sub-light-source point and a horizontal reference line (in the image plane) extending from the image center to the middle right edge of the image.

SUB_LIGHT_SOURCE_LATITUDE REAL(-90, 90) <deg>
The sub_light_source_latitude element provides the latitude of the sub-light-source point. The sub-light-source point is the point on a body that lies under the light source.

SUB_LIGHT_SOURCE_LONGITUDE REAL(0, 360) <deg>
The sub_light_source_longitude element provides the longitude of the sub-light-source point. The sub-light-source point is the point on a body that lies under the light source.

SUB_OBJECT_NAME [PDS-CN] CHARACTER(12)
The sub_object_name element provides the template object name for a child object name subordinate to a parent object name. This object name is used by the catalog bulk loading software to establish a hierarchy between template objects. For full definitions of the terms object and sub-object, please refer to PDS standards documentation.

SUB_SOLAR_AZIMUTH REAL(0, 360) <deg>

The sub_solar_azimuth element provides the value of the angle between the line from the center of an image to the subsolar point and a horizontal reference line (in the image plane) extending from the image center to the middle right edge of the image. The values of this angle increase in a clockwise direction.

SUB_SOLAR_LATITUDE REAL(-90, 90) <deg>
The sub_solar_latitude element provides the latitude of the subsolar point. The subsolar point is that point on a body's reference surface where a line from the body center to the sun center intersects that surface.

SUB_SOLAR_LONGITUDE REAL(-180, 360)<deg>
The sub_solar_longitude element provides the longitude of the subsolar point. The subsolar point is that point on a body's reference surface where a line from the body center to the sun center intersects that surface.

Note: The coordinate_system_type data element should be used in conjuncction with this data element.

SUB_SPACECRAFT_AZIMUTH REAL(0, 360) <deg>
The sub_spacecraft_azimuth element provides the value of the angle between the line from the center of an image to the subspacecraft point and a horizontal reference line (in the image plane) extending from the image center to the middle right edge of the image. The values of this angle increase in a clockwise direction.

SUB_SPACECRAFT_LATITUDE REAL(-90, 90) <deg>
The sub_spacecraft_latitude element provides the latitude of the subspacecraft point. The subspacecraft point is that point on a body which lies directly beneath the spacecraft.

SUB_SPACECRAFT_LINE REAL
The sub_spacecraft_line element is the image line containing the sub-spacecraft point. The subspacecraft point is that point on a body's reference surface where a line from the spacecraft center to the body center intersects the surface.

SUB_SPACECRAFT_LINE_SAMPLE REAL
The sub_spacecraft_line_sample element is the image sample coordinate containing the supspacecraft point. The subspacecraft point is that point on a body's reference surface where a line from the spacecraft center to the body center intersects the surface.

SUB_SPACECRAFT_LONGITUDE REAL(-180, 360)<deg>
The sub_spacecraft_longitude element provides the longitude of the subspacecraft point. The subspacecraft point is that point on a body's reference surface where a line from the spacecraft center to the body center intersects the surface.

Note: The coordinate_system_type data element should be used in conjunction with this data element.

SUFFIX_BASE [ISIS] REAL
The xxx_suffix_base element of a 1-3 dimensional qube object (where xxx is an axis_name of the qube) provides the sequence of base values of the suffix items along the xxx axis. The length of the sequence is specified by the axes element, and its order must correspond to the order of names in the xxx_suffix_names element. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_BASE. Each base value, together with the corresponding multiplier, describes the scaling performed on a 'true' data value to compute the value stored in the suffix location. It also defines the method for recovering the 'true' value:
'true' value = base + multiplier * stored value
In ISIS practice, the value of the base is 0.0 for real items, since scaling is not usually necessary for floating point data.

Note: Base and multiplier correspond directly to the data elements OFFSET and SCALING_FACTOR.

SUFFIX_BYTES [ISIS] INTEGER(4, 4)
The suffix_bytes element identifies the allocation in bytes of each suffix data value. It is the unit of the dimensions specified by the suffix_items element. In the current build of ISIS, suffix_bytes must always be 4. This means that all suffix items (unlike core items) occupy 4 bytes, even though in some cases the defined suffix data value may be less than 4 bytes in length.

SUFFIX_HIGH_INSTR_SAT [ISIS] CONTEXT DEPENDENT
The xxx_suffix_high_instr_sat element of a 1-3 dimensional qube object (where xxx is an axis name of the qube) provides the sequence of high instrument saturation values of the suffix items along the xxx axis. The length of the sequence is specified by the axes element, and its order must correspond to the order of names in the xxx_suffix_names element. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_HIGH_INSTR_SAT.

Each high instrument saturation value identifies the special value whose presence indicates the measuring instrument was saturated at the high end. This value must be algebraically less than the value of the xxx_suffix_valid_minimum element. For Standard ISIS Qubes, a value been chosen by ISIS convention. The general data type of the value is determined by the corresponding xxx_suffix_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If core_item_type is real, the value will be hardware- specific (or rather floating-point-representation-specific) so that it may be specified exactly near the bottom of the allowable range of values. A non-decimal (hexadecimal) general data type is used for this purpose; e.g. 16#FFFCFFFF# for a VAX.

SUFFIX_HIGH_REPR_SAT [ISIS] CONTEXT DEPENDENT
The xxx_suffix_high_repr_sat element of a 1-3 dimensional qube object (where xxx is an axis name of the qube) provides the sequence of high representation saturation values of the suffix items along the xxx axis. The length of the sequence is specified by the axes element, and its order must correspond to the order of names in the xxx_suffix_names element. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_HIGH_REPR_SAT.

Each high representation saturation value identifies the special value whose presence indicates the true value cannot be represented in the chosen data type and length -- in this case being above the allowable range -- which may happen during conversion from another data type. This value must be algebraically less than the value of the xxx_suffix_valid_minimum element. For Standard ISIS Qubes, a value has been chosen by ISIS convention. The general data type of the value is determined by the corresponding xxx_suffix_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If the corresponding xxx_suffix_item_type is real, the value will be hardware-specific (or rather floating-point-representation-specific) so that it may be specified exactly near the bottom of the allowable range of values. A non-decimal (hexadecimal) general data type is used for this purpose; e.g. 16#FFFBFFFF# for a VAX.

SUFFIX_ITEM_BYTES [ISIS] INTEGER(1, 4)
The xxx_suffix_item_bytes element of a 1-3 dimensional qube object (where xxx is an axis_name of the qube) provides the sequence of sizes (in bytes) of the suffix items along the xxx axis. Though all items occupy the number of bytes specified by the suffix_bytes element, an item may be defined to be less than 4 bytes in length. The length of the sequence is specified by the axes element, and its order must correspond to the order of names in the xxx_suffix_names element. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_ITEM_BYTES

SUFFIX_ITEM_TYPE [ISIS] CHARACTER(30)
The xxx_suffix_item_type element of a 1-3 dimensional qube object (where xxx is an axis_name of the qube) provides the sequence of data types of the suffix items along the xxx axis. The length of the sequence is specified by the axes element, and its order must correspond to the order of names in the xxx_suffix_names element. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_ITEM_TYPE.

SUFFIX_ITEMS [ISIS] INTEGER(0, 512)
The suffix_items element provides the sequence of dimensions of the suffix areas of a qube data object. The suffix size of the most frequently varying axis is given first. The length of the sequence is specified by the axes element, and its order must correspond to the order of dimensions in the core_items element, and the order of names in the axis_name element. Each suffix dimension is measured in units of the suffix_bytes element. In a Standard ISIS Qube, suffix items along the SAMPLE, LINE and BAND axes correspond to 'sideplanes', 'bottomplanes' and 'backplanes', respectively, of the core of the qube.

SUFFIX_LOW_INSTR_SAT [ISIS] CONTEXT DEPENDENT
The xxx_suffix_low_instr_sat element of a 1-3 dimensional qube object (where xxx is an axis_name of the qube) provides the sequence of low instrument saturation values of the suffix items along the xxx axis. The length of the sequence is specified by the axes element, and its order must correspond to the order of names in the xxx_suffix_names element. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_LOW_INSTR_SAT.

Each low instrument saturation value identifies the special value whose presence indicates the measuring instrument was saturated at the low end. This value must be algebraically less than the value of the xxx_suffix_valid_minimum element. For Standard ISIS Qubes, a value been chosen by ISIS convention. The general data type of the value is determined by the corresponding xxx_suffix_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If core_item_type is real, the value will be hardware-specific (or rather floating-point-representation-specific) so that it may be specified exactly near the bottom of the allowable range of values. A non-decimal (hexadecimal) general data type is used for this purpose; e.g. 16#FFFDFFFF# for a VAX.

SUFFIX_LOW_REPR_SAT [ISIS] CONTEXT DEPENDENT
The xxx_suffix_low_repr_sat element of a 1-3 dimensional qube object (where xxx is an axis_name of the qube) provides the sequence of low representation saturation values of the suffix items along the xxx axis. The length of the sequence is specified by the axes element, and its order must correspond to the order of names in the xxx_suffix_names element. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_LOW_REPR_SAT.

Each low representation saturation value identifies the special value whose presence indicates the true value cannot be represented in the chosen data type and length -- in this case being below the allowable range -- which may happen during conversion from another data type. This value must be algebraically less than the value of the xxx_suffix_valid_minimum element. For Standard ISIS Qubes, a value has been chosen by ISIS convention. The general data type of the value is determined by the corresponding xxx_suffix_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If the corresponding xx_suffix_item_type is real, the value will be hardware-specific (or rather floating-point-representation- specific) so that it may be specified exactly near the bottom of the allowable range of values. A non-decimal (hexadecimal) general data type is used for this purpose; e.g. 16#FFFEFFFF# for a VAX.

SUFFIX_MULTIPLIER [ISIS] REAL

The xxx_suffix_multiplier element of a 1-3 dimensional qube object (where xxx is an axis_name of the qube) provides the sequence of multipliers of the suffix items along the xxx axis. The length of the sequence is specified by the axes element, and its order must correspond to the order of names in the xxx_suffix_names element. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_MULTIPLIER. Each multiplier, together with the corresponding base value, describes the scaling performed on a 'true' data value to compute the value stored in the suffix location. It also defines the method for recovering the 'true' value:

'true'_value = base + multiplier * stored_value

In ISIS practice, the value of the multiplier is 1.0 for real items, since scaling is not usually necessary for floating point data.

SUFFIX_NAME [ISIS] CHARACTER(30)
The xxx_suffix_name element of a 1-3 dimensional qube object (where xxx is an axis_name of the qube) provides the sequence of names of the suffix items along the xxx axis. The length of the sequence is specified by the axes element, and its order must correspond to the order of dimensions in the core_items and suffix_items elements. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_NAME. Band suffix planes (backplanes) are commonly used to store geometry and other information corresponding at each pixel to the pixels of the core planes, such as latitude and longitude.

SUFFIX_NULL [ISIS] CONTEXT DEPENDENT
The xxx_suffix_null element of a 1-3 dimensional qube object (where xxx is an axis name of the qube) provides the sequence of null values of the suffix items along the xxx axis. The length of the sequence is specified by the axes element, and its order must correspond to the order of names in the xxx_suffix_names element. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_NULL.

Each null value identifies the special value whose presence indicates missing data. This value must be algebraically less than the value of the xxx_suffix_valid_minimum element. For Standard ISIS Qubes, the null value is chosen to be the algebraically smallest value allowed by the xxx_suffix_item_type and xxx_suffix_item_bytes elements. The general data type of the null value is determined by the corresponding xxx_suffix_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If core_item_type is real, the value will be hardware-specific (or rather floating-point-representation-specific) so that it may be specified exactly at the bottom of the allowable range of values. A non-decimal (hexadecimal) general data type is used for this purpose; e.g. 16#FFFFFFFF# for a VAX.

Note: The SUFFIX_NULL element corresponds directly to the PDS standard data element MISSING.

SUFFIX_UNIT [ISIS] CHARACTER(30)
The xxx_suffix_unit element of a 1-3 dimensional qube object (where xxx is an axis_name of the qube) provides the sequence of scientific units of the suffix items along the xxx axis. The length of the sequence is specified by the axes element, and its order must correspond to the order of names in the xxx_suffix_names element. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_UNIT.

SUFFIX_VALID_MINIMUM [ISIS] CONTEXT DEPENDENT
The xxx_suffix_valid_minimum element of a 1-3 dimensional qube object (where xxx is an axis_name of the qube) provides the sequence of valid minima of the suffix items along the xxx axis. The length of the sequence is specified by the axes element, and its order must correspond to the order of names in the xxx_suffix_names element. In a Standard ISIS Qube, the axis names are restricted to SAMPLE, LINE and

BAND. For the BAND axis, for example, the element will be named BAND_SUFFIX_VALID_MINIMUM.

Suffix item values algebraically less than the corresponding valid minimum are reserved for special values indicating missing data or various types of invalid data. The general data type of this element is determined by the xxx_suffix_item_type element. If the latter is integer or unsigned integer, the general data type is integer. If xxx_suffix_item_type is real, the general data type is non-decimal (hexadecimal, e.g. 16#FFEFFFFF#) so that a hardware-specific special value may be specified exactly.

SUPPORT_REQUEST_DATE [PDS-CN] DATE
The support_request_date element provides the date that a support request was taken by the PDS operator.

SUPPORT_REQUEST_DESC [PDS-CN] CHARACTER
The support_request_desc element provides a textual description of an official PDS support request as recorded by the PDS operator after talking with a PDS user about a problem with the PDS.

SUPPORT_REQUEST_NO [PDS-CN] INTEGER
The support_request_number provides a computer assigned unique number given to each support request recorded by the Central Node PDS operator.

SUPPORT_RESOLUTION [PDS-CN] CHARACTER(60)
The support_resolution element provides the textual description of the resolution to a problem recorded by the PDS operator.

SUPPORT_RESOLUTION_DATE [PDS-CN] DATE
The support_resolution_date element provides the date that a support request was resolved by the PDS.

SUPPORT_STAFF_FULL_NAME [PDS-CN] CHARACTER(60)
The support_staff_name element provides the full name of the PDS person entering the support request information into the PDS. See also: full_name.

SURFACE_BASED_INST_METHOD CHARACTER(18)
The surface_based_inst_method element identifies the method used to calculate the surface based instrument pointing.

SURFACE_CLARITY_PERCENTAGE REAL(0, 100)
The surface_clarity_percentage element provides an estimate of the fraction of an image or observation of a surface which is unobscured (as by clouds). Surface_clarity_percentage is defined as the ratio of the unobscured area to the total observed area.

SURFACE_EMISSION_TEMPERATURE [PDS-GEO-MGN] REAL <K>
The surface_emission_temperature element provides the value of the temperature assumed for the planetary surface covered by the radiometer footprint, derived by correcting brightness_temperature for atmospheric emission and absorption.

SURFACE_EMISSIVITY [PDS-GEO-MGN] REAL
The surface_emissivity element provides the value of surface microwave emissivity, calculated by dividing (surface_emission_temperature - assumed_warm_sky_temperature) by (physical_surface_temperature - assumed_warm_sky_temperature).

SURFACE_GRAVITY REAL <m/s**2>
The surface_gravity element provides the average gravitational acceleration at the surface of a target body. Surface_gravity is computed from the mass and mean radius of the target body.

SURFACE_TEMPERATURE [PDS-GEO-MGN] REAL <K>
The surface_temperature element provides the value of the physical surface temperature of the radiometer footprint, calculated from average_planetary_radius and the project-adopted atmospheric model.

SYNODIC_ROTATION_PERIOD REAL <d>
The synodic_rotation_period element provides the time period required for a solar system object to complete one full rotation about its primary, returning to the same position in space relative to its primary.

SYSTEM_BULLETIN_DATE [PDS-CN] DATE
The system_bulletin_date element is the date and time when the PDS operator logged a PDS system bulletin.

SYSTEM_BULLETIN_DESC [PDS-CN] CHARACTER
The system_bulletin_desc element is the text of a PDS system bulletin.

SYSTEM_BULLETIN_ID [PDS-CN] INTEGER
The system_bulletin_id element is a unique integer that identifies a PDS system bulletin.

SYSTEM_BULLETIN_TYPE [PDS-CN] CHARACTER(25)
The system_bulletin_type element is a keyword that describes the type of bulletin displayed.

SYSTEM_CLASSIFICATION_ID [PDS-CN] CHARACTER(20)
The system_classification_id data element identifies a data element or object according to the data system that uses it. In this document, system_classification_id is an indexing mechanism for data element names, to allow them to be identified as either system-specific, or recommended for common use. See also: general_classification_type.

SYSTEM_EVENT_DATE [PDS-CN] DATE
The system_event_date element provides the beginning date of a PDS scheduled event.

SYSTEM_EVENT_USER_NOTE [PDS-CN] CHARACTER
The system_event_user_note element provides information about a system event. Example value: THE SYSTEM WILL BE DOWN FOR PREVENTATIVE MAINTENANCE FROM NOON UNTIL MIDNIGHT.

SYSTEM_EXPERTISE_LEVEL [PDS-CN] CHARACTER(10)
The system_expertise_level element identifies an individual's level of expertise in the use of the PDS capabilities.

TABLE_BL_NAME [PDS-CN] CHARACTER(12)
The table_bl_name element represents the data base tersename used by the loader software to map a template value to a column in a table. There exists a unique mapping for each template keyword=value occurrence identifies the data base column. The formulation of the tblblname is governed by rules and abbreviations as defined in the PDS Data Administration Plan document.

TABLE_DESC [PDS-CN] CHARACTER
The table_desc element provides the ascii text description for a table in the PDS data base.

TABLE_NAME [PDS-CN] CHARACTER(12)
The table_name element provides a unique name for a table in the PDS data base. All tables in the data base will have a name and a description.

TABLE_STORAGE_TYPE CHARACTER(60)
The table_storage_type element indicates the order of storage for entries in a table. For enhanced portability and ease of display, the default and recommended storage type for tables is row major.

TABLE_TYPE [PDS-CN] CHARACTER(1)
The table_type element denotes whether the table contains High Level Catalog data, Detailed Level Catalog Data (Image), Detailed Level Catalog (Fields and Particles) data, or system data. Examples: H, F, I, or S

TARGET_CENTER_DISTANCE REAL <km>
The target_center_distance element provides the distance between an instrument and the center of mass of the named target.

TARGET_DESC CHARACTER
The target_desc element describes the characteristics of a particular target.

TARGET_NAME CHARACTER(30)
The target_name element identifies a target. The target may be a planet, satellite, ring, region, feature, asteroid or comet. See target_type.

TARGET_PARAMETER_EPOCH TIME
The target_parameter_epoch element provides the reference epoch for the value associated with a particular target parameter, whose name is provided in the target_parameter_name element. The reference epoch is the date and time associated with measurement of a quantity which may vary with time. For example, the value provided for the obliquity of a planet will be given for a measurement taken at a specified time. That time will be referenced in the target_parameter_epoch element. See also target_parameter_value.

TARGET_PARAMETER_NAME CHARACTER(30)
The target_parameter_name element provides the name of a dynamic or physical parameter associated with a given target. This element may take as values only those names that are proper element names for the various dynamic and physical parameters cataloged as part of target information. Example values: BOND_ALBEDO, MEAN_SURFACE_TEMPERATURE, OBLIQUITY, ORBITAL_INCLINATION.

TARGET_PARAMETER_UNCERTAINTY CHARACTER(40)
The target_parameter_uncertainty element provides the numeric value of the uncertainty associated with the value given for a particular target parameter, whose name is provided in the associated target_parameter_name element. The uncertainty is expressed in the same units as the value of the parameter itself, and gives some measure of the provider's estimate of the reliability of a particular value stored in the catalog. See also target_parameter_value.

TARGET_PARAMETER_VALUE CHARACTER(40)
The target_parameter_value element provides the numeric value associated with a particular target parameter, whose name is provided in the associated target_parameter_name element. Each value provided is associated with a particular source, which is completely referenced in the associated data_source_desc. See also target_parameter_uncertainty, target_parameter_epoch.

TARGET_TYPE CHARACTER(20)
The target_type element identifies the type of a named target. Example values: PLANET, SATELLITE, RING, REGION, FEATURE, ASTEROID, COMET.

TASK_NAME CHARACTER(40)
The task_name element identifies the task with which an individual is or was affiliated during his or her association with a particular institution.

Note: 'task' affiliations are distinct from 'mission' affiliations.

TECHNICAL_SUPPORT_TYPE CHARACTER(12)
The technical_support_type element indicates the type of support provided for a piece of software. SOURCE_NAME = PDS CN/S. Hughes.

TELEMETRY_FORMAT_ID CHARACTER(3)
The TELEMETRY_FORMAT_ID element supplies a telemetry format code.

TELEPHONE_NUMBER CHARACTER(30)
The telephone_number element provides the area code, telephone number and extension (if any) of an individual or node. See also: fts_number.

TELESCOPE_DIAMETER REAL <m>
The telescope_diameter element provides the diameter of the primary mirror of a telescope.

TELESCOPE_F_NUMBER REAL(>=0.5)
The telescope_f_number element provides the value of the ratio of the focal length to the aperture of a telescope.

TELESCOPE_FOCAL_LENGTH REAL <m>
The telescope_focal_length element provides the total optical path distance from the first element of the optics to the focal point of a telescope.

TELESCOPE_ID CHARACTER(60)
The telescope_id element uniquely identifies a particular telescope.

TELESCOPE_LATITUDE [PDS-RINGS] REAL(-90, 90) <deg>
The telescope_latitude element indicates the planetographic latitude of a telescope site on the Earth's surface.

TELESCOPE_LONGITUDE [PDS-RINGS] REAL(-180, 180)<deg>
The telescope_longitude element indicates the longitude of a telescope site on the Earth's surface. East longitudes are positive and west longitudes are negative.

TELESCOPE_RESOLUTION REAL(0,3.14159)<rad>
The telescope_resolution element provides the achievable angular resolution of a telescope.

TELESCOPE_SERIAL_NUMBER CHARACTER(20)
The telescope_serial_number element provides the serial number of a telescope.

TELESCOPE_SITE_RADIUS [PDS-RINGS] REAL <km>
The telescope_site_radius element indicates the radial distance of a telescope site from the Earth's center.

TELESCOPE_T_NUMBER REAL(>=0.5)
The telescope_t_number element provides the effective f_number of a telescope.

Note: The t_number differs from the f_number due to losses in the optical system.

TELESCOPE_T_NUMBER_ERROR REAL
The telescope_t_number_error element indicates the error associated with the t_number value for a particular telescope.

TELESCOPE_TRANSMITTANCE REAL(0, 1)
The telescope_transmittance element provides the transmittance value for a telescope. Transmittance is defined as the ratio of transmitted to incident flux through the telescope.

TEMPERATURE_TRANSLATION_DESC CHARACTER
The temperature_translation_desc element provides the conversion necessary to translate an instrument's transmitted temperature reading to a value which is relative to a standard temperature scale.

TEMPLATE [PDS-CN] CHARACTER(30)
The template element provides the identifier that appears in a physical template header.

TEMPLATE_BL_NAME [PDS-CN] CHARACTER(12)
The template_bl_name element represents the data base terse name associated with a template keyword. This tersename is used during construction of templates to provide a reference to the keyword a full data element name rather than the terse representation. The formulation of the tmpltblname is governed by rules and abbreviations as defined in the PDS Data Administration Plan document.

TEMPLATE_NAME [PDS-CN] CHARACTER(60)
The template_name element provides the name of a template object used in the PDS system and the bulk loading software.

TEMPLATE_NOTE [PDS-CN] CHARACTER
The template_note element provides the textual description of the purpose for a template object as related to the data supplier. This description is distributed whenever a template is sent to a data supplier.

TEMPLATE_REVISION_DATE [PDS-CN] DATE
The template_revision_date element indicates the latest revision date for a template (i.e. 11/22/88).

TEMPLATE_STATUS [PDS-CN] CHARACTER(40)
The template_status element is updated by the loader software after certain events in the catalog loading process. The value of this field indicates the current status of a template or sub-template in the load process.

TEMPLATE_TYPE [PDS-CN] CHARACTER(12)
The template_type element provides a type or class of template object.

TEMPLATE_USE_INDICATOR [PDS-CN] CHARACTER(1)
The template_use_indicator element indicates whether or not template may recur within a set of templates.

TERSE_NAME [PDS-CN] CHARACTER(12)
The terse_name element supplies a twelve-character unique identifier for a data element and is an alternative to the thirty-character data element name. In the PDS, the terse name is an abbreviation of the data element name, according to the abbreviations documented in the Planetary Science Data Dictionary.

TEXT_FLAG [PDS-CN] CHARACTER(1)
The text_flag element indicates whether or not a data element contains variable-length textual information (i.e., a description, a note, or a summary).

THRESHOLD_COST [PDS-CN] INTEGER <us_dollar>
The threshold_cost element provides the maximum cost which is compared to the order item's calculated cost. When the threshold cost is exceeded, the order item is not accepted by the PDS order function.

TIME_FROM_CLOSEST_APPROACH CHARACTER(20)
The time_from_closest_approach element provides the time with respect to periapsis or closest approach.

TIME_RANGE_NUMBER [JPL-AMMOS-SPECIFIC] TIME
The time_range number is unique to AMMOS-MGN ephemeris files and identifies groups of time ranges in the catalog object.

TLM_CMD_DISCREPANCY_FLAG CHARACTER(5)
The tlm_cmd_discrepancy_flag element indicates whether or not discrepancies were found between the uplinked commands and the downlinked telemetry.

TOTAL_FOVS INTEGER
The total_fovs (fields-of-view) element indicates the total number of fields of view associated with a single section of an instrument.

TOTAL_RESCAN_NUMBER [PDS-GEO-VL] INTEGER
The TOTAL_RESCAN_NUMBER is the total number of rescan lines acquired.

TRANSFER_COMMAND_TEXT CHARACTER
The transfer_command_text element represents the complete command used to create a data volume, such as COPY or BACKUP for tape volumes. It should also include special flags that were used to perform the command (eg. tar -xvf).

TRUE_ANOMALY_ANGLE REAL(0, 360) <deg>
The true_anomaly_angle element provides the value of the angle between the line connecting an orbiting body and the body around which it is orbiting (its primary) and the line connecting the periapsis position and the primary. True_anomaly is measured in the orbiting body's orbital plane in the direction of motion from periapsis.

TRUTH_WINDOW [PDS-IMG-GLL] INTEGER <pixel>
Galileo Solid State Imaging-specific. Images can be edited so that only an image area or cut_out_window is compressed and transmitted to Earth. Within this cut_out_window there can be an image area or TRUTH_WINDOW of up to 96 X 96 pixels that will be transmitted with only lossless Huffman compression applied. The truth_window element indicates the location and size of this image area as defined by four numbers: starting line, starting sample, number of lines, number of samples (the origin of the image coordinate system is at line,sample=1,1 for the upper-left corner with samples increasing to the right and lines increasing down).

TUPLE_SEQUENCE_NUMBER [PDS-CN] INTEGER
The tuple_sequence_number element is used in all text tables where the ordering of the ASCII text rows is required. This element is used in all text type tables in the PDS data base.

TWIST_ANGLE REAL(0, 360) <deg>
The twist_angle element provides the angle of rotation about an optical axis relative to celestial coordinates. The RIGHT_ASCENSION, DECLINATION and TWIST_ANGLE elements define the pointing direction and orientation of an image or scan platform.

Note: The specific mathematical definition of TWIST_ANGLE depends on the value of the TWIST_ANGLE_TYPE element. If unspecified, TWIST_ANGLE_TYPE = GALILEO for Galileo data and TWIST_ANGLE_TYPE = DEFAULT for all other data. Note: This element bears a simple relationship to the value of CELESTIAL_NORTH_CLOCK_ANGLE. When TWIST_ANGLE_TYPE = DEFAULT, TWIST_ANGLE = (180 - CELESTIAL_NORTH_CLOCK_ANGLE) mod 360; when

TWIST_ANGLE_TYPE = GALILEO, TWIST_ANGLE = (270 - CELESTIAL_NORTH_CLOCK_ANGLE) mod 360.

TWIST_ANGLE_TYPE CHARACTER(10)
The twist_angle_type element determines the specific mathematical meaning of the element TWIST_ANGLE when it is used to specify the pointing of an image or scan platform. Allowed values are DEFAULT and GALILEO. If unspecified, the value is GALILEO for Galileo data and DEFAULT for all other data.
The three elements RIGHT_ASCENSION, DECLINATION and TWIST_ANGLE define the C-matrix, which transforms a 3-vector in celestial coordinates into a frame fixed to an image plane. Celestial coordinates refer to a frame in which the x-axis points toward the First Point of Aries and the z-axis points to the celestial pole; these coordinates are assumed to be in J2000 unless otherwise specified. Image plane coordinates are defined such that the x-axis points right, the y-axis points down, and the z-axis points along the camera's optic axis, when an image is displayed as defined by the SAMPLE_DISPLAY_DIRECTION and LINE_DISPLAY_DIRECTION elements.
For TWIST_ANGLE_TYPE = DEFAULT, the C-matrix is equal to
C-matrix = [T]3 [90-D]1 [R+90]3
= |-sinR cosT-cosR sinD sinT cosR cosT-sinR sinD sinT cosD sinT|
  | sinR sinT-cosR sinD cosT -cosR sinT-sinR sinD cosT cosD cosT|
  | cosR cosD   sinR cosD   sinD |
For TWIST_ANGLE_TYPE = GALILEO, the C-matrix is defined by
C-matrix = [T]3 [90-D]2 [R]3
= | sinR sinT+cosR sinD cosT cosR sinT+sinR sinD cosT -cosD cosT|
  |-sinR cosT-cosR sinD sinT cosR cosT-sinR sinD sinT   cosD sinT|
  | cosR cosD   sinR cosD   sinD |
Here the notation[X]n specifies a rotation about the nth axis by angle X (in degrees). R refers to right ascension, D to declination, and T to twist angle.

TWIST_OFFSET_ANGLE REAL(-90, 90) <deg>
The twist_offset_angle element provides the angle at which an instrument is mounted, measured perpendicular to the plane defined by the cone and cross-cone axes. See also cone_offset_angle and cross_cone_offset_angle.

UNCORRECTED_DISTANCE_TO_NADIR [PDS-GEO-MGN] REAL <km>
The uncorrected_distance_to_nadir element provides the 'raw' measurement of range-to-surface, obtained from the pulse-compressed altimeter signals by the MGMTAC phase of the altimetry and radiometry data reduction program.

UNCORRECTED_START_TIME TIME
The uncorrected_start_time element provides the time of the observation as sent down by the spacecraft. This time may be incorrect due to a software problem that existed onboard the spacecraft. The difference between the START_TIME and the UNCORRECTED_START_TIME is the estimated correction that was applied to the START_TIME during ground processing.

UNEVEN_BIT_WEIGHT_CORR_FLAG CHARACTER(3)
The uneven_bit_weight_corr_flag element is used to indicate whether a correction has been applied to adjust for uneven bit weighting of the analog-to-digital converter. In image processing, the correction is applied to every pixel in an image.

UNIT CHARACTER(40)
The unit element provides the full name or standard abbreviation of a unit of measurement in which a value is expressed. Example values: square meter, meter per second.

Note: A table of standard units representing those published by the Systeme Internationale appears in the 'Units of Measurement' section of the PSDD. (Please refer to the table of contents for its location.) The values in this table's 'Unit Name' column constitute the standard values for the data element UNIT.

UNIT_ID   CHARACTER(12)
The unit_id element indicates the common abbreviation or symbol for a unit of measure. Example: The unit KILOGRAM has the unit_id ‘kg’.

Note: A table of standard units, unit ids, and measured quantities including those publishes by the Systeme Internationale appears in the ‘Units of Measurement’ section of the PSDD. (Please refer to the table of contents for its location.) The values in this table's 'Symbol' column constitute the standard values for the data element unit_id.

UNKNOWN_CONSTANT   CONTEXT DEPENDENT
The unknown_constant element supplies the numeric value used to represent the figurative constant 'UNK'. 'UNK' (Unknown) is defined as indicating when values for a particular data element in a specific instance is permanently not known.

UPLOAD_ID   CHARACTER(60)
The upload_id element describes a spacecraft command set that is associated with the given data product.

USAGE_NOTE   [PDS-CN]   CHARACTER
The usage_note element provides the information about the use of a particular data element or object within a particular context.

USER_PRODUCT_ID   CHARACTER(30)
The user_product_id element provides an alternate logical file name constructed according to a producer-defined naming convention.

VALID_MAXIMUM   CONTEXT DEPENDENT
The valid_maximum data element represents the maximum value that is valid for a data object. Valid_minimum and valid_ maximum define the valid range of values for a data object, such as -90 to 90 for a column object containing latitude values.

Note: this element should appear in labels only between the 'OBJECT =' and 'END_OBJECT=' lines of an object with a specific data type.

VALID_MINIMUM   CONTEXT DEPENDENT
The valid_minimum data element represents the minimum value that is valid for a data object. Valid_minimum and valid_ maximum define the valid range of values for a data object, such as -90 to 90 for a column object containing latitude values.

Note: this element should appear in labels only between the 'OBJECT =' and 'END_OBJECT=' lines of an object with a specific data type.

VECTOR_COMPONENT_1   REAL
The vector_component_1 element provides the magnitude of the first component of a vector. The particular vector component being measured is identified by the vector_component_id_1 element.

VECTOR_COMPONENT_2   REAL
The vector_component_2 element provides the magnitude of the second component of a vector. The particular vector component being measured is identified by the vector_component_id_2 element.

VECTOR_COMPONENT_3 REAL
The vector_component_3 element provides the magnitude of the third component of a vector. The particular vector component being measured is identified by the vector_component_id_3 element.

VECTOR_COMPONENT_ID CHARACTER(8)
The vector_component_id element identifies a vector component without reference to a particular vector component value.

VECTOR_COMPONENT_ID_1 CHARACTER(8)
The vector_component_id_1 element identifies the first component of a vector. The magnitude of the first component of the vector is provided by the vector_component_1 element. Example value: RJ\$ (a radial distance).

VECTOR_COMPONENT_ID_2 CHARACTER(8)
The vector_component_id_2 element identifies the second component of a vector. The magnitude of the second component of the vector is provided by the vector_component_2 element. Example value: LATJ\$S3 (a latitude).

VECTOR_COMPONENT_ID_3 CHARACTER(8)
The vector_component_id_3 element identifies the third component of a vector. The magnitude of the third component of the vector is provided by the vector_component_3 element. Example value: LONJ\$S3 (a longitude).

VECTOR_COMPONENT_TYPE CHARACTER(12)
The vector_component_type element identifies the type of information which is provided by a particular vector component identification element. Example values: LATITUDE, LONGITUDE, VELOCITY.

VECTOR_COMPONENT_TYPE_DESC CHARACTER
The vector_component_type_desc provides a general description of a particular vector component type.

VECTOR_COMPONENT_UNIT CHARACTER(60)
The vector_component_unit element specifies the unit of measure of associated dataset or sampling parameters. For example, in the ring information entity the unit element specifies that a given set of ring radii are measured in kilometers.

VERSION_ID [JPL-AMMOS-SPECIFIC] CHARACTER
This element is an alias for product_version_id used only by AMMOS-MGN ephemeris files.

VERSION_NUMBER [JPL-AMMOS-SPECIFIC] INTEGER
The version_number element is defined as an alias for product_version_id and is available only for AMMOS-Magellan mission operations products.

VERTICAL_FOV REAL(0, 360) <deg>
The vertical_field_of_view element provides the angular measure of the vertical field of view of an instrument.

VERTICAL_FRAMELET_OFFSET REAL(>=1)
The vertical_framelet_offset element provides the column number of a framelet within a tiled image. In the PDS, offsets are counted from one.

VERTICAL_PIXEL_FOV REAL(0, 360) <deg>
The vertical_pixel_field_of_view element provides the angular measure of the vertical field of view of a single pixel.

VERTICAL_PIXEL_SCALE REAL(0,1E9)<m/pixel>
The VERTICAL_PIXEL_SCALE element indicates the vertical picture scale.

VOLUME_DESC [PDS-CN] CHARACTER
The volume_desc element describes the content and type of data contained in the volume.

VOLUME_FORMAT CHARACTER(20)
The volume_format element identifies the logical format used in writing a data volume, such as ANSI, TAR, or BACKUP for tape volumes and ISO-9660, HIGH-SIERRA, for CD-ROM volumes.

VOLUME_ID CHARACTER(12)
The volume_id element provides a unique identifier for a data volume. Example: MG_1001.

VOLUME_INSERT_TEXT CHARACTER
The volume_insert_text element provides a text field to be included on the volume insert. The text field should identify the data products or data sets included on the volume. The text field should consist of 8 or fewer lines of text where each line is no more than 60 characters wide.

VOLUME_NAME CHARACTER(72)
The volume_name element contains the name of a data volume. In most cases the volume_name is more specific than the volume_set_name. For example, the volume_name for the first volume in the VOYAGER IMAGES OF URANUS volume set is: Volume 1: Compressed Images 24476.54 - 26439.58

VOLUME_SERIES_NAME CHARACTER(60)
The volume_series_name element provides a full, formal name that describes a broad categorization of data products or data sets related to a planetary body or a research campaign (e.g. International Halley Watch). A volume series consists of one or more volume sets that represent data from one or more missions or campaigns. For example, the volume series MISSION TO VENUS consists of the following three volume sets:

MAGELLAN: THE MOSAIC IMAGE DATA RECORD
MAGELLAN: THE ALTIMETRY AND RADIOMETRY DATA RECORD
PRE-MAGELLAN RADAR AND GRAVITY DATA SET COLLECTION

VOLUME_SET_ID CHARACTER(40)
The volume_set_id element identifies a data volume or a set of volumes. Volume sets are normally considered as a single orderable entity. Examples: USA_NASA_PDS_MG_1001, USA_NASA_PDS_GR_0001_TO_GR_0009

VOLUME_SET_NAME CHARACTER(60)
The volume_set_name element provides the full, formal name of one or more data volumes containing a single data set or a collection of related data sets. Volume sets are normally considered as a single orderable entity. For example, the volume series MISSION TO VENUS consists of the following three volume sets:

MAGELLAN: THE MOSAIC IMAGE DATA RECORD
MAGELLAN: THE ALTIMETRY AND RADIOMETRY DATA RECORD
PRE-MAGELLAN RADAR AND GRAVITY DATA SET COLLECTION
In certain cases, the volume_set_name can be the same as the volume_name, such as when the volume_set consists of only one volume.

VOLUME_SETS [PDS-CN] INTEGER

The volume_sets element provides the number of volume sets in a volume series. For example, there are currently six (6) volume sets associated with the volume series MISSION TO VENUS.

VOLUME_VERSION_ID CHARACTER(12)
The volume_version_id element indentifies the version of a data volume. All original volumes should use a volume_version_id of 'Version 1'. Versions are used when data products are remade due to errors or limitations in the original volumes (test volumes, for example), and the new version makes the previous volume obsolete. Enhancements or revisions to data products which constitute alternate data products should be assigned a unique volume id, not a new version id. Examples: Version 1, Version 2.

VOLUMES INTEGER
The volumes element provides the number of physical data volumes contained in a volume set.

Note: In the PDS, volumes represent the total number of related data volumes that comprise a single orderable unit, as represented by the volume_set_id. For Example, the volume set VOYAGER IMAGES OF URANUS has the volume_set_id of USA_NASA_PDS_VG_0001_TO_VG_0003 and the value for volumes would be 3.

WAVELENGTH [PDS-RINGS] REAL <micron>
The wavelength element identifies the mean wavelength to which an instrument detector/filter combination is sensitive.

WESTERNMOST_LONGITUDE REAL(-180, 360)<deg>
The following definitions describe westernmost longitude for the body-fixed, rotating coordinate systems: For Planetocentric coordinates and for Planetographic coordinates in which longitude increases toward the east, the westernmost (leftmost) longitude of a spatial area (e.g.,a map, mosaic, bin,feature or region) is the minimum numerical value of longitude unless it crosses the Prime Meridian. NULL For Planetographic coordinates in which longitude increases toward the west (prograde rotator), the westernmost (leftmost) longitude of a spatial area (e.g., a map, mosaic, bin, feature or region) is the maximum numerical value of longitude unless it crosses the Prime Meridian. For the Earth, Moon and Sun, PDS also supports the traditional use of the range (-180,180) in which case the westernmost (leftmost) longitude is the minimum numerical value of longitude unless it crosses -180.

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APPENDIX A. STANDARD VALUES

The science community associated with the Planetary Data System has identified a list of data elements for which a standard list of values should be given. This section identifies these elements and their associated values. In some cases (particularly in cases related to the AMMOS-PDS interface) some values may be restricted to or from specific data types. Please refer to the appropriate standards specification -- CDB-Any-Catalog2 -- for specific restrictions pertinent to the AMMOS-PDS interface.

Also included is the standard value type, which indicates the nature of the lists presented, i.e., whether and how the lists can be updated. The standard value types are defined below:

STATIC

STATIC standard values are assigned by PDS Central Node system and data administrators. They may only be changed by the Central Node. Examples of such values are the 'Y' and 'N' permissable as values for a "flag"-type data element.

DYNAMIC

DYNAMIC standard value lists reflect values that have been submitted to the PDS so far by past and current planetary missions. New values for these lists may be proposed to the PDS by flight projects and other data systems such as SFOC. Such new values are added to DYNAMIC upon completion of scientific peer review.

SUGGESTED

SUGGESTED lists also reflect values that have been submitted by past missions, but without benefit of peer review. These provide samples for the user -- "University of Iowa" rather then "Univ. or IA", for example. It is expected that elements of the SUGGESTED lists eventually will become DYNAMIC.

FORMATION

The FORMATION standard value type indicates that the values are made up of components, and that those components must be arranged according to a standard form. Formation rules are illustrated for time expressions in this document (see DATA TYPE STANDARDS), and for PDS data_set_ids and names in the PDS standards documentation.

TEXT

The TEXT standard value type indicates that the values are made up of free form unlimited length character string.

APERTURE_TYPE	[PDS-SBN]	DYNAMIC
BOTH		
LARGE		
SMALL		
AXIS_NAME		DYNAMIC
(BAND, SAMPLE, LINE)		
(SAMPLE, BAND, LINE)		
(SAMPLE, LINE, BAND)		
AXIS_ORDER_TYPE		STATIC
FIRST_INDEX_FASTEST		
LAST_INDEX_FASTEST		
AXIS_UNIT		DYNAMIC
AMPERE		
BITS		
CANDELA		
COULOMB		
DAY		
DEGREE		
FARAD		
GRAM		
GRAY		
HENRY		
HERTZ		
HOUR		
JOULE		
KELVIN		
KILOGRAM		
LUMEN		
LUX		
METER		
MINUTE		
MOLE		
N/A		
NEWTON		
OHM		
PASCAL		
PIXEL		
RADIAN		
SECOND		
SIEMENS		
SIEVERT		
STERADIAN		
TELSA		
VOLT		
WATT		
WEBER		

BAND_BIN_UNIT	[ISIS]	DYNAMIC
MICROMETER		
BAND_SEQUENCE		DYNAMIC
(BLUE, GREEN, RED)		
(BLUE, RED, GREEN)		
(GREEN, BLUE, RED)		
(GREEN, RED, BLUE)		
(RED, BLUE, GREEN)		
(RED, GREEN, BLUE)		
BAND_STORAGE_TYPE		DYNAMIC
BAND SEQUENTIAL		
LINE INTERLEAVED		
SAMPLE INTERLEAVED		
BIT_DATA_TYPE		STATIC
BINARY CODED DECIMAL		
BOOLEAN		
MSB INTEGER		
MSB UNSIGNED INTEGER		
N/A		
UNSIGNED INTEGER		
BLEMISH_PROTECTION_FLAG		STATIC
OFF		
ON		
BROWSE_FLAG		STATIC
N		
Y		
CHANNEL_GROUP_NAME		DYNAMIC
FAR ENCOUNTER		
FAR-NEAR ENCOUNTER		
NEAR ENCOUNTER		
CMPRS_QUANTZ_TBL_ID	[PDS-IMG-GLL]	DYNAMIC
UNIFORM		
UNK		
VG2		
VG3		

COMPRESSION_TYPE	[PDS-IMG-GLL]	DYNAMIC
BARC RATE CONTROL		
HUFFMAN		
INTEGER COSINE TRANSFORM		
NONE		

COORDINATE_SYSTEM_CENTER_NAME	DYNAMIC
EARTH	
JUPITER	
NEPTUNE	
PLANET'S CENTER	
PVO	
SATURN	
SPACECRAFT	
SUN	
UNK	
URANUS	
VENUS	

COORDINATE_SYSTEM_ID	DYNAMIC
-JUPSYS3	
-SATSYS3	
-URNSYS3	
BFS CRDS	
ESL-CART	
HG	
ICC ECLP	
ICC EQTL	
ISC ECLP	
ISC EQTR	
NLS	
NRSC	
PLSCYL	
PVO ISCC	
PVO SSCC	
SCC ECLP	
U1	
VSO	

COORDINATE_SYSTEM_NAME	DYNAMIC
BODY FIXED SPHERICAL COORDS	
EARTH-SUN LINE CARTES COORDS	
ECLIPTIC INERTIAL CART COORDS	
ECLIPTIC INERTL SPHERCL COORDS	
EQUATORIAL INERT SPHRCL COORDS	
EQUATORIAL INERTIAL CART COORD	

JUPITER MINUS SYSTEM III
MEAN INERTIAL HG 1950
NEPTUNE WEST LONGITUDE SYSTEM
NON-ROTATING SPIN COORDINATES
PLANET CENTERED CYLINDRICAL
PLANETOCENTRIC
PLANETOGRAPHIC
PVO INERTIAL SPACECRAFT COORDS
PVO SPINNING SPACECRAFT COORDS
SATURN MINUS LONGITUDE SYSTEM
SC CENTERED ECLIPTIC COORDS
URANUS MINUS LONGITUDE SYSTEM
URANUS WEST LONGITUDE SYSTEM
VENUS SOLAR ORBITAL COORDS

COORDINATE_SYSTEM_TYPE STATIC
BODY-FIXED NON-ROTATING
BODY-FIXED ROTATING
INERTIAL

CORE_HIGH_INSTR_SATURATION [ISIS] DYNAMIC
-32765
16#FFFCFFFF#
3

CORE_HIGH_REPR_SATURATION [ISIS] DYNAMIC
-32764
16'FFFBFFFF'
4

CORE_ITEM_TYPE [ISIS] STATIC
UNSIGNED INTEGER
VAX INTEGER
VAX REAL

CORE_LOW_INSTR_SATURATION [ISIS] DYNAMIC
-32766
16'FFFDFFFF'
2

CORE_LOW_REPR_SATURATION [ISIS] DYNAMIC
-32767
1
16'FFFEFFFF'

CORE_NAME [ISIS] DYNAMIC

RAW DATA NUMBER
SPECTRAL RADIANCE

CORE_NULL	[ISIS]	DYNAMIC
-32768		
0		
16#FFFFFFFF#		
CORE_UNIT	[ISIS]	DYNAMIC
DIMENSIONLESS		
WATT*M**-2*SR**-1*uM**-1		
CORE_VALID_MINIMUM	[ISIS]	DYNAMIC
-32752		
16#FFEFFFFF#		
5		
CYCLE_ID		DYNAMIC
GS3		
GS5		
DARK_CURRENT_CORRECTION_FLAG		STATIC
FALSE		
TRUE		
DATA_FORMAT		SUGGESTED
COMPRESSED		
FITS		
GIF		
HDF		
JPEG		
PDS		
PICT		
SPICE		
VICAR		
DATA_OBJECT_TYPE		DYNAMIC
ARRAY		
BIT_COLUMN		
COLLECTION		
COLUMN		
CONTAINER		
ELEMENT		
FILE		

HEADER
HISTOGRAM
IMAGE
IMAGE_MAP_PROJECTION
INDEX_TABLE
MAP
N/A
PALETTE
QUBE
SERIES
SPECTRUM
SPICE KERNEL
TABLE
TEXT
TIME SERIES
{IMAGE, TABLE, ARRAY}

DATA_PATH_TYPE DYNAMIC
N/A
REALTIME
REALTIME PLAYBACK
RECORDED DATA PLAYBACK
UNK

DATA_QUALITY_ID DEFINITION
N/A

DATA_SET_CATALOG_FLAG [PDS-CN] STATIC
N
Y

DATA_SET_COLLECTION_ID FORMATION
GRSFE-E-2/3/4/5-RDR-V1.0
IHW-C-2/3-CHRON-DATA-V1.0
IHW-C-2/3/4/5-SPACECRAFT-DATA-V1.0
IHW-C-LC-2/3-V1.0
MGN-V-RSS-5-OCC-PROFILES-V1.0
MODEL-M-AMES-GCM-5-1977-4-SEASONS-V1.0
PREMGN-E/L/H/M/V-4/5-RAD/GRAV-V1.0
SL9-J/C-3-IMPACT-EVENTS-SELECT-DATA-V1.0
VG1/VG2-SR/UR/NR-1/2/4-OCC-V1.0

DATA_SET_COLLECTION_MEMBER_FLG STATIC
N
Y

DATA_SET_COLLECTION_NAME FORMATION

AMES MARS GENERAL CIRCULATION MODEL 5 1977 4 SEASONS V1.0
GEOLOGIC REMOTE SENSING FIELD EXPERIMENT E 2/3/4/5 RDR V1.0
IHW COMET HALLEY CHRONOLOGICAL DATA V1.0
IHW COMET LC 2/3 CHRONOLOGICAL DATA V1.0
INTERNATIONAL HALLEY WATCH SPACECRAFT COMETARY DATA V1.0
MAGELLAN V RSS 5 OCCULTATION PROFILES V1.0
PRE-MAGELLAN E/L/H/M/V 4/5 RADAR/GRAVITY DATA V1.0
SHOEMAKER-LEVY-9-JUPITER-IMPACT-EVENTS-SELECT-DATA-V1.0
VG1/VG2 SR/UR/NR RAW/EDITED/RESAMPLED RING OCCULTATION V1.0

DATA_SET_ID FORMATION

A-5-DDR-ASTERMAG-V1.0
A-5-DDR-ASTEROID-SPIN-VECTORS-V3.0
A-5-DDR-ASTNAMES-V1.0
A-5-DDR-POLE-POSITION-REF-V1.0
A-5-DDR-POLE-POSITION-V1.0
A-5-DDR-TAXONOMY-V1.0
ARCB-L-RTLS-3-70CM-V1.0
ARCB-L-RTLS-4-70CM-V1.0
ARCB-L-RTLS-5-12.6CM-V1.0
ARCB-V-RTLS-4-12.6CM-V1.0
ARCB/GSSR-M-RTLS-5-MODEL-V1.0
C130-E-ASAS-3-RDR-IMAGE-V1.0
C130-E-TIMS-2-EDR-IMAGE-V1.0
CLEM1-L-H-5-DIM-MOSAIC-V1.0
CLEM1-L-LIDAR-5-TOPO-V1.0
CLEM1-L-RSS-1-BSR-V1.0
CLEM1-L-RSS-5-BSR-V1.0
CLEM1-L-RSS-5-GRAVITY-V1.0
CLEM1-L-U-5-DIM-BASEMAP-V1.0
CLEM1-L-U-5-DIM-UVVIS-V1.0
CLEM1-L/E/Y-A/B/U/H/L/N-2-EDR-V1.0
EAR-A-2CP-3-RDR-ECAS-FILTER-CURVES-V1.0
EAR-A-2CP-3-RDR-ECAS-MEAN-V1.0
EAR-A-2CP-3-RDR-ECAS-STANDARD-STARS-V1.0
EAR-A-2CP-3-RDR-ECAS-V1.0
EAR-A-2CP-3-RDR-ECAS-V2.0
EAR-A-2CP-5-DDR-ECAS-PRINCIPAL-COMP-V1.0
EAR-A-3-DDR-APC-LIGHTCURVE-V1.0
EAR-A-3-RDR-APD-POLARIMETRY-V1.0
EAR-A-3-RDR-APD-POLARIMETRY-V2.0
EAR-A-3-RDR-APD-POLARIMETRY-V3.0
EAR-A-3-RDR-APD-POLARIMETRY-V4.0
EAR-A-3-RDR-METEORITE-SPECTRA-V1.0
EAR-A-3-RDR-PCME-V1.0
EAR-A-3-RDR-RIVKIN-THREE-MICRON-V1.0
EAR-A-3-RDR-SAWYER-ASTEROID-SPECTRA-V1.0
EAR-A-3-RDR-SCAS-V1.0
EAR-A-3-RDR-THREEMICRON-V1.0
EAR-A-3-RDR-TNO-PHOT-V1.0
EAR-A-3-RDR-TRIAD-POLARIMETRY-V1.0
EAR-A-3-RDR-TRIAD-POLARIMETRY-V2.0

EAR-A-3-RDR-VILAS-ASTEROID-SPECTRA-V1.0
EAR-A-5-DDR-ASTERMAG-V2.0
EAR-A-5-DDR-ASTERMAG-V3.0
EAR-A-5-DDR-ASTERMAG-V4.0
EAR-A-5-DDR-ASTERMAG-V5.0
EAR-A-5-DDR-ASTEROID-SPIN-VECTORS-V4.0
EAR-A-5-DDR-ASTNAMES-DISCOVERY-V1.0
EAR-A-5-DDR-ASTNAMES-DISCOVERY-V2.0
EAR-A-5-DDR-ASTNAMES-DISCOVERY-V3.0
EAR-A-5-DDR-ASTNAMES-DISCOVERY-V4.0
EAR-A-5-DDR-ASTNAMES-DISCOVERY-V5.0
EAR-A-5-DDR-ASTNAMES-V2.0
EAR-A-5-DDR-BIBLIOGRAPHY-V1.0
EAR-A-5-DDR-DERIVED-LIGHTCURVE-V1.0
EAR-A-5-DDR-DERIVED-LIGHTCURVE-V2.0
EAR-A-5-DDR-DERIVED-LIGHTCURVE-V3.0
EAR-A-5-DDR-DERIVED-LIGHTCURVE-V4.0
EAR-A-5-DDR-DISCOVERY-V1.0
EAR-A-5-DDR-EARTHAPP-V1.0
EAR-A-5-DDR-FAMILY-V1.0
EAR-A-5-DDR-FAMILY-V2.0
EAR-A-5-DDR-FAMILY-V3.0
EAR-A-5-DDR-FAMILY-V4.0
EAR-A-5-DDR-PROPER-ELEMENTS-V1.0
EAR-A-5-DDR-RADAR-V1.0
EAR-A-5-DDR-RADAR-V3.0
EAR-A-5-DDR-RADAR-V4.0
EAR-A-5-DDR-RADAR-V5.0
EAR-A-5-DDR-RADAR-V6.0
EAR-A-5-DDR-RADAR-V7.0
EAR-A-5-DDR-RADAR-V7.1
EAR-A-5-DDR-SHAPE-MODELS-V1.0
EAR-A-5-DDR-SHAPE-MODELS-V2.0
EAR-A-5-DDR-TAXONOMY-V1.0
EAR-A-5-DDR-TAXONOMY-V2.0
EAR-A-5-DDR-TAXONOMY-V3.0
EAR-A-5-DDR-UBV-MEAN-VALUES-V1.0
EAR-A-6-DDR-DERIVED-LIGHTCURVE- REF-V1.0
EAR-A-6-DDR-DERIVED-LIGHTCURVE-REF-V1.0
EAR-A-8CPS-3-RDR-8COL-V1.0
EAR-A-DBP-3-RDR-24COLOR-V1.0
EAR-A-GST-3-RDR-GEOGRAPHOS-RADAR-V1.0
EAR-A-M3SPEC-3-RDR-SMASS-V1.0
EAR-A-RDR-3-52COLOR-V1.0
EAR-C-5-DDR-PCC-V1.0
EAR-C-IDS-3-RDR-MCDNLD-V1.0
EAR-C-PHOT-3-RDR-LOWELL-V1.0
EAR-C-PHOT-5-RDR-LOWELL-V1.0
EAR-J-AAT-3-EDR-SL9-V1.0
EAR-J-KECK-3-EDR-SL9-V1.0
EAR-J-SAAO-3-EDR-SL9-V1.0
EAR-J-SPIREX-3-EDR-SL9-V1.0
ER2-E-AVIR-3-RDR-IMAGE-V1.0

ESO-C-EMMI-3-RDR-SL9-V1.0
ESO-J-IRSPEC-3-RDR-SL9-V1.0
ESO-J-SUSI-3-RDR-SL9-V1.0
ESO-J/S/N/U-SPECTROPHOTOMETER-4-V2.0
FEXP-E-AWND-3-RDR-TEMP-VELOCITY-V1.0
FEXP-E-DAED-3-RDR-SPECTRUM-V1.0
FEXP-E-GPSM-5-RDR-TOPOGRAPHIC-PROF-V1.0
FEXP-E-HSTP-4-RDR-TOPOGRAPHIC-PROF-V1.0
FEXP-E-PARB-3-RDR-SPECTRUM-V1.0
FEXP-E-PFES-3-RDR-SPECTRUM-V1.0
FEXP-E-REAG-3-RDR-OPT-DEP-V1.0
FEXP-E-RMTR/THRM-3-RDR-TEMPERATURE-V1.0
FEXP-E-SHYG-3-RDR-OPT-DEP-V1.0
FEXP-E-SIRS-4-RDR-SPECTRUM-V1.0
FEXP-E-WTHS-3-RDR-TEMP-VELOCITY-V1.0
GIO-C-DID-3-RDR-HALLEY-V1.0
GIO-C-GRE-3-RDR-HALLEY-V1.0
GIO-C-HMC-3-RDR-HALLEY-V1.0
GIO-C-IMS-3-RDR-HERS-HALLEY-V1.0
GIO-C-IMS-3-RDR-HIS-HALLEY-V1.0
GIO-C-JPA-4-DDR-HALLEY-MERGE-V1.0
GIO-C-MAG-4-RDR-HALLEY-8SEC-V1.0
GIO-C-OPE-3-RDR-HALLEY-V1.0
GIO-C-PIA-3-RDR-HALLEY-V1.0
GO-A-NIMS-2-EDR-V1.0
GO-A-UVS-2-EDR-V1.0
GO-A-UVS-3-RDR-V1.0
GO-A/C-SSI-2-REDR-V1.0
GO-A/E-SSI-2-REDR-V1.0
GO-A1-PPR-2-RDR-V1.0
GO-A1-PPR-2-R_EDR-V1.0
GO-A2-PPR-2-RDR-V1.0
GO-CAL-PPR-2-R_EDR-V1.0
GO-D-GDDS-5-DUST-V2.0
GO-E-EPD-2-EDR-EARTH-2-V1.0
GO-E-EUV-2-EDR-V1.0
GO-E-NIMS-3-TUBE-V1.0
GO-E-NIMS-4-MOSAIC-V1.0
GO-E-PPR-2-R_EDR-V1.0
GO-E-UVS-2-EDR-V1.0
GO-E-UVS-3-RDR-V1.0
GO-E/A-EPD-2-EDR-EARTH-1-GASPRA-V1.0
GO-E/L-NIMS-2-EDR-V1.0
GO-E/L/CAL1-PPR-2-RDR-V1.0
GO-E/L/CAL2-PPR-2-RDR-V1.0
GO-J-EUV-2-EDR-JUPITER-V1.0
GO-J-NIMS-2-EDR-V1.0
GO-J-NIMS-4-ADR-SL9IMPACT-V1.0
GO-J-PPR-2-REDR-V1.0
GO-J-PPR-3-EDR-SL9-G/H/L/Q1-V1.0
GO-J-PPR-3-RDR-V1.0
GO-J-UVS-2-EDR-JUPITER-V1.0
GO-J-UVS-2-EDR-SL9-V1.0

GO-J-UVS-3-RDR-SL9-G-FRAGMENT-V1.0
GO-J-UVS-3-RDR-V1.0
GO-J/JSA-SSI-2-REDR-V1.0
GO-L-NIMS-3-TUBE-V1.0
GO-L-PPR-2-R_EDR-V1.0
GO-V-EPD-2-EDR-V1.0
GO-V-EUV-2-EDR-V1.0
GO-V-NIMS-2-EDR-V1.0
GO-V-NIMS-3-TUBE-V1.0
GO-V-NIMS-4-MOSAIC-V1.0
GO-V-PPR-2-RDR-V1.0
GO-V-PPR-2-R_EDR-V1.0
GO-V-RSS-1-TDF-V1.0
GO-V-UVS-2-EDR-V1.0
GO-V-UVS-3-RDR-V1.0
GO-V/E-SSI-2-REDR-V1.0
GO-X-PPR-2-RDR-V1.0
GO-X-PPR-2-R_EDR-V1.0
GP-J-ASI-3-ENTRY-V1.0
GP-J-DWE-3-ENTRY-V1.0
GP-J-EPI-3-ENTRY-V1.0
GP-J-HAD-3-ENTRY-V1.0
GP-J-LRD-3-ENTRY-V1.0
GP-J-NEP-3-ENTRY-V1.0
GP-J-NFR-3-ENTRY-V1.0
GP-J-NMS-3-ENTRY-V1.0
GSSR-H-RTLS-4-ALT-V1.0
GSSR-M-RTLS-5-ALT-V1.0
GSSR-V-RTLS-5-12.6-9CM-V1.0
HST-J-FOS-3-SL9-IMPACT-V1.0
HST-J-GHRS-3-SL9-IMPACT-V1.0
HST-J-WFPC2-3-SL9-IMPACT-V1.0
HST-S-WFPC2-3-RPX-V1.0
HSTK-L-RTLS-4-3.8CM-V1.0
ICE-C-EPAS-3-RDR-GIACOBIN-ZIN-V1.0
ICE-C-MAG-3-RDR-GIACOBIN-ZIN-V1.0
ICE-C-PLAWAV-3-RDR-ESP-GIACOBIN-ZIN-V1.0
ICE-C-PLAWAV-3-RDR-MSP-GIACOBIN-ZIN-V1.0
ICE-C-RADWAV-3-RDR-GIACOBIN-ZIN-V1.0
ICE-C-SWPLAS-3-RDR-GIACOBIN-ZIN-V1.0
IHW-C-AMDRAW-N-NDR-GZ-V1.0
IHW-C-AMPG-N-NDR-HALLEY-V1.0
IHW-C-AMSPEC-N-NDR-GZ-V1.0
IHW-C-AMVIS-2-RDR-CROMMELIN-V1.0
IHW-C-AMVIS-2-RDR-GZ-V1.0
IHW-C-AMVIS-2-RDR-HALLEY-V1.0
IHW-C-ASTR-2-EDR-CROMMELIN-V1.0
IHW-C-ASTR-2-EDR-GZ-V1.0
IHW-C-ASTR-2-EDR-HALLEY-V1.0
IHW-C-IRFCURV-3-EDR-HALLEY-V1.0
IHW-C-IRFTAB-2-RDR-CROMMELIN-V1.0
IHW-C-IRFTAB-2-RDR-GZ-V1.0
IHW-C-IRFTAB-3-RDR-HALLEY-V1.0

IHW-C-IRIMAG-3-EDR-GZ-V1.0
IHW-C-IRIMAG-3-EDR-HALLEY-V1.0
IHW-C-IRIMAG-N-NDR-GZ-V1.0
IHW-C-IRPHOT-2-RDR-CROMMELIN-V1.0
IHW-C-IRPHOT-2-RDR-GZ-V1.0
IHW-C-IRPHOT-3-RDR-HALLEY-V1.0
IHW-C-IRPOL-2-RDR-GZ-V1.0
IHW-C-IRPOL-3-RDR-HALLEY-V1.0
IHW-C-IRSPEC-3-EDR-GZ-V1.0
IHW-C-IRSPEC-3-EDR-HALLEY-V1.0
IHW-C-IRSPEC-N-NDR-HALLEY-V1.0
IHW-C-LSPN-2-DIDR-CROMMELIN-V1.0
IHW-C-LSPN-2-DIDR-GZ-V1.0
IHW-C-LSPN-2-DIDR-HALLEY-V1.0
IHW-C-LSPN-N-NDR-CROMMELIN-V1.0
IHW-C-LSPN-N-NDR-GZ-V1.0
IHW-C-LSPN-N-NDR-HALLEY-V1.0
IHW-C-MSNRDR-3-RDR-HALLEY-ETA-AQUAR-V1.0
IHW-C-MSNRDR-3-RDR-HALLEY-ORIONID-V1.0
IHW-C-MSNVIS-3-RDR-HALLEY-ETA-AQUAR-V1.0
IHW-C-MSNVIS-3-RDR-HALLEY-ORIONID-V1.0
IHW-C-NNSN-3-EDR-CROMMELIN-V1.0
IHW-C-NNSN-3-EDR-GZ-V1.0
IHW-C-NNSN-3-EDR-HALLEY-V1.0
IHW-C-PPFLX-3-RDR-CROMMELIN-V1.0
IHW-C-PPFLX-3-RDR-GZ-V1.0
IHW-C-PPFLX-3-RDR-HALLEY-V1.0
IHW-C-PPMAG-3-RDR-CROMMELIN-V1.0
IHW-C-PPMAG-3-RDR-GZ-V1.0
IHW-C-PPMAG-3-RDR-HALLEY-V1.0
IHW-C-PPOL-3-RDR-CROMMELIN-V1.0
IHW-C-PPOL-3-RDR-GZ-V1.0
IHW-C-PPOL-3-RDR-HALLEY-V1.0
IHW-C-PPSTOKE-3-RDR-HALLEY-V1.0
IHW-C-RSCN-3-EDR-CROMMELIN-V1.0
IHW-C-RSCN-3-EDR-HALLEY-V1.0
IHW-C-RSCN-N-NDR-CROMMELIN-V1.0
IHW-C-RSCN-N-NDR-GZ-V1.0
IHW-C-RSCN-N-NDR-HALLEY-V1.0
IHW-C-RSOC-3-EDR-GZ-V1.0
IHW-C-RSOC-3-EDR-HALLEY-V1.0
IHW-C-RSOH-3-EDR-CROMMELIN-V1.0
IHW-C-RSOH-3-EDR-GZ-V1.0
IHW-C-RSOH-3-EDR-HALLEY-V1.0
IHW-C-RSOH-N-NDR-CROMMELIN-V1.0
IHW-C-RSRDR-3-EDR-HALLEY-V1.0
IHW-C-RSSL-3-EDR-HALLEY-V1.0
IHW-C-RSSL-N-NDR-CROMMELIN-V1.0
IHW-C-RSSL-N-NDR-GZ-V1.0
IHW-C-RSSL-N-NDR-HALLEY-V1.0
IHW-C-RSUV-2-EDR-HALLEY-V1.0
IHW-C-SPEC-2-DIDR-CROMMELIN-V1.0
IHW-C-SPEC-2-DIDR-GZ-V1.0

IHW-C-SPEC-2-EDR-CROMMELIN-V1.0
IHW-C-SPEC-2-EDR-GZ-V1.0
IHW-C-SPEC-2-EDR-HALLEY-V1.0
IHW-C-SPEC-3-DIDR-HALLEY-V1.0
IHW-C-SPEC-3-EDR-CROMMELIN-V1.0
IHW-C-SPEC-3-EDR-GZ-V1.0
IHW-C-SPEC-3-EDR-HALLEY-V1.0
IRAS-6-SDR-SATELLITE-STATUS-V1.0
IRAS-A-FPA-3-RDR-IMPS-V1.0
IRAS-A-FPA-3-RDR-IMPS-V3.0
IRAS-A-FPA-3-RDR-IMPS-V4.0
IRAS-D-6-SDR-SHF-V1.0
IRAS-D-FPA-3-RDR-ZOHF-LOW-RES-V1.0
IRAS-D-FPA-3-RDR-ZOHF-MED-RES-V1.0
IRAS-D-FPA-6-RDR-V1.0
IRAS-FPA-6-RDR-INSTRUMENT-INFO-V1.0
IRTF-J/C-NSFCAM-3-RDR-SL9-V1.0
IUE-C-LWP-3-EDR-IUECDB-V1.0
IUE-J-LWP-3-EDR-SL9-V1.0
IUE-J-SWP-3-EDR-SL9-V1.0
LP-L-6-EPHEMERIS-V1.0
LP-L-6-POSITION-V1.0
LP-L-COM-6-ATTITUDE-V1.0
LP-L-COM-6-COMMAND-V1.0
LP-L-COM-6-SUNPULSE-V1.0
LP-L-COM/GRS/NS/APS/MAG/ER-1-MDR-V1.0
LP-L-GRS/NS/APS-2-RDR-V1.0
LP-L-RSS-1-ATDF-V1.0
LP-L-RSS-5-GRAVITY-V1.0
LP-L-RSS-5-LOS-V1.0
MGN-V-RDRS-2-ALT-EDR-V1.0
MGN-V-RDRS-5-BIDR-FULL-RES-V1.0
MGN-V-RDRS-5-C-BIDR-V1.0
MGN-V-RDRS-5-CDR-ALT/RAD-V1.0
MGN-V-RDRS-5-DIM-V1.0
MGN-V-RDRS-5-GDR-EMISSIVITY-V1.0
MGN-V-RDRS-5-GDR-REFLECTIVITY-V1.0
MGN-V-RDRS-5-GDR-SLOPE-V1.0
MGN-V-RDRS-5-GDR-TOPOGRAPHIC-V1.0
MGN-V-RDRS-5-GVDR-V1.0
MGN-V-RDRS-5-MIDR-C1-V1.0
MGN-V-RDRS-5-MIDR-C2-V1.0
MGN-V-RDRS-5-MIDR-C3-V1.0
MGN-V-RDRS-5-MIDR-FULL-RES-V1.0
MGN-V-RDRS-5-SCVDR-V1.0
MGN-V-RDRS-5-TOPO-L2-V1.0
MGN-V-RSS-1-ATDF-V1.0
MGN-V-RSS-1-BSR-V1.0
MGN-V-RSS-1-ROCC-V2.0
MGN-V-RSS-5-GRAVITY-L2-V1.0
MGN-V-RSS-5-LOSAPDR-L2-V1.0
MGN-V-RSS-5-LOSAPDR-L2-V1.13
MGN-V-RSS-5-OCC-PROF-ABS-H2SO4-V1.0

MGN-V-RSS-5-OCC-PROF-RTPD-V1.0
MGS-M-ACCEL-0-ACCEL_DATA-V1.0
MGS-M-ACCEL-2-EDR-V1.1
MGS-M-ACCEL-5-ALTITUDE-V1.0
MGS-M-ACCEL-5-ALTITUDE-V1.1
MGS-M-ACCEL-5-PROFILE-V1.0
MGS-M-ACCEL-5-PROFILE-V1.2
MGS-M-MAG/ER-5-SAMPLER-V1.0
MGS-M-MOC-NA/WA-2-DSDP-L0-V1.0
MGS-M-MOC-NA/WA-2-SDP-L0-V1.0
MGS-M-MOLA-1-AEDR-L0-V1.0
MGS-M-MOLA-3-PEDR-ASCII-V1.0
MGS-M-MOLA-3-PEDR-L1A-V1.0
MGS-M-MOLA-5-IEGDR-L3-V1.0
MGS-M-MOLA-5-IEGDR-L3-V2.0
MGS-M-MOLA-5-PEDR-SAMPLER-V1.0
MGS-M-MOLA-5-SHADR-V1.0
MGS-M-RSS-1-CRU-V1.0
MGS-M-RSS-1-CRUISE-V1.0
MGS-M-RSS-1-EXT-V1.0
MGS-M-RSS-1-MAP-V1.0
MGS-M-RSS-1-MOI-V1.0
MGS-M-RSS-5-SDP-V1.0
MGS-M-SPICE-6-CK-V1.0
MGS-M-SPICE-6-EK-V1.0
MGS-M-SPICE-6-FK-V1.0
MGS-M-SPICE-6-IK-V1.0
MGS-M-SPICE-6-LSK-V1.0
MGS-M-SPICE-6-PCK-V1.0
MGS-M-SPICE-6-SCLK-V1.0
MGS-M-SPICE-6-SPK-V1.0
MGS-M-SPICE-6-V1.0
MGS-M-TES-3-SAMPLER-V1.0
MGS-M-TES-3-TSDR-V1.0
MGS-M-TES-3-TSDR-V2.0
MGS-M-TES-5-SAMPLER-V1.0
MGS-SUN-RSS-1-ROCC-V1.0
MK88-L-120CVF-3-RDR-120COLOR-V1.0
MO-M-RSS-1-OIDR-V1.0
MODEL-M-AMES-GCM-5-LAT-LON-V1.0
MODEL-M-AMES-GCM-5-LAT-PRES-V1.0
MODEL-M-AMES-GCM-5-LAT-TIME-V1.0
MODEL-M-AMES-GCM-5-LAT-V1.0
MODEL-M-AMES-GCM-5-TIME-V1.0
MODEL-M-AMES-GCM-5-TOPOGRAPHY-V1.0
MPF-M-RSS-1/5-RADIOTRACK-V1.0
MPFL-M-ASIMET-2-EDR-SURF-V1.0
MPFL-M-ASIMET-2/3-EDR/RDR-EDL-V1.0
MPFL-M-ASIMET-3-RDR-SURF-V1.0
MPFL-M-ASIMET-4-DDR-EDL-V1.0
MPFL-M-IMP-2-EDR-V1.0
MPFR-M-APXS-2-EDR-V1.0
MPFR-M-APXS-5-DDR-V1.0

MPFR-M-RVRCAM-2-EDR-V1.0
MPFR-M-RVRCAM-5-MIDR-V1.0
MPFR-M-RVRENG-2/3-EDR/RDR-V1.0
MR10-H/L/V-NAC/WAC-2-EDR-V1.0
MR10-H/L/V-NAC/WAC-5-MIDR-V1.0
MR6/MR7-M-IRS-3-V1.0
MR9-M-IRIS-3-RDR-V1.0
MR9-M-ISS-2-EDR-V1.0
MR9/VO1/VO2-M-ISS/VIS-5-CLOUD-V1.0
MR9/VO1/VO2-M-RSS-5-GRAVITY V1.0
MSG-M-ER-3-OMNIDIRFLUX-V1.0
MSG-M-MAGER-3-FULLRESMAG-V1.0
MSSSO-J-CASPIR-3-RDR-SL9-STDS-V1.0
MSSSO-J-CASPIR-3-RDR-SL9-V1.0
NDC8-E-ASAR-3-RDR-IMAGE-V1.0
NDC8-E-ASAR-4-RADAR-V1.0
NEAR-A-MAG-2-EDR-ER/FAR/APPROACH-V1.0
NEAR-A-MSI-2-EDR-ER/FAR/APPROACH-V1.0
NEAR-A-NIS-2-EDR-ER/FAR/APPROACH-V1.0
NEAR-A-NLR-2-EDR-ER/FAR/APPROACH-V1.0
NEAR-A-SPICE-6-ER/FAR/APPROACH-V1.0
NEAR-A-XGRS-2-EDR-ER/FAR/APPROACH-V1.0
NEAR-MSI-6-RDR-INSTRUMENT-INFO-V1.0
OAO-J-OASIS-3-RDR-SL9-V1.0
ODY-M-ACCEL-2-EDR-V1.0
ODY-M-ACCEL-5-ALTITUDE-V1.0
ODY-M-ACCEL-5-PROFILE-V1.2
ODY-M-GRS-2-EDR-V1.0
ODY-M-MAR-2-EDR-RAW-COUNTS-V1.0
ODY-M-MAR-2-REDR-RAW-DATA-V1.0
ODY-M-MAR-3-EDR-RAW-COUNTS-V1.0
ODY-M-MAR-3-RDR-CALIBRATED-DATA-V1.0
ODY-M-RSS-1-RAW-V1.0
ODY-M-SACCEL-2-EDR-V1.0
ODY-M-SACCEL-5-ALTITUDE-V1.0
ODY-M-SACCEL-5-PROFILE-V1.0
ODY-M-SPICE-6-SPK-V1.0
ODY-M-SPICE-6-V1.0
ODY-M-THM-2-IREDR-V1.0
ODY-M-THM-2-VISEDR-V1.0
ODY-M-THM-3-IRRDR-V1.0
ODY-M-THM-3-VISRDR-V1.0
P12-V-ORAD-4-ALT/RAD-V1.0
P12-V-ORAD-5-BACKSCATTER-V1.0
P12-V-ORAD-5-RADAR-IMAGE-V1.0
P12-V-RSS-4-LOS-GRAVITY-V1.0
PVO-V-OCPP-5-PMDR-V1.0
PVO-V-OEFD-3--EFIELD-HIRES-V1.0
PVO-V-OEFD-4--EFIELD-24SEC-V1.0
PVO-V-OETP-3-HIRESELECTRONS-V1.0
PVO-V-OETP-5-BOWSHOCKLOCATION-V1.0
PVO-V-OETP-5-IONOPAUSELOCATION-V1.0
PVO-V-OETP-5-LORESELECTRONS-V1.0

PVO-V-OETP-5-SOLAREUV-24HRAVG-V1.0
PVO-V-OMAG-3--SCCOORDS-HIRES-V1.0
PVO-V-OMAG-4--SCCOORDS-24SEC-V1.0
PVO-V-ONMS-3-NEUTRALDENSITY-HIRES-V1.0
PVO-V-ONMS-3-SUPERTHRMLOXYGN-HIRES-V1.0
PVO-V-ONMS-4-IONMAXCOUNTRATE-12SEC-V1.0
PVO-V-ONMS-4-NEUTRALDENSITY-12SEC-V1.0
PVO-V-ONMS-4-SUPERTHRMLOXYGN-12SEC-V1.0
PVO-V-ONMS-4-THERMALION-12SEC-V1.0
PVO-V-ONMS-5-SUPERTHERMALIONLOC-V1.0
PVO-V-ORAD-2-PVRA-V1.0
PVO-V-OUVS-5-IMIDR-V1.0
PVO-V-POS-5--VSOCOORDS-12SEC-V1.0
PVO-V-POS-6-SEDR-ORBITATTITUDE--V1.0
SAKIG-C-IMF-3-RDR-HALLEY-V1.0
SAKIG-C-SOW-3-RDR-HALLEY-V1.0
SUISEI-C-ESP-3-RDR-HALLEY-V1.0
ULY-D-UDDS-5-DUST-V1.1
ULY-D-UDDS-5-DUST-V2.0
ULY-J-COSPIN-AT-4-FLUX-256SEC-V1.0
ULY-J-COSPIN-HET-3-RDR-FLUX-HIRES-V1.0
ULY-J-COSPIN-HFT-3-RDR-FLUX-HIRES-V1.0
ULY-J-COSPIN-KET-3-RDR-INTENS-HIRES-V1.0
ULY-J-COSPIN-KET-3-RDR-RAW-HIRES-V1.0
ULY-J-COSPIN-LET-3-RDR-FLUX-32SEC-V1.0
ULY-J-EPAC-4-SUMM-ALL-CHAN-1HR-V1.0
ULY-J-EPAC-4-SUMM-OMNI-ELE-FLUX-1HR-V1.0
ULY-J-EPAC-4-SUMM-OMNI-PRO-FLUX-1HR-V1.0
ULY-J-EPAC-4-SUMM-PRTL2-FLUX-1HR-V1.0
ULY-J-EPAC-4-SUMM-PRTL3-FLUX-1HR-V1.0
ULY-J-EPAC-4-SUMM-PSTL1-FLUX-1HR-V1.0
ULY-J-EPAC-4-SUMM-PSTL2-FLUX-1HR-V1.0
ULY-J-EPAC-4-SUMM-PSTL3-FLUX-1HR-V1.0
ULY-J-EPAC-4-SUMM-PSTL4-FLUX-1HR-V1.0
ULY-J-EPHEM-6-SUMM-SYS3/ECL50-V1.0
ULY-J-GAS-8-NO-DATA-V1.0
ULY-J-GRB-2-RDR-RAW-COUNT-RATE-V1.0
ULY-J-GWE-8-NULL-RESULTS-V1.0
ULY-J-HISCALE-4-SUMM-DE-V1.0
ULY-J-HISCALE-4-SUMM-LEFS150-V1.0
ULY-J-HISCALE-4-SUMM-LEFS60-V1.0
ULY-J-HISCALE-4-SUMM-LEMS120-V1.0
ULY-J-HISCALE-4-SUMM-LEMS30-V1.0
ULY-J-HISCALE-4-SUMM-W-V1.0
ULY-J-HISCALE-4-SUMM-WARTD-V1.0
ULY-J-SCE-1-ROCC-V1.0
ULY-J-SCE-1-TDF-V1.0
ULY-J-SCE-3-RDR-DOPPLER-HIRES-V1.0
ULY-J-SCE-4-SUMM-RANGING-10MIN-V1.0
ULY-J-SPICE-6-SPK-V1.0
ULY-J-SWICS-8-NO-DATA-V1.0
ULY-J-SWOOPS-5-RDR-PLASMA-HIRES-V1.0
ULY-J-URAP-4-SUMM-PFR-AVG-E-10MIN-V1.0

ULY-J-URAP-4-SUMM-PFR-PEAK-E-10MIN-V1.0
ULY-J-URAP-4-SUMM-RAR-AVG-E-10MIN-V1.0
ULY-J-URAP-4-SUMM-RAR-AVG-E-144S-V1.0
ULY-J-URAP-4-SUMM-RAR-PEAK-E-10MIN-V1.0
ULY-J-URAP-4-SUMM-WFA-AVG-B-10MIN-V1.0
ULY-J-URAP-4-SUMM-WFA-AVG-E-10MIN-V1.0
ULY-J-URAP-4-SUMM-WFA-PEAK-B-10MIN-V1.0
ULY-J-URAP-4-SUMM-WFA-PEAK-E-10MIN-V1.0
ULY-J-VHM/FGM-4-SUMM-JGCOORDS-60S-V1.0
UNK
VEGA1-C-DUCMA-3-RDR-HALLEY-V1.0
VEGA1-C-IKS-2-RDR-HALLEY-V1.0
VEGA1-C-IKS-3-RDR-HALLEY-PROCESSED-V1.0
VEGA1-C-PM1-2-RDR-HALLEY-V1.0
VEGA1-C-PUMA-2-RDR-HALLEY-V1.0
VEGA1-C-PUMA-3-RDR-HALLEY-PROCESSED-V1.0
VEGA1-C-SP1-2-RDR-HALLEY-V1.0
VEGA1-C-SP2-2-RDR-HALLEY-V1.0
VEGA1-C-TNM-2-RDR-HALLEY-V1.0
VEGA1-C-TVS-2-RDR-HALLEY-V1.0
VEGA1-C-TVS-3-RDR-HALLEY-PROCESSED-V1.0
VEGA2-C-DUCMA-3-RDR-HALLEY-V1.0
VEGA2-C-PM1-2-RDR-HALLEY-V1.0
VEGA2-C-PUMA-2-RDR-HALLEY-V1.0
VEGA2-C-PUMA-3-RDR-HALLEY-PROCESSED-V1.0
VEGA2-C-SP1-2-RDR-HALLEY-V1.0
VEGA2-C-SP2-2-RDR-HALLEY-V1.0
VEGA2-C-TVS-2-RDR-HALLEY-V1.0
VEGA2-C-TVS-3-RDR-HALLEY-PROCESSED-V1.0
VEGA2-C-TVS-5-RDR-HALLEY-TRANSFORM-V1.0
VG1-J-CRS-5-SUMM-FLUX-V1.0
VG1-J-LECP-4-15MIN
VG1-J-LECP-4-BR-15MIN
VG1-J-LECP-4-SUMM-AVERAGE-15MIN-V1.1
VG1-J-LECP-4-SUMM-SECTOR-15MIN-V1.1
VG1-J-MAG-4-1.92SEC
VG1-J-MAG-4-48.0SEC
VG1-J-MAG-4-9.60SEC
VG1-J-MAG-4-RDR-HGCOORDS-1.92SEC-V1.0
VG1-J-MAG-4-RDR-HGCOORDS-9.60SEC-V1.0
VG1-J-MAG-4-RDR-S3COORDS-1.92SEC-V1.1
VG1-J-MAG-4-RDR-S3COORDS-9.60SEC-V1.1
VG1-J-MAG-4-SUMM-HGCOORDS-48.0SEC-V1.0
VG1-J-MAG-4-SUMM-S3COORDS-48.0SEC-V1.1
VG1-J-PLS-5-ION-MOM-96.0SEC
VG1-J-PLS-5-SUMM-ELE-MOM-96.0SEC-V1.1
VG1-J-PLS-5-SUMM-ION-INBNDSWIND-96S-V1.0
VG1-J-PLS-5-SUMM-ION-L-MODE-96S-V1.0
VG1-J-PLS-5-SUMM-ION-M-MODE-96S-V1.0
VG1-J-PLS-5-SUMM-ION-MOM-96.0SEC-V1.1
VG1-J-PLS/PRA-5-ELE-MOM-96.0SEC
VG1-J-POS-4-48.0SEC
VG1-J-POS-6-SUMM-HGCOORDS-V1.0

VG1-J-POS-6-SUMM-S3COORDS-V1.1
VG1-J-PRA-3-RDR-6SEC-V1.0
VG1-J-PRA-4-SUMM-BROWSE-48SEC-V1.0
VG1-J-PWS-2-RDR-SA-4.0SEC-V1.1
VG1-J-PWS-2-SA-4.0SEC
VG1-J-PWS-4-SA-48.0SEC
VG1-J-PWS-4-SUMM-SA-48.0SEC-V1.1
VG1-J-SPICE-6-SPK-V2.0
VG1-J-UVS-3-RDR-V1.0
VG1-J/S/SS-PWS-1-EDR-WFRM-60MS-V1.0
VG1-S-LECP-4-15MIN
VG1-S-LECP-4-BR-15MIN
VG1-S-MAG-4-1.92SEC
VG1-S-MAG-4-48.0SEC
VG1-S-MAG-4-9.60SEC
VG1-S-PLS-5-ELE-BR-96.0SEC
VG1-S-PLS-5-ELE-PAR-96.0SEC
VG1-S-PLS-5-ION-FBR-96.0SEC
VG1-S-PLS-5-ION-FIT-96.0SEC
VG1-S-PLS-5-ION-MOM-96.0SEC
VG1-S-POS-4-48.0SEC
VG1-S-PWS-2-SA-4.0SEC
VG1-S-PWS-4-SA-48.0SEC
VG1-S-RSS-1-ROCC-V1.0
VG1-S-UVS-3-RDR-V1.0
VG1-SSA-RSS-1-ROCC-V1.0
VG1/VG2-J-IRIS-3-RDR-V1.0
VG1/VG2-J-IRIS-5-GRS-ATMOS-PARAMS-V1.0
VG1/VG2-J-IRIS-5-NS-ATMOS-PARAMS-V1.0
VG1/VG2-J-ISS-2-EDR-V2.0
VG1/VG2-J-ISS-2-EDR-V3.0
VG1/VG2-J-UVS-5-BRIGHTNESS-N/S-MAPS-V1.0
VG1/VG2-S-IRIS-3-RDR-V1.0
VG1/VG2-S-IRIS-5-NS-ATMOS-PARAMS-V1.0
VG1/VG2-S-ISS-2-EDR-V1.0
VG1/VG2-S-ISS-2-EDR-V2.0
VG1/VG2-S-UVS-5-BRIGHTNESS-N/S-MAPS-V1.0
VG1/VG2-SR/UR/NR-RSS-4-OCC-V1.0
VG2-J-LECP-4-15MIN
VG2-J-LECP-4-BR-15MIN
VG2-J-MAG-4-1.92SEC
VG2-J-MAG-4-48.0SEC
VG2-J-MAG-4-9.60SEC
VG2-J-PLS-5-ELE-MOM-96.0SEC
VG2-J-PLS-5-ION-MOM-96.0SEC
VG2-J-POS-4-48.0SEC
VG2-J-PRA-3-RDR-6SEC-V1.0
VG2-J-PWS-2-SA-4.0SEC
VG2-J-PWS-4-SA-48.0SEC
VG2-J-UVS-0--SL9-NULL-RESULTS-V1.0
VG2-J-UVS-3-RDR-V1.0
VG2-N-CRS-3-RDR-D1-6SEC-V1.0
VG2-N-CRS-4-SUMM-D1-96SEC-V1.0

VG2-N-CRS-4-SUMM-D2-96SEC-V1.0
VG2-N-IRIS-3-RDR-V1.0
VG2-N-ISS-2-EDR-V1.0
VG2-N-LECP-4-RDR-STEP-12.8MIN-V1.0
VG2-N-LECP-4-SUMM-SCAN-24SEC-V1.0
VG2-N-MAG-4-RDR-HGCOORDS-1.92SEC-V1.0
VG2-N-MAG-4-RDR-HGCOORDS-9.6SEC-V1.0
VG2-N-MAG-4-SUMM-HGCOORDS-48SEC-V1.0
VG2-N-MAG-4-SUMM-NLSCOORDS-12SEC-V1.0
VG2-N-PLS-5-RDR-2PROMAGSPH-48SEC-V1.0
VG2-N-PLS-5-RDR-ELEMAGSPHERE-96SEC-V1.0
VG2-N-PLS-5-RDR-IONINBNDWIND-48SEC-V1.0
VG2-N-PLS-5-RDR-IONLMODE-48SEC-V1.0
VG2-N-PLS-5-RDR-IONMAGSPHERE-48SEC-V1.0
VG2-N-PLS-5-RDR-IONMMODE-12MIN-V1.0
VG2-N-POS-5-SUMM-HGCOORDS-48SEC-V1.0
VG2-N-POS-5-SUMM-NLSCOORDS-12SEC-V1.0
VG2-N-PRA-2-RDR-HIGHRATE-60MS-V1.0
VG2-N-PRA-4-SUMM-BROWSE-48SEC-V1.0
VG2-N-PWS-1-EDR-WFRM-60MS-V1.0
VG2-N-PWS-2-RDR-SA-4SEC-V1.0
VG2-N-PWS-4-SUMM-SA-48SEC-V1.0
VG2-N-UVS-3-RDR-V1.0
VG2-NSA-RSS-5-ROCC-V1.0
VG2-S-LECP-4-15MIN
VG2-S-LECP-4-BR-15MIN
VG2-S-MAG-4-1.92SEC
VG2-S-MAG-4-48.0SEC
VG2-S-MAG-4-9.60SEC
VG2-S-PLS-5-ELE-BR-96.0SEC
VG2-S-PLS-5-ELE-PAR-96.0SEC
VG2-S-PLS-5-ION-FBR-96.0SEC
VG2-S-PLS-5-ION-FIT-96.0SEC
VG2-S-PLS-5-ION-MOM-96.0SEC
VG2-S-POS-4-48.0SEC
VG2-S-PWS-2-SA-4.0SEC
VG2-S-PWS-4-SA-48.0SEC
VG2-S-RSS-1-ROCC-V1.0
VG2-S-UVS-3-RDR-V1.0
VG2-SR/UR/NR-PPS-1/2/4-OCC-V1.0
VG2-SR/UR/NR-PPS-4-OCC-V1.0
VG2-SR/UR/NR-UVS-4-OCC-V1.0
VG2-U-CRS-4-SUMM-D1-96SEC-V1.0
VG2-U-CRS-4-SUMM-D2-96SEC-V1.0
VG2-U-IRIS-3-RDR-V1.0
VG2-U-ISS-2-EDR-V1.0
VG2-U-LECP-4-RDR-SECTOR-15MIN-V1.0
VG2-U-LECP-4-RDR-STEP-12.8MIN-V1.0
VG2-U-LECP-4-SUMM-AVERAGE-15MIN-V1.0
VG2-U-LECP-4-SUMM-SCAN-24SEC-V1.0
VG2-U-MAG-4-RDR-HGCOORDS-1.92SEC-V1.0
VG2-U-MAG-4-RDR-HGCOORDS-9.6SEC-V1.0
VG2-U-MAG-4-RDR-U1COORDS-1.92SEC-V1.0

VG2-U-MAG-4-RDR-U1COORDS-9.6SEC-V1.0
VG2-U-MAG-4-SUMM-HGCOORDS-48SEC-V1.0
VG2-U-MAG-4-SUMM-U1COORDS-48SEC-V1.0
VG2-U-PLS-5-RDR-ELEFIT-48SEC-V1.0
VG2-U-PLS-5-RDR-IONFIT-48SEC-V1.0
VG2-U-PLS-5-SUMM-ELEBR-48SEC-V1.0
VG2-U-PLS-5-SUMM-IONBR-48SEC-V1.0
VG2-U-POS-5-SUMM-HGCOORDS-48SEC-V1.0
VG2-U-POS-5-SUMM-U1COORDS-48SEC-V1.0
VG2-U-PRA-2-RDR-HIGHRATE-60MS-V1.0
VG2-U-PRA-4-SUMM-BROWSE-48SEC-V1.0
VG2-U-PWS-1-EDR-WFRM-60MS-V1.0
VG2-U-PWS-2-RDR-SA-4SEC-V1.0
VG2-U-PWS-4-SUMM-SA-48SEC-V1.0
VG2-U-UVS-3-RDR-V1.0
VL1-M-MET-4-BINNED-P-T-V-CORR-V1.0
VL1/VL2-M-LCS-2-EDR-V1.0
VL1/VL2-M-LCS-5-ATMOS-OPTICAL-DEPTH-V1.0
VL1/VL2-M-LCS-5-ROCKS-V1.0
VL1/VL2-M-LR-2-EDR-V1.0
VL1/VL2-M-MET-3-P-V1.0
VL1/VL2-M-MET-4-BINNED-P-T-V-V1.0
VL1/VL2-M-MET-4-DAILY-AVG-PRESSURE-V1.0
VO1/VO2-M-IRTM-4-V1.0
VO1/VO2-M-IRTM-5-BINNED/CLOUDS-V1.0
VO1/VO2-M-MAWD-4-V1.0
VO1/VO2-M-VIS-2-EDR-BR-V2.0
VO1/VO2-M-VIS-2-EDR-V1.0
VO1/VO2-M-VIS-2-EDR-V2.0
VO1/VO2-M-VIS-5-DIM-V1.0
VO1/VO2-M-VIS-5-DTM-V1.0
VO2-M-RSS-4-LOS-GRAVITY-V1.0

DATA_SET_NAME FORMATION

120-COLOR LUNAR NIR SPECTROPHOTOMETRY DATA V1.0
2001 MARS ODYSSEY RADIO SCIENCE RAW DATA SET - EXT V1.0
52 COLOR ASTEROID SURVEY V1.0
AMES MARS GENERAL CIRCULATION MODEL 5 LAT LON VARIABLES V1.0
AMES MARS GENERAL CIRCULATION MODEL 5 LAT PRES VARIABLE V1.0
AMES MARS GENERAL CIRCULATION MODEL 5 LAT TIME VARIABLE V1.0
AMES MARS GENERAL CIRCULATION MODEL 5 LAT VARIABLES V1.0
AMES MARS GENERAL CIRCULATION MODEL 5 TIME VARIABLES V1.0
AMES MARS GENERAL CIRCULATION MODEL 5 TOPOGRAPHY V1.0
ARCB/GSSR M RADIO TELESC DERIVED RADAR MODEL UNIT MAP V1.0
ARECIBO MOON RADIO TELESC RESAMPLED 70 CM RADAR MOSAIC V1.0
ARECIBO MOON RADIO TELESCOPE CALIBRATED 70 CM RADAR V1.0
ARECIBO MOON RADIO TELESCOPE DERIVED 12.6 CM RADAR V1.0
ARECIBO VENUS RADIO TELESCOPE RESAMPLED 12.6 CM RADAR V1.0
ASTEROID 3-MICRON SURVEY V1.0
ASTEROID ABSOLUTE MAGNITUDES AND SLOPES V1.0
ASTEROID ABSOLUTE MAGNITUDES V2.0
ASTEROID ABSOLUTE MAGNITUDES V3.0

ASTEROID ABSOLUTE MAGNITUDES V4.0
ASTEROID ABSOLUTE MAGNITUDES V5.0
ASTEROID BIBLIOGRAPHY V1.0
ASTEROID DISCOVERY CIRCUMSTANCES V1.0
ASTEROID DYNAMICAL FAMILIES V2.0
ASTEROID DYNAMICAL FAMILIES V3.0
ASTEROID DYNAMICAL FAMILIES V4.0
ASTEROID FAMILY IDENTIFICATIONS V1.0
ASTEROID LIGHTCURVE DERIVED DATA REFERENCES V1.0
ASTEROID LIGHTCURVE DERIVED DATA V1.0
ASTEROID LIGHTCURVE DERIVED DATA V2.0
ASTEROID LIGHTCURVE DERIVED DATA V3.0
ASTEROID LIGHTCURVE DERIVED DATA V4.0
ASTEROID NAMES AND DESIGNATIONS V1.0
ASTEROID NAMES AND DESIGNATIONS V2.0
ASTEROID NAMES AND DISCOVERY V1.0
ASTEROID NAMES AND DISCOVERY V2.0
ASTEROID NAMES AND DISCOVERY V3.0
ASTEROID NAMES AND DISCOVERY V4.0
ASTEROID NAMES AND DISCOVERY V5.0
ASTEROID PHOTOMETRIC CATALOG V1.0
ASTEROID POLARIMETRIC DATABASE V1.0
ASTEROID POLARIMETRIC DATABASE V2.0
ASTEROID POLARIMETRIC DATABASE V3.0
ASTEROID POLARIMETRIC DATABASE V4.0
ASTEROID POLE POSITIONS REFERENCES V1.0
ASTEROID POLE POSITIONS V1.0
ASTEROID POLE POSITIONS_REFERENCES V1.0
ASTEROID PROPER ELEMENTS V1.0
ASTEROID RADAR V1.0
ASTEROID RADAR V3.0
ASTEROID RADAR V4.0
ASTEROID RADAR V5.0
ASTEROID RADAR V6.0
ASTEROID RADAR V7.0
ASTEROID RADAR V7.1
ASTEROID SPIN VECTORS V3.0
ASTEROID SPIN VECTORS V4.0
ASTEROID TAXONOMY V1.0
ASTEROID TAXONOMY V2.0
ASTEROID TAXONOMY V3.0
Anglo-Australian Observatory Data from SL9 Impacts
C130 EARTH ASAS CALIBRATED REDUCED DATA RECORD IMAGE V1.0
C130 EARTH TIMS EDITED EXPERIMENT DATA RECORD IMAGE V1.0
CLEM1 LUNAR GRAVITY V1.0
CLEM1 LUNAR RADIO SCIENCE INTERMEDIATE AND REDUCED BISTATIC
CLEM1 LUNAR RADIO SCIENCE RAW BISTATIC RADAR V1.0
CLEM1 LUNAR TOPOGRAPHY V1.0
CLEM1-LUN/EAR/SKY-ASTAR/BSTAR/UVVIS/HRES/LWIR/NIR-2-EDR-V1.0
CLEMENTINE BASEMAP MOSAIC
CLEMENTINE HIRES MOSAIC
CLEMENTINE UVVIS DIGITAL IMAGE MODEL
EARTH APPROACHING OBJECTS V1.0

EARTH ASTEROID 8CPS SURVEY REFLECT SPECTRA V1.0
EARTH ASTEROID DBP 24COLOR SURVEY V1.0
EIGHT COLOR ASTEROID SURVEY FILTER CURVES V1.0
EIGHT COLOR ASTEROID SURVEY MEAN DATA V1.0
EIGHT COLOR ASTEROID SURVEY PRIMARY DATA V1.0
EIGHT COLOR ASTEROID SURVEY PRINCIPAL COMPONENTS V1.0
EIGHT COLOR ASTEROID SURVEY STANDARD STARS V1.0
EIGHT COLOR ASTEROID SURVEY V2.0
ER2 EARTH AVIRIS CALIBRATED REDUCED DATA RECORD IMAGE V1.0
ESO NTT EMMI IMAGE DATA FROM SL9 IMPACTS WITH JUPITER V1.0
ESO NTT IRSPEC IMAGE DATA FROM SL9 IMPACTS WITH JUPITER V1.0
ESO NTT SUSI IMAGE DATA FROM SL9 IMPACTS WITH JUPITER V1.0
FIELD EXP E AWND CALIB RDR TEMPERATURE AND VELOCITY V1.0
FIELD EXP E DAEDALUS SPECTROMETER CALIB RDR SPECTRUM V1.0
FIELD EXP E GPSM DERIVED RDR TOPOGRAPHIC PROFILES V1.0
FIELD EXP E HSTP RESAMPLED RDR TOPOGRAPHIC PROFILES V1.0
FIELD EXP E RANGER II PLUS RDMT & THRM CALIB RDR TEMP V1.0
FIELD EXP E REAG CALIBRATED RDR OPTICAL DEPTH V1.0
FIELD EXP E SHYG CALIBRATED RDR OPTICAL DEPTH V1.0
FIELD EXP E SIRIS RESAMP REDUCED DATA RECORD SPECTRUM V1.0
FIELD EXP E WTHS CALIB RDR TEMPERATURE AND VELOCITY V1.0
FIELD EXP EARTH PARABOLA CALIBRATED RDR SPECTRUM V1.0
FIELD EXP EARTH PFES CALIBRATED RDR SPECTRUM V1.0
GAFFEY METEORITE SPECTRA V1.0
GALILEO DUST DETECTION SYSTEM V2.0
GALILEO ORBITAL OPERATIONS SOLID STATE IMAGING 2 RAW EDR V1
GALILEO ORBITAL OPERATIONS SOLID STATE IMAGING RAW EDR V1.0
GALILEO ORBITER ASTEROID AND COMET SL9 SOLID STATE IMAGING 2
GALILEO ORBITER ASTEROID AND EARTH 2 SOLID STATE IMAGING 2 R
GALILEO ORBITER VENUS AND EARTH SOLID STATE IMAGING 2 RAW ED
GALILEO PROBE ASI RAW DATA SET
GALILEO PROBE DOPPLER WIND EXPERIMENT DATA V1.0
GALILEO PROBE EPI RAW DATA SET
GALILEO PROBE HELIUM ABUNDANCE DETECTOR DATA V1.0
GALILEO PROBE LRD RAW DATA SET
GALILEO PROBE NEP RAW DATA SET
GALILEO PROBE NET FLUX RADIOMETER DATA V1.0
GALILEO PROBE NMS RAW DATA SET
GALILEO VENUS RANGE FIX RAW DATA V1.0
GEOGRAPHOS RADAR V1.0
GIOTTO DUST IMPACT DETECTOR SYSTEM DATA V1.0
GIOTTO HALLEY MULTICOLOR CAMERA IMAGES V1.0
GIOTTO ION MASS SPECTROMETER HIGH ENERGY RANGE DATA V1.0
GIOTTO ION MASS SPECTROMETER HIGH INTENSITY DATA V1.0
GIOTTO JOHNSTONE PARTICLE ANALYZER MERGED DATA V1.0
GIOTTO MAGNETOMETER 8 SECOND DATA V1.0
GIOTTO OPTICAL PROBE PHASE MEASUREMENTS V1.0
GIOTTO PARTICLE IMPACT ANALYZER DUST MASS SPECTRA V1.0
GIOTTO RADIO SCIENCE EXPERIMENT DATA V1.0
GLL CAL PPR EARTH-2 ENCOUNTER EDR
GLL EARTH EUV EARTH ENCOUNTER EDR
GLL EARTH MOON PPR EARTH-1 ENCOUNTER RDR
GLL EARTH MOON PPR EARTH-2 ENCOUNTER RDR

GLL EARTH PPR EARTH-1 ENCOUNTER EDR
GLL EARTH UVS EARTH ENCOUNTER EDR
GLL EARTH UVS EARTH ENCOUNTER RDR
GLL IDA UVS IDA ENCOUNTER EDR
GLL IDA UVS IDA ENCOUNTER RDR
GLL JUPITER UVS JUPITER ENCOUNTER RDR
GLL MOON PPR EARTH-1 ENCOUNTER EDR
GLL PPR GASPRA ENCOUNTER EDR
GLL PPR GASPRA ENCOUNTER RDR
GLL PPR IDA ENCOUNTER RDR
GLL PPR INITIAL CHECKOUT RDR
GLL PROBE ASI RDR
GLL PROBE DWE RDR
GLL PROBE EPI RDR
GLL PROBE HAD RDR
GLL PROBE LRD RDR
GLL PROBE NEP RDR
GLL PROBE NFR RDR
GLL PROBE NMS RDR
GLL VENUS EUV VENUS ENCOUNTER EDR
GLL VENUS PPR VENUS ENCOUNTER EDR
GLL VENUS PPR VENUS ENCOUNTER RDR
GLL VENUS UVS VENUS ENCOUNTER EDR
GLL VENUS UVS VENUS ENCOUNTER RDR
GLL X PPR EARTH-2 ENCOUNTER EDR
GO JUPITER/SHOEMAKER-LEVY 9 PPR CALIB FRAG G/H/L/Q1 V1.0
GO NIMS TABULAR DATA FROM THE SL9 IMPACT WITH JUPITER V1.0
GO UVS TABULAR DATA FROM THE SL9 IMPACT WITH JUPITER V1.0
GO UVS TABULAR DATA FROM THE SL9-G IMPACT WITH JUPITER V1.0
GOLDSTONE MARS RADIO TELESCOPE DERIVED ALTIMETRY V1.0
GOLDSTONE MERCURY RADIO TELESCOPE RESAMPLED ALTIMETRY V1.0
GSSR V RTLS 5 12.6-12.9CM RADAR SCALED ECHO POWER/ALT V1.0
Galileo Earth Energetic Particles Detector (EPD) Experimenta
Galileo Earth Gaspra Energetic Particles Detector (EPD) Expe
Galileo Orbiter EUV Jupiter operations EDR data
Galileo Orbiter PPR Reduced Data Record (RDR) V1.0
Galileo Orbiter PPR Reformatted EDR V1.0
Galileo Orbiter UVS Jupiter operations EDR data
Galileo Venus Energetic Particles Detector (EPD) Experimenta
HAYSTACK MOON RADIO TELESCOPE RESAMPLED 3.8 CM RADAR V1.0
HST J FOS SL9 IMPACT V1.0
HST J GHRS SL9 IMPACT V1.0
HST J WFPC2 SL9 IMPACT V1.0
HST SATURN WFPC2 3 RING PLANE CROSSING V1.0
ICE ENERGETIC PARTICLE ANISOTROPY SPECTROMETER DATA V1.0
ICE MAGNETOMETER DATA V1.0
ICE PLASMA WAVE ELECTRIC FIELD MEASUREMENT DATA
ICE PLASMA WAVE MAGNETIC FIELD MEASUREMENT DATA V1.0
ICE RADIO WAVE ELECTRON MAPPING DATA V1.0
ICE SOLAR WIND PLASMA ELECTRON ANALYSER DATA V1.0
IHW COMET AMDRAW NO-DATA DATA RECORD GZ V1.O
IHW COMET AMSPEC NO-DATA DATA RECORD GZ V1.0
IHW COMET AMVIS EDITED REDUCED DATA RECORD CROMMELIN V1.0

IHW COMET AMVIS EDITED REDUCED DATA RECORD GZ V1.0
IHW COMET ASTR EDITED EXPERIMENT DATA RECORD CROMMELIN V1.0
IHW COMET ASTR EDITED EXPERIMENT DATA RECORD GZ V1.0
IHW COMET HALLEY - U-V VISIBILITY DATA
IHW COMET HALLEY AMATEUR VISUAL MAGNITUDES V1.0
IHW COMET HALLEY ASTROMETRIC DATA V1.0
IHW COMET HALLEY DIGITIZED PHOTOGRAPHIC SPECTRA V1.0
IHW COMET HALLEY INFRARED FILTER CURVE MEASUREMENTS V1.0
IHW COMET HALLEY INFRARED FILTER TABLES V1.0
IHW COMET HALLEY INFRARED IMAGE DATA V1.0
IHW COMET HALLEY INFRARED PHOTOMETRY V1.0
IHW COMET HALLEY INFRARED POLARIMETRY V1.0
IHW COMET HALLEY INFRARED SPECTRA REFERENCES V1.0
IHW COMET HALLEY LSPN IMAGE DATA V1.0
IHW COMET HALLEY LSPN NON-DIGITIZED IMAGES V1.0
IHW COMET HALLEY METEOR ETA AQUARID RADAR DATA V1.0
IHW COMET HALLEY METEOR ETA AQUARID VISUAL DATA V1.0
IHW COMET HALLEY METEOR ORIONID RADAR DATA V1.0
IHW COMET HALLEY METEOR ORIONID VISUAL DATA V1.0
IHW COMET HALLEY NEAR NUCLEUS IMAGE DATA V1.0
IHW COMET HALLEY NON_DIGITAL PHOTOGRAPHIC MATERIAL V1.0
IHW COMET HALLEY PHOTOMETRIC FLUXES V1.0
IHW COMET HALLEY PHOTOMETRIC MAGNITUDES V1.0
IHW COMET HALLEY POLARIMETRIC OBSERVATIONS V1.0
IHW COMET HALLEY POLARIMETRIC STOKES PARAMETERS DATA V1.0
IHW COMET HALLEY RADAR DATA V1.0
IHW COMET HALLEY RADIO CONTINUUM ARRAY DATA V1.0
IHW COMET HALLEY RADIO CONTINUUM SUMMARIES V1.0
IHW COMET HALLEY RADIO OCCULTATION GRIDDED DATA V1.0
IHW COMET HALLEY RADIO SPECTRAL DATA V1.0
IHW COMET HALLEY RADIO SPECTRAL MEASUREMENTS V1.0
IHW COMET HALLEY REDUCED SPECTROSCOPIC OBSERVATIONS V1.0
IHW COMET HALLEY UNREDUCED SPECTRA V1.0
IHW COMET IRFTAB EDITED REDUCED DATA RECORD CROMMELIN V1.0
IHW COMET IRFTAB EDITED REDUCED DATA RECORD GZ V1.0
IHW COMET IRIMAG CALIBRATED EXPERIMENT DATA RECORD GZ V1.0
IHW COMET IRIMAG NO-DATA DATA RECORD GZ V1.O
IHW COMET IRPHOT EDITED REDUCED DATA RECORD CROMMELIN V1.0
IHW COMET IRPHOT EDITED REDUCED DATA RECORD GZ V1.0
IHW COMET IRPOL EDITED REDUCED DATA RECORD GZ V1.0
IHW COMET IRSPEC CALIBRATED EXPERIMENT DATA RECORD GZ V1.0
IHW COMET LSPN DERIVED DIGITIZED IMG DATA REC CROMMELIN V1.0
IHW COMET LSPN EDITED DIGITALIZED IMAGE DATA RECORD GZ V1.0
IHW COMET LSPN NO-DATA DATA RECORD CROMMELIN V1.0
IHW COMET LSPN NO-DATA DATA RECORD GZ V1.O
IHW COMET NNSN CALIB EXPERIMENT DATA RECORD CROMMELIN V1.0
IHW COMET NNSN CALIBRATED EXPERIMENT DATA RECORD GZ V1.0
IHW COMET PPFLX CALIB REDUCED DATA RECORD CROMMELIN V1.0
IHW COMET PPFLX CALIBRATED REDUCED DATA RECORD GZ V1.0
IHW COMET PPMAG CALIB REDUCED DATA RECORD CROMMELIN V1.0
IHW COMET PPMAG CALIBRATED REDUCED DATA RECORD GZ V1.0
IHW COMET PPOL CALIBRATED REDUCED DATA RECORD CROMMELIN V1.0
IHW COMET PPOL CALIBRATED REDUCED DATA RECORD GZ V1.0

IHW COMET RSCN CALIB EXPERIMENT DATA RECORD CROMMELIN V1.0
IHW COMET RSCN NO-DATA DATA RECORD CROMMELIN V1.0
IHW COMET RSCN NO-DATA DATA RECORD GZ V1.O
IHW COMET RSOC CALIBRATED EXPERIMENT DATA RECORD GZ V1.0
IHW COMET RSOH CALIB EXPERIMENT DATA RECORD CROMMELIN V1.0
IHW COMET RSOH CALIBRATED EXPERIMEMT DATA RECORD GZ V1.0
IHW COMET RSOH NO-DATA DATA RECORD CROMMELIN V1.0
IHW COMET RSSL NO DATA DATA RECORD CROMMELIN V1.0
IHW COMET RSSL NO-DATA DATA RECORD GZ V1.0
IHW COMET SPEC CALIB EXPERIMENT DATA RECORD CROMMELIN V1.0
IHW COMET SPEC CALIBRATED EXPERIMENT DATA RECORD GZ V1.0
IHW COMET SPEC EDITED DIGITALIZED IMAGE DATA RECORD GZ V1.0
IHW COMET SPEC EDITED DIGITIZED IMAGE RECORD CROMMELIN V1.0
IHW COMET SPEC EDITED EXPERIMENT DATA RECORD CROMMELIN V1.0
IHW COMET SPEC EDITED EXPERIMENT DATA RECORD GZ V1.0
IMPS DIAMETERS AND ALBEDOS V1.0
IRAS FOCAL PLANE ARRAY V1.0
IRAS LOW RESOLUTION ZODIACAL HISTORY FILE V1.0
IRAS MEDIUM RESOLUTION ZODIACAL HISTORY FILE V1.0
IRAS MINOR PLANET SURVEY ASTEROIDS V3.0
IRAS MINOR PLANET SURVEY ASTEROIDS V4.0
IRAS POSITION AND POINTING V1.0
IRAS SCAN HISTORY FILE V1.0
IRAS SPECTRAL RESPONSE V1.0
IRTF NSFCAM IMAGE DATA FROM THE SL9 IMPACT WITH JUPITER V1.0
IUE LWP DATA OF COMET SL9/JUPITER/IMPACT SITES
IUE LWP Data of CometS
IUE SWP DATA OF COMET SL9/JUPITER/IMPACT SITES
Keck Observatory Image Data from SL9 Impacts with Jupiter
LOWELL OBSERVATORY COMETARY DATABASE
LOWELL OBSERVATORY COMETARY DATABASE - PRODUCTION RATES
LP ATDF RAW RADIO SCIENCE TRACKING DATA V1.0
LP L RSS LINE OF SIGHT ACCELERATION PROFILES V1.0
LP LUNAR GRAVITY V1.0
LP MOON GRS/NS/APS RESAMPLED DATA V1.0
LP MOON MERGED TELEMETRY DATA V1.0
LP MOON SPACECRAFT ATTITUDE V1.0
LP MOON SPACECRAFT EPHEMERIS V1.0
LP MOON SPACECRAFT POSITION V1.0
LP MOON SUN PULSE DATA V1.0
LP MOON UPLINK COMMAND V1.0
LP NEUTRON COUNT MAPS V1.0
MAGELLAN BISTATIC RADAR RAW DATA RECORDS V1.0
MAGELLAN RADIO OCCULTATION RAW DATA RECORDS V2.0
MAGELLAN SURFACE CHARACTERISTICS VECTOR DATA RECORD
MAGELLAN V RSS 5 OCCULTATION PROFILE ABS H2SO4 VOLMIX V1.0
MAGELLAN V RSS 5 OCCULTATION PROFILE REF TEMP PRES DENS V1.0
MARINER 10 CALIBRATION SECOND ORDER DATA
MARINER 10 IMAGING ARCHIVE EXPERIMENT DATA RECORD
MARINER 9 MARS IMAGING SCI SUBSYSTEM EXP DATA RECORDS V1.0
MARINER9 IRIS RDR V1.0
MARS GLOBAL SURVEYOR RAW DATA SET - CRUISE V1.0
MARS GLOBAL SURVEYOR RAW DATA SET - EXT V1.0

MARS GLOBAL SURVEYOR RAW DATA SET - MAP V1.0
MARS GLOBAL SURVEYOR RAW DATA SET - MOI V1.0
MARS PATHFINDER RADIO TRACKING
MARS PATHFINDER ROVER MARS ENG 2/3 EDR/RDR VERSION 1.0
MARS PATHFINDER ROVER MARS ENGINEERING 2/3 EDR/RDR VERSION 1
MARS PATHFINDER ROVER MARS ROVER CAMERA 2 EDR VERSION 1.0
MGN ALTIMETER EXPERIMENT DATA RECORD ON COMPACT DISK
MGN ATDF RAW RADIO SCIENCE TRACKING DATA V1.0
MGN V RADAR SYSTEM DERIVED MIDR COMPRESSED ONCE V1.0
MGN V RADAR SYSTEM DERIVED MIDR COMPRESSED THRICE V1.0
MGN V RADAR SYSTEM DERIVED MIDR COMPRESSED TWICE V1.0
MGN V RDRS 5 COMPOSITE DATA RECORD ALT/RAD V1.0
MGN V RDRS 5 GLOBAL DATA RECORD EMISSIVITY V1.0
MGN V RDRS 5 GLOBAL DATA RECORD REFLECTIVITY V1.0
MGN V RDRS 5 GLOBAL DATA RECORD SLOPE V1.0
MGN V RDRS 5 GLOBAL DATA RECORD TOPOGRAPHIC V1.0
MGN V RDRS COMPRESSED BASIC IMAGE DATA RECORD CD ARCHIVE
MGN V RDRS DERIVED BASIC IMAGE DATA RECORD FULL RES V1.0
MGN V RDRS DERIVED DIGITAL IMAGE MAP DATA RECORD V1.0
MGN V RDRS DERIVED GLOBAL VECTOR DATA RECORD V1.0
MGN V RDRS DERIVED MOSAIC IMAGE DATA RECORD FULL RES V1.0
MGN V RDRS SPHERICAL HARMONIC AND TOPOGRAPHY MAP DATA V1.0
MGN V RSS LINE OF SIGHT ACCELERATION PROFILES V1.0
MGN V RSS LINE OF SIGHT ACCELERATION PROFILES V1.13
MGN V RSS SPHERICAL HARMONIC AND GRAVITY MAP DATA V1.0
MGS ACCELEROMETER RAW DATA RECORDS V1.0
MGS ACCELEROMETER RAW DATA RECORDS V1.1
MGS ALTITUDE DATA RECORDS V1.1
MGS M THERMAL EMISSION SPECTROMETER 3 TSDR V2.0
MGS MARS ACCELEROMETER CONSTANT ALTITUDE V1.0
MGS MARS ACCELEROMETER ORBIT PROFILES V1.0
MGS MARS ELECTRON REFLECTOMETER OMNI DIR. ELECTRON FLUX V1.0
MGS MARS SPICE CK KERNELS V1.0
MGS MARS SPICE EK KERNELS V1.0
MGS MARS SPICE FK KERNELS V1.0
MGS MARS SPICE IK KERNELS V1.0
MGS MARS SPICE KERNELS V1.0
MGS MARS SPICE LSK KERNELS V1.0
MGS MARS SPICE PCK KERNELS V1.0
MGS MARS SPICE SCLK KERNELS V1.0
MGS MARS SPICE SPK KERNELS V1.0
MGS MARS TES SCIENCE DATA RECORD V1.0
MGS MARS/MOONS MAGER MAG FIELD SS/PC COORDS V1.0
MGS PROFILE DATA RECORDS V1.2
MGS RADIO SCIENCE -- SCIENCE DATA PRODUCTS V1.0
MGS SAMPLER MAGNETOMETER/ELECTRON REFLECTOMETER DATA
MGS SAMPLER MARS ORBITER LASER ALTIMETER PEDR ASCII TABLES
MGS SAMPLER THERMAL EMISSION SPECTROMETER CALIBRATED RADIANC
MGS SAMPLER THERMAL EMISSION SPECTROMETER GLOBAL TEMPERATURE
MGS SOLAR CONJUNCTION RAW DATA SET - ROCC V1.0
MO MARS RADIO SCIENCE 1 ORIGINAL/INTERMEDIATE DATA REC V1.0
MOC DSDP ARCHIVE
MOC SDP ARCHIVE

MOLA AGGREGATED EXPERIMENT DATA RECORD
MOLA INITIAL EXPERIMENT GRIDDED DATA RECORD
MOLA PRECISION EXPERIMENT DATA RECORD
MOLA PRECISION EXPERIMENT DATA RECORD ASCII TABLES
MOLA SPHERICAL HARMONICS TOPOGRAPHY MODEL
MPF LANDER MARS IMAGER FOR MARS PATHFINDER 2 EDR V1.0
MPF ROVER MARS ALPHA PROTON X-RAY SPECTROMETER DDR V1.0
MPF ROVER MARS ALPHA PROTON X-RAY SPECTROMETER EDR V1.0
MPFL MARS ATM STRUCT INST AND MET PKG CALIB SURFACE V1.0
MPFL MARS ATM STRUCT INST AND MET PKG DERIVED EDL V1.0
MPFL MARS ATM STRUCT INST AND MET PKG RAW AND CALIB EDL V1.0
MPFL MARS ATM STRUCT INST AND MET PKG RAW SURFACE V1.0
MPFR MARS ROVER CAMERA 5 MOSAICKED IMAGE DATA RECORD V1.0
MR6/MR7 MARS INFRARED SPECTROMETER CALIBRATED DATA V1.0
MR9/VO1/VO2 MARS IMAGING SCIENCE SUBSYSTEM/VIS 5 CLOUD V1.0
MSSSO CASPIR IMAGES FROM THE SL9 IMPACTS WITH JUPITER V1.0
MSSSO CASPIR STAR CALS BEFORE SL9 IMPACTS WITH JUPITER V1.0
McDonald Observatory Faint Comet Spectro-Photometric Survey
N/A
NASA DC-8 EARTH AIRSAR RESAMPLED RADAR IMAGES V1.0
NDC8 EARTH ASAR CALIBRATED REDUCED DATA RECORD IMAGE V1.0
NEAR MAG DATA FOR ER/FAR/APPROACH
NEAR MSI IMAGES FOR ER/FAR/APPROACH
NEAR MULTISPECTRAL IMAGER V1.0
NEAR NIS SPECTRA FOR ER/FAR/APPROACH
NEAR NLR DATA FOR ER/FAR/APPROACH
NEAR SPICE KERNELS ER/FAR/APPROACH
NEAR XGRS SPECTRA FOR ER/FAR/APPROACH
NIMS EXPERIMENT DATA RECORDS: EARTH/MOON 1 AND 2 ENCOUNTERS
NIMS EXPERIMENT DATA RECORDS: GASPRA/IDA ENCOUNTERS
NIMS EXPERIMENT DATA RECORDS: SL-9 COMET IMPACT WITH JUPITER
NIMS EXPERIMENT DATA RECORDS: VENUS ENCOUNTER
NIMS Spectral Image Cubes of Venus
NIMS Spectral Image Cubes of the Earth: E1 & E2 Encounters
NIMS Spectral Image Tubes of Venus
NIMS Spectral Image Tubes of the Earth: E1 & E2 Encounters
NIMS Spectral Image Tubes of the Moon: E1 & E2 Encounters
ODY MARS GAMMA RAY SPECTROMETER 2 EDR V1.0
ODY MARS SPICE KERNELS V1.0
ODYSSEY MARS ACCELEROMETER ALTITUDE DATA
ODYSSEY MARS ACCELEROMETER EDR DATA
ODYSSEY MARS ACCELEROMETER PROFILE DATA
ODYSSEY MARS ACCELEROMETER RAW DATA RECORDS V1.0
ODYSSEY MARS ALTITUDE DATA RECORDS V1.0
ODYSSEY MARS MARIE CALIBRATED DATA V1.0
ODYSSEY MARS MARIE RAW ENERGETIC PARTICLE DATA
ODYSSEY MARS MARIE REDUCED ENERGETIC PARTICLE DATA
ODYSSEY MARS MARIE REFORMATTED RAW DATA V1.0
ODYSSEY MARS PROFILE DATA RECORDS V1.0
ODYSSEY MARS PROFILE DATA RECORDS V1.2
ODYSSEY MARS SPICE DATA
ODYSSEY THEMIS IR EDR V1.0
ODYSSEY THEMIS IR RDR V1.0

ODYSSEY THEMIS VIS EDR V1.0
ODYSSEY THEMIS VIS RDR V1.0
P12 V ORBITING RADAR DERIVED BACKSCATTER CROSS SECTION V1.0
P12 V ORBITING RADAR RESAMPLED ALTIMETER/RADIOMETER V1.0
P12 V RADIO SCIENCE SUBSYSTEM RESAMPLED LOS GRAVITY V1.0
PHYSICAL CHARACTERISTICS OF COMETS
PIONEER 12 VENUS ORBITING RADAR DERIVED RADAR IMAGES V1.0
PLUTO-CHARON MUTUAL EVENTS V1.0
PVO V OCPP POLARIMETRY MAP DATA RECORD V1.0
PVO V OUVS INBOUND MONOCHROME IMAGE DATA RECORD V1.0
PVO V SUPP EXPERIMENT DATA RECORD SC ORBIT/ATTITUDE V1.0
PVO VENUS EFD CALIBRATED ELECTRIC FIELD HIGH RES. V1.0
PVO VENUS EFD RESAMP BROWSE ELECTRIC FIELD 24SEC AVGS V1.0
PVO VENUS ELECT TEMP PROBE CALIB HIGH RES ELECTRONS VER 1.0
PVO VENUS ELECT TEMP PROBE DERVD BOW SHOCK LOCATION VER 1.0
PVO VENUS ELECT TEMP PROBE DERVD ELECT DENS LOW RES VER 1.0
PVO VENUS ELECT TEMP PROBE DERVD IONOPAUSE LOCATION VER 1.0
PVO VENUS ELECT TMP PROBE RESAMP SOLAR EUV 24 HR AVG VER 1.0
PVO VENUS MAG CALIBRATED SC COORDINATES HIGH RES V1.0
PVO VENUS MAG RESAMPLED SC COORDS 24SEC AVGS V1.0
PVO VENUS ONMS BROWSE NEUTRAL DENSITY 12 SECOND V1.0
PVO VENUS ONMS BROWSE SUPERTHERMAL OXYGEN 12 SECOND V1.0
PVO VENUS ONMS BROWSE SUPRTHRML ION MAX COUNT RATE 12S V1.0
PVO VENUS ONMS BROWSE THERMAL ION 12 SECOND V1.0
PVO VENUS ONMS CALIBRATED NEUTRAL DENSITY HIGH RES. V1.0
PVO VENUS ONMS CALIBRATED SUPERTHERMAL OXYGEN HIGH RES. V1.0
PVO VENUS ONMS DERIVED SUPERTHERMAL ION LOCATION V1.0
PVO VENUS SC POSITION DERIVED VSO COORDS 12 SECOND VER1.0
RIVKIN THREE MICRON ASTEROID DATA V1.0
SAKIGAKE INTERPLANETARY MAGNETIC FIELD DATA V 1.0
SAKIGAKE SOLAR WIND EXPERIMENT DATA V1.0
SAWYER ASTEROID SPECTRA V1.0
SEVEN COLOR ASTEROID SURVEY V1.0
SMALL BODY SHAPE MODELS V1.0
SMALL BODY SHAPE MODELS V2.0
SMASS ASTEROID SURVEY V1.0
SPECTROPHOTOMETRY OF THE JOVIAN PLANETS AND TITAN
SUISEI ENERGY SPECTRUM PARTICLE MEASUREMENTS V1.0
South African Astron. Obs. Image Data from SL9 Impacts
South Pole IR Explorer Data from SL9 Impacts with Jupiter
THE OAO/OASIS JUPITER OBSERVATION OF SL9 FRAGMENT K V1.0
TNO PHOTOMETRY
TRIAD ASTEROID POLARIMETRY V1.0
TRIAD ASTEROID POLARIMETRY V2.0
UBV MEAN VALUES V1.0
ULY JUP COSPIN ANISOTROPY TELESCOPE 256 SEC. PARTICLE FLUX
ULY JUP COSPIN HIGH ENERGY TELESCOPE HIGH RES. PARTICLE FLUX
ULY JUP COSPIN HIGH FLUX TELESCOPE HIGH RES. ION FLUX
ULY JUP COSPIN KIEL ELE TEL HIRES PARTICLE RATES/INTENSITIES
ULY JUP COSPIN KIEL ELE TEL HIRES RAW PARTICLE COUNT RATES
ULY JUP COSPIN LOW ENERGY TELESCOPE 32 SEC PARTICLE FLUX
ULY JUP ENCOUNTER SWOOPS PLASMA HIRES DATA
ULY JUP GRB SOLAR X-RAY/COSMIC GAMMA-RAY RAW COUNT RATE

ULY JUP MAGNETIC FIELD JOVIGRAPHIC SYS III LH COORDS 60 AVGS
ULY JUP SCE DOPPLER HI-RES DATA
ULY JUP SCE RAW ARCHIVAL TRACKING DATA FILES V1.0
ULY JUP SCE RAW ODR V1.0
ULY JUP URAP PLASMA FREQ REC AVERAGE E-FIELD 10 MIN
ULY JUP URAP PLASMA FREQ REC PEAK E-FIELD 10 MIN
ULY JUP URAP RADIO ASTRONOMY REC AVERAGE E-FIELD 10 MIN
ULY JUP URAP RADIO ASTRONOMY REC AVERAGE E-FIELD 144 SEC
ULY JUP URAP RADIO ASTRONOMY REC PEAK E-FIELD 10 MIN
ULY JUP URAP WAVEFORM ANALYZER AVERAGE B-FIELD 10 MIN
ULY JUP URAP WAVEFORM ANALYZER AVERAGE E-FIELD 10 MIN
ULY JUP URAP WAVEFORM ANALYZER PEAK B-FIELD 10 MIN
ULY JUP URAP WAVEFORM ANALYZER PEAK E-FIELD 10 MIN
ULY JUPITER ENCOUNTER EPHEMERIS SYS3/ECL50 COORDS. VER. 1.0
ULY JUPITER GRAVITATIONAL WAVE EXPERIMENT NULL RESULTS
ULY JUPITER INTERSTELLAR NEUTRAL-GAS EXPERIMENT - NO DATA
ULY JUPITER SOLAR WIND ION COMPOSITION SPECTROMETER NO DATA
ULYSSES DUST DETECTION SYSTEM V2.0
ULYSSES DUST DETECTOR SYSTEM V1.0
ULYSSES JUP SPICE SPK KERNEL VERSION 1.0
ULYSSES JUPITER EPAC ALL DATA CHANNELS
ULYSSES JUPITER EPAC OMNI-DIRECTIONAL ELECTRON FLUX
ULYSSES JUPITER EPAC OMNI-DIRECTIONAL PROTON FLUX 1 HR AVGS.
ULYSSES JUPITER EPAC PROTON SPECTRAL DATA 1 HR V1.0
ULYSSES JUPITER EPAC PRTL2 SECTORED PROTON FLUX 1 HR V1.0
ULYSSES JUPITER EPAC PRTL3 SECTORED PROTON FLUX 1 HR V1.0
ULYSSES JUPITER EPAC PSTL1 PROTON SPECTRAL DATA 1 HR V1.0
ULYSSES JUPITER EPAC PSTL2 PROTON SPECTRAL DATA 1 HR V1.0
ULYSSES JUPITER HISCALE COMPOSITION APERTURE ION COUNTS
ULYSSES JUPITER HISCALE DEFLECTED ELECTRONS COUNTS
ULYSSES JUPITER HISCALE LEFS 150 ELECTRON/ION COUNTS
ULYSSES JUPITER HISCALE LEFS 60 ELECTRON/ION COUNTS
ULYSSES JUPITER HISCALE LEMS 120 ION COUNTS
ULYSSES JUPITER HISCALE LEMS 30 ION COUNTS
ULYSSES JUPITER HISCALE W ION COUNTS
ULYSSES JUPITER SOLAR CORONA EXPER. RANGING DATA 10 MIN AVG
UNKNOWN
VEGA1 DUST MASS SPECTROMETER MODAL DATA V1.0
VEGA1 DUST PARTICLE COUNTER MASS ANALYSER DATA V1.0
VEGA1 DUST PARTICLE IMPACT DETECTOR DATA V1.0
VEGA1 DUST PARTICLE IMPACT PLASMA DETECTOR DATA V1.0
VEGA1 INFRARED SPECTROMETER HIGH RESOLUTION DATA V1.0
VEGA1 INFRARED SPECTROMETER IMAGING CHANNEL DATA V1.0
VEGA1 PLASMAG-1 PLASMA ENERGY ANALYSER DATA V1.0
VEGA1 PUMA DUST MASS SPECTROMETER DATA V1.0
VEGA1 TUNDE-M ENERGETIC PARTICLE ANALYSER DATA V1.0
VEGA1 TV SYSTEM IMAGES PROCESSED BY KFKI V1.0
VEGA1 TV SYSTEM IMAGES V1.0
VEGA2 DUST PARTICLE COUNTER MASS ANALYSER DATA V1.0
VEGA2 DUST PARTICLE IMPACT DETECTOR DATA V1.0
VEGA2 DUST PARTICLE IMPACT PLASMA DETECTOR DATA V1.0
VEGA2 PLASMAG-1 PLASMA ENERGY ANALYSER DATA V1.0
VEGA2 PUMA DUST MASS SPECTROMETER DATA V1.0

VEGA2 PUMA DUST MASS SPECTROMETER MODAL DATA V1.0
VEGA2 TV SYSTEM IMAGES PROCESSED BY KFKI V1.0
VEGA2 TV SYSTEM IMAGES TRANSFORMED BY IKF V1.0
VEGA2 TV SYSTEM IMAGES V1.0
VG1 J/S/SS PLASMA WAVE SPECTROMETER RAW WAVEFORM 60MS V1.0
VG1 JUP CRS DERIVED PROTON/ION/ELECTRON FLUX BROWSE V1.0
VG1 JUP EPHEMERIS HELIOGRAPHIC COORDS BROWSE V1.0
VG1 JUP EPHEMERIS SYSTEM III (1965) COORDS BROWSE V1.1
VG1 JUP LECP CALIBRATED RESAMPLED SCAN AVERAGED 15MIN V1.1
VG1 JUP LECP CALIBRATED RESAMPLED SECTORED 15MIN V1.1
VG1 JUP MAG RESAMPLED HELIOGRAPHIC (RTN) COORDS 1.92SEC V1.0
VG1 JUP MAG RESAMPLED HELIOGRAPHIC (RTN) COORDS 48.0SEC V1.0
VG1 JUP MAG RESAMPLED HELIOGRAPHIC (RTN) COORDS 9.60SEC V1.0
VG1 JUP MAG RESAMPLED SYSTEM III (1965) COORDS 1.92SEC V1.1
VG1 JUP MAG RESAMPLED SYSTEM III (1965) COORDS 9.60SEC V1.1
VG1 JUP MAG/EPHEMERIS RESAMPLED SYS III (1965) 48.0SEC V1.1
VG1 JUP PLASMA DERIVED ELECTRON MOMENTS 96.0 SEC V1.1
VG1 JUP PLS DERIVED ION IN/OUTBND MAGSHTH L-MODE 96SEC V1.0
VG1 JUP PLS DERIVED ION INBOUND SOLAR WIND 96SEC V1.0
VG1 JUP PLS DERIVED ION OUTBND MAGSHTH M-MODE 96SEC V1.0
VG1 JUP PLS PLASMA DERIVED ION MOMENTS 96.0 SEC V1.1
VG1 JUP PRA RESAMPLED SUMMARY BROWSE 48SEC V1.0
VG1 JUP PWS EDITED SPECTRUM ANALYZER 4.0SEC V1.1
VG1 JUP PWS RESAMPLED SPECTRUM ANALYZER 48SEC V1.1
VG1 JUP RADIO ASTRONOMY REDUCED 6SEC V1.0
VG1 JUPITER SPICE SPK KERNEL V2.0
VG1 JUPITER ULTRAVIOLET SPECTROMETER SUBSYSTEM 3 RDR V1.0
VG1 SATURN ULTRAVIOLET SPECTROMETER SUBSYSTEM 3 RDR V1.0
VG1/VG2 JUPITER IMAGING SCIENCE SUBSYSTEM EDITED EDR V2.0
VG1/VG2 JUPITER IMAGING SCIENCE SUBSYSTEM EDITED EDR V3.0
VG1/VG2 JUPITER IRIS 3 RDR V1.0
VG1/VG2 JUPITER IRIS DERIVED GREAT RED SPOT PARAMETERS V1.0
VG1/VG2 RADIO SCIENCE RING OCCULTATION DATA V1.0
VG1/VG2 SATURN IMAGING SCIENCE SUBSYSTEM EDITED EDR V1.0
VG1/VG2 SATURN IMAGING SCIENCE SUBSYSTEM EDITED EDR V2.0
VG1/VG2 SATURN IMAGING SCIENCE SUSBSYSTEM EDITED EDR V1.0
VG1/VG2 SATURN IMAGING SCIENCE SUSBSYSTEM EDITED EDR V2.0
VG1/VG2 SATURN IRIS 3 RDR V1.0
VG2 JUP RADIO ASTRONOMY REDUCED 6SEC V1.0
VG2 JUPITER ULTRAVIOLET SPECTROMETER SUBSYSTEM 3 RDR V1.0
VG2 NEP CRS CALIB RDR D1 RATE HI RESOLUTION ELEC 6SEC V1.0
VG2 NEP CRS RESAMPLED SUMMARY D1 RATE ELEC 96SEC V1.0
VG2 NEP CRS RESAMPLED SUMMARY D2 RATE ELEC 96SEC V1.0
VG2 NEP LECP RESAMPLED RDR STEPPING SECTOR 12.8MIN V1.0
VG2 NEP LECP RESAMPLED SUMMARY SCAN AVERAGED 24SEC V1.0
VG2 NEP MAG RESAMP RDR HELIOGRAPHIC COORDINATES 1.92SEC V1.0
VG2 NEP MAG RESAMP RDR HELIOGRAPHIC COORDINATES 9.6SEC V1.0
VG2 NEP MAG RESAMP SUMMARY HELIOGRAPHIC COORDS 48SEC V1.0
VG2 NEP MAG RESAMPLED SUMMARY NLS COORDINATES 12SEC V1.0
VG2 NEP PLS DERIVED RDR 2 PROTON MAGSPHERE 48SEC V1.0
VG2 NEP PLS DERIVED RDR ELECTRON MAGNETOSPHERE 96SEC V1.0
VG2 NEP PLS DERIVED RDR ION INBOUND S-WIND 48SEC V1.0
VG2 NEP PLS DERIVED RDR ION MAGNETOSPHERE 48SEC V1.0

VG2 NEP PLS DERIVED RDR ION OUTBND MAGSHTH L-MODE 48SEC V1.0
VG2 NEP PLS DERIVED RDR ION OUTBND MAGSHTH M-MODE 12MIN V1.0
VG2 NEP PRA EDITED RDR HIGH RATE 60MS V1.0
VG2 NEP PRA RESAMPLED SUMMARY BROWSE 48SEC V1.0
VG2 NEP PWS EDITED RDR UNCALIB SPECTRUM ANALYZER 4SEC V1.0
VG2 NEP PWS RAW EXPERIMENT WAVEFORM 60MS V1.0
VG2 NEP PWS RESAMPLED SUMMARY SPECTRUM ANALYZER 48SEC V1.0
VG2 NEP TRAJECTORY DERIV SUMM HELIOGRAPHIC COORDS 48SEC V1.0
VG2 NEP TRAJECTORY DERIVED SUMM NLS COORDS 12SEC V1.0
VG2 NEPTUNE IMAGING SCIENCE SUBSYSTEM EDITED EDR V1.0
VG2 NEPTUNE IMAGING SCIENCE SUSBSYSTEM EDITED EDR V1.0
VG2 NEPTUNE IRIS 3 RDR V1.0
VG2 NEPTUNE ULTRAVIOLET SPECTROMETER SUBSYSTEM 3 RDR V1.0
VG2 PHOTOPOLARIMETER RING OCCULTATION DATA V1.0
VG2 SATURN ULTRAVIOLET SPECTROMETER SUBSYSTEM 3 RDR V1.0
VG2 SR/UR/NR PPS RAW/EDITED/RESAMPLED RING OCCULTATION V1.0
VG2 ULTRAVIOLET SPECTROMETER RING OCCULTATION DATA V1.0
VG2 URA CRS RESAMPLED SUMMARY D1 RATE ELEC 96SEC V1.0
VG2 URA CRS RESAMPLED SUMMARY D2 RATE ELEC 96SEC V1.0
VG2 URA LECP RESAMPLED RDR STEPPING SECTOR 12.8MIN V1.0
VG2 URA LECP RESAMPLED RDR STEPPING SECTOR 15MIN V1.0
VG2 URA LECP RESAMPLED SUMMARY SCAN AVERAGED 15MIN V1.0
VG2 URA LECP RESAMPLED SUMMARY SCAN AVERAGED 24SEC V1.0
VG2 URA MAG RESAMP RDR HELIOGRAPHIC COORDINATES 1.92SEC V1.0
VG2 URA MAG RESAMP RDR HELIOGRAPHIC COORDINATES 9.6SEC V1.0
VG2 URA MAG RESAMP SUMMARY HELIOGRAPHIC COORDS 48SEC V1.0
VG2 URA MAG RESAMPLED RDR U1 COORDINATES 1.92SEC V1.0
VG2 URA MAG RESAMPLED RDR U1 COORDINATES 9.6SEC V1.0
VG2 URA MAG RESAMPLED SUMMARY U1 COORDINATES 48SEC V1.0
VG2 URA PLS DERIVED RDR ELECTRON FIT 48SEC V1.0
VG2 URA PLS DERIVED RDR ION FIT 48SEC V1.0
VG2 URA PLS DERIVED SUMM ELECTRON BROWSE 48SEC V1.0
VG2 URA PLS DERIVED SUMMARY ION FIT 48SEC V1.0
VG2 URA PRA EDITED RDR HIGH RATE 60MS V1.0
VG2 URA PRA RESAMPLED SUMMARY BROWSE 48SEC V1.0
VG2 URA PWS EDITED RDR UNCALIB SPECTRUM ANALYZER 4SEC V1.0
VG2 URA PWS RAW EXPERIMENT WAVEFORM 60MS V1.0
VG2 URA PWS RESAMPLED SUMMARY SPECTRUM ANALYZER 48SEC V1.0
VG2 URA TRAJECTORY DERIV SUMM HELIOGRAPHIC COORDS 48SEC V1.0
VG2 URA TRAJECTORY DERIVED SUMM U1 COORDS 48SEC V1.0
VG2 URANUS IMAGING SCIENCE SUBSYSTEM EDITED EDR V1.0
VG2 URANUS IMAGING SCIENCE SUSBSYSTEM EDITED EDR V1.0
VG2 URANUS IRIS 3 RDR V1.0
VG2 URANUS ULTRAVIOLET SPECTROMETER SUBSYSTEM 3 RDR V1.0
VILAS ASTEROID SPECTRA V1.0
VL1 MARS METEOROLOGY DATA RESAMPLED DATA BINNED-P-T-V V1.0
VL1/VL2 MARS LABELED RELEASE V1.0
VL1/VL2 MARS LANDING SITE ROCK POPULATIONS V1.0
VL1/VL2 MARS LCS DERIVED ATMOSPHERIC OPTICAL DEPTH V1.0
VL1/VL2 MARS LCS EXPERIMENT DATA RECORD V1.0
VL1/VL2 MARS METEOROLOGY DATA CALIBRATED DATA PRESSURE V1.0
VL1/VL2 MARS METEOROLOGY RESAMPLED DAILY AVG PRESSURE V1.0
VL1/VL2 MARS METEOROLOGY RESAMPLED DATA BINNED-P-T-V V1.0

VO1 MARS VISUAL IMAGING SUBSYSTEM DATA FOR SURVEY MISSION
VO1/VO2 MARS ATMOSPHERIC WATER DETECTOR 4 V1.0
VO1/VO2 MARS INFRARED THERMAL MAPPER RESAMPLED DATA V1.0
VO1/VO2 MARS IRTM BINNED DATA AND DERIVED CLOUDS V1.0
VO1/VO2 MARS VISUAL IMAGING SS EXPRMNT DATA REC BROWSE V2.0
VO1/VO2 MARS VISUAL IMAGING SS EXPRMNT DATA RECORD V2.0
VO1/VO2 MARS VISUAL IMAGING SUBSYSTEM DIGITAL IMAGE MODEL
VO1/VO2 MARS VISUAL IMAGING SUBSYSTEM DIGITAL IMAGING MODEL
VO1/VO2 MARS VISUAL IMAGING SUBSYSTEM DIGITAL TERRAIN MODEL
VO1/VO2 MARS VISUAL IMAGING SUBSYSTEM EXPERIMENT DATA RECORD
VO2 MARS RADIO SCIENCE SUBSYSTEM RESAMPLED LOS GRAVITY V1.0
VOYAGER 1 JUP LOW ENERGY CHARGED PARTICLE CALIB. 15MIN
VOYAGER 1 JUP LOW ENERGY CHARGED PARTICLE CALIB. BR 15MIN
VOYAGER 1 JUP PLASMA SPECTROMETER EDITED SPEC 4.0SEC
VOYAGER 1 JUP PLASMA WAVE SPECTROMETER RESAMP SPEC 48.0SEC
VOYAGER 1 JUP PLASMA/RADIO ASTRON. DERIVED ELECTRON MOM 96S
VOYAGER 1 JUPITER MAGNETOMETER RESAMPLED DATA 1.92 SEC
VOYAGER 1 JUPITER MAGNETOMETER RESAMPLED DATA 48.0 SEC
VOYAGER 1 JUPITER MAGNETOMETER RESAMPLED DATA 9.60 SEC
VOYAGER 1 JUPITER PLASMA DERIVED ION MOMENTS 96 SEC
VOYAGER 1 JUPITER POSITION RESAMPLED DATA 48.0 SECONDS
VOYAGER 1 SAT LOW ENERGY CHARGED PARTICLE CALIB. 15MIN
VOYAGER 1 SAT LOW ENERGY CHARGED PARTICLE CALIB. BR 15MIN
VOYAGER 1 SAT PLASMA WAVE SPECTROMETER RESAMP SPEC 48.0SEC
VOYAGER 1 SATURN EGRESS RADIO OCCULTATION RAW DATA V1.0
VOYAGER 1 SATURN MAGNETOMETER RESAMPLED DATA 1.92 SEC
VOYAGER 1 SATURN MAGNETOMETER RESAMPLED DATA 48.0 SEC
VOYAGER 1 SATURN MAGNETOMETER RESAMPLED DATA 9.60 SEC
VOYAGER 1 SATURN PLASMA DERIVED ELECTRON BROWSE 96 SEC
VOYAGER 1 SATURN PLASMA DERIVED ELECTRON PARAMETERS 96 SEC
VOYAGER 1 SATURN PLASMA DERIVED ION FITS 96 SEC
VOYAGER 1 SATURN PLASMA DERIVED ION FITS BROWSE 96 SEC
VOYAGER 1 SATURN PLASMA DERIVED ION MOMENTS 96 SEC
VOYAGER 1 SATURN PLASMA WAVE SPECTROMETER EDITED SPEC 4.0SEC
VOYAGER 1 SATURN POSITION RESAMPLED DATA 48.0 SECONDS
VOYAGER 1 TITAN RADIO OCCULTATION RAW DATA V1.0
VOYAGER 1&2 JUPITER BRIGHTNESS NORTH/SOUTH MAP SET V1.0
VOYAGER 1&2 JUPITER IRIS DERIVED NORTH/SOUTH PARAMETERS V1.0
VOYAGER 1&2 SATURN BRIGHTNESS NORTH/SOUTH MAP SET V1.0
VOYAGER 1&2 SATURN IRIS DERIVED NORTH/SOUTH PARAMETERS V1.0
VOYAGER 2 JUP LOW ENERGY CHARGED PARTICLE CALIB. 15MIN
VOYAGER 2 JUP LOW ENERGY CHARGED PARTICLE CALIB. BR 15MIN
VOYAGER 2 JUP PLASMA WAVE SPECTROMETER EDITED SPEC 4.0SEC
VOYAGER 2 JUP PLASMA WAVE SPECTROMETER RESAMP SPEC 48.0SEC
VOYAGER 2 JUPITER MAGNETOMETER RESAMPLED DATA 1.92 SEC
VOYAGER 2 JUPITER MAGNETOMETER RESAMPLED DATA 48.0 SEC
VOYAGER 2 JUPITER MAGNETOMETER RESAMPLED DATA 9.60 SEC
VOYAGER 2 JUPITER PLASMA DERIVED ELECTRON MOMENTS 96 SEC
VOYAGER 2 JUPITER PLASMA DERIVED ION MOMENTS 96 SEC
VOYAGER 2 JUPITER POSITION RESAMPLED DATA 48.0 SECONDS
VOYAGER 2 JUPITER/SHOEMAKER-LEVY 9 UVS NULL RESULTS V1.0
VOYAGER 2 SAT LOW ENERGY CHARGED PARTICLE CALIB. 15MIN
VOYAGER 2 SAT LOW ENERGY CHARGED PARTICLE CALIB. BR 15MIN

VOYAGER 2 SAT PLASMA WAVE SPECTROMETER RESAMP SPEC 48.0SEC
VOYAGER 2 SATURN MAGNETOMETER RESAMPLED DATA 1.92 SEC
VOYAGER 2 SATURN MAGNETOMETER RESAMPLED DATA 48.0 SEC
VOYAGER 2 SATURN MAGNETOMETER RESAMPLED DATA 9.60 SEC
VOYAGER 2 SATURN PLASMA DERIVED ELECTRON BROWSE 96 SEC
VOYAGER 2 SATURN PLASMA DERIVED ELECTRON PARAMETERS 96 SEC
VOYAGER 2 SATURN PLASMA DERIVED ION FITS 96 SEC
VOYAGER 2 SATURN PLASMA DERIVED ION FITS BROWSE 96 SEC
VOYAGER 2 SATURN PLASMA DERIVED ION MOMENTS 96 SEC
VOYAGER 2 SATURN PLASMA WAVE SPECTROMETER EDITED SPEC 4.0SEC
VOYAGER 2 SATURN POSITION RESAMPLED DATA 48.0 SECONDS
VOYAGER 2 SATURN RADIO OCCULTATION RAW DATA V1.0
VOYAGER 2 TRITON RADIO OCCULTATION REDUCED DATA V1.0
VOYAGER 2 URANUS PLASMA DERIVED ELECTRON BROWSE 96 SEC
VOYAGER 2 URANUS PLASMA DERIVED ELECTRON PARAMETERS 96 SEC

DATA_SET_PARAMETER_NAME DYNAMIC

1.4 MICROMETER BRIGHTNESS
ATMOSPHERIC PRESSURE
BRIGHTNESS TEMPERATURE
BRIGHTNESS TEMPERATURE STANDARD DEVIATN
CLOUD COUNT
CLOUD TYPE
COLUMN WATER ABUNDANCE
COUNT
D1 RATE
D2 RATE
DATA NUMBER
DERIVATIVE OF MODEL WITH ALBEDO
DERIVATIVE OF MODEL WITH INERTIA
ELECTRIC FIELD COMPONENT
ELECTRIC FIELD INTENSITY
ELECTRIC FIELD SPECTRAL DENSITY
ELECTRIC FIELD VECTOR
ELECTRIC FIELD WAVEFORM
ELECTRON ANGULAR DISTRIBUTION
ELECTRON CURRENT
ELECTRON DENSITY
ELECTRON DIFFERENTIAL FLUX
ELECTRON DIFFERENTIAL INTENSITY
ELECTRON ENERGY SPECTRUM
ELECTRON FLUX
ELECTRON INTENSITY
ELECTRON PITCH ANGLE DISTRIBUTION
ELECTRON PRESSURE
ELECTRON RATE
ELECTRON TEMPERATURE
EMISSIVITY
ENERGETIC NEUTRAL ATOM FLUX
FLUX
FLUX DENSITY
FLUX RATIO

INTEGRATED_VISIBLE_RADIANCE
ION ANGULAR DISTRIBUTION
ION COMPOSITION
ION CURRENT
ION DENSITY
ION DIFFERENTIAL FLUX
ION DIFFERENTIAL INTENSITY
ION ENERGY SPECTRUM
ION FLUX
ION INTENSITY
ION PITCH ANGLE DISTRIBUTION
ION PRESSURE
ION RATE
ION TEMPERATURE
ION THERMAL SPEED
ION VELOCITY
LAMBERT ALBEDO
LAMBERT ALBEDO STANDARD DEVIATION
LINE OF SIGHT ACCELERATION
MAGNETIC FIELD COMPONENT
MAGNETIC FIELD INTENSITY
MAGNETIC FIELD SPECTRAL DENSITY
MAGNETIC FIELD VECTOR
MAGNITUDE
MINNAERT ALBEDO
MODEL TEMPERATURE
N/A
OBSERVATION COUNT
OPTICAL DEPTH
PARTICLE FLUX INTENSITY
PARTICLE MULTIPLE PARAMETERS
PHASE CORRECTED ALBEDO
PHASE CORRECTED ALBEDO STANDARD DEVIATN
PHOTOGRAPHIC DENSITY
PIONEER-VENUS FRESNEL REFLECTIVITY CORR
PLANETARY ELEVATION
PLANETARY RADIUS
PLASMA BETA
PLASMA DENSITY
PLASMA FLOW
PLASMA PRESSURE
PLASMA VELOCITY
PLASMA WAVE SPECTRUM
PLASMA WAVE WAVEFORM
POLARIZATION
POSITION VECTOR
POWER FLUX
RADAR BACKSCATTER CROSS SECTION
RADAR ECHO POWER
RADAR MODEL ECHO POWER
RADAR SCALED BACKSCATTER CROSS SECTION
RADAR SCALED ECHO POWER
RADAR-DERIVED FRESNEL REFLECTIVITY

RADAR-DERIVED RMS SLOPE
RADAR-DERIVED SURFACE ROUGHNESS
RADIANCE
RADIANCE FACTOR
RADIO WAVE SPECTRUM
REFLECTANCE
RELATIVE INTENSITY
SAMPLED_VISABLE_RADIANCE
SAMPLED_VISIBLE_RADIANCE
SINGLE POINT THERMAL INERTIA
SPECTRAL INTENSITY
STOKES SCATTERING OPERATOR
TEMPERATURE
THERMAL_RADIANCE
VELOCITY
VISUAL BRIGHTNESS
WAVE ELECTRIC FIELD AMPLITUDE
WAVE ELECTRIC FIELD INTENSITY
WAVE ELECTRIC FIELD PHASE
WAVE MAGNETIC FIELD INTENSITY
WIND DIRECTION
WIND SPEED
WIND VELOCITY

DATA_SET_PARAMETER_UNIT DYNAMIC

(VOLTS/METER)**2/HERTZ
10**(-3)*CAL*CM**(-2)*S**(-1/2)*K**(-1)
10**-6 WATT / CM**-2 / STERADIAN / WAVENUMBER
AU OR DEGREES
CENTIMETER
CM**-3
CM-3
COUNTS/(CM**2*SECOND*STERADIAN*KEV)
COUNTS/(CM**2*SECOND*STERRADIAN*KEV)
COUNTS/SECOND
DEGREES
DEGREES CELSIUS
DIMENSIONLESS
ERG/SEC*CM**2(A)
EV
EV-3
JANSKY
KELVIN
KELVIN / (10**(-3)*CAL*CM**(-2)*S**(-1/2)*K**(-1))
KILOMETER
KILOMETERS/HOUR
KM/S
MAGNITUDE
METER
METERS/SECOND
MILLIBAR
MILLIBEL

MM/S**2
N/A
NANOTESLA
NEPTUNE RADII (24,765KM) OR DEGREES
PERCENT
PIXEL
PRECIPITABLE MICROMETERS
RADIAN
URANUS RADII (25,600KM) OR DEGREES
VOLT/METER
VOLTS/METER/HERTZ**.5
WATT
WATT/(METER*METER)/STERADIAN
WATT/CM**2/SR/CM**-1

DATA_SOURCE_ID		SUGGESTED

CONNERNEY
ELEMENTS-PLANET
EQUATRADIUS-SUN
HANEL
MAGMOMENT-PLANET
MAGMOMENT-SATURN
MAGMOMENT-URANUS
MASS-SUN
MEANSOLARDAY-PLANET
N/A
NAUTICAL ALMANAC 1989
NESS
ORBSEMIMAJAX-PLANET
PERIARGANG-PLANET
PHYSICAL-PLANET
PHYSICAL-SUN
RADIUS-PLANET
REVPER-PLANET
ROTATION-PLANET
ROTATION-SUN
RUSSELL
SURFGRAV-PLANET
SURFGRAV-SUN
VEVERKA

DATA_STREAM_TYPE	[JPL-AMMOS-SPECIFIC]	STATIC

ENGINEERING
MONITOR
QQC

DATA_TYPE		STATIC

ASCII COMPLEX
ASCII INTEGER
ASCII REAL

BINARY CODED DECIMAL
BIT STRING
BOOLEAN
CHARACTER
COMPLEX
DATE
EBCDIC CHARACTER
FLOAT
IBM COMPLEX
IBM INTEGER
IBM REAL
IBM UNSIGNED INTEGER
IEEE COMPLEX
IEEE REAL
INTEGER
LSB BIT STRING
LSB INTEGER
LSB UNSIGNED INTEGER
MAC COMPLEX
MAC INTEGER
MAC REAL
MAC UNSIGNED INTEGER
MSB BIT STRING
MSB INTEGER
MSB UNSIGNED INTEGER
N/A
PC COMPLEX
PC INTEGER
PC REAL
PC UNSIGNED INTEGER
REAL
SUN COMPLEX
SUN INTEGER
SUN REAL
SUN UNSIGNED INTEGER
TIME
UNSIGNED INTEGER
VAX BIT STRING
VAX COMPLEX
VAX DOUBLE
VAX INTEGER
VAX REAL
VAX UNSIGNED INTEGER
VAXG COMPLEX
VAXG REAL

DETAILED_CATALOG_FLAG STATIC
N
Y

DETECTOR_ID DYNAMIC

A
AMBIENT TEMPERATURE
B
C
CH1
CH2
CH3
CH4
CH5
CRS
D
GE CID 62
HFM1
HFM2
HFM3
ISSN
ISSW
LECP
LFM1
LFM2
LFM3
N/A
PRA ANTENNA
PRESSURE
PVORADANT
PWS ANTENNA
REFERENCE TEMP
RSSDETEB
RSSDETSC
SPECTROMETER A
SPECTROMETER B
SPECTROMETER C
SPECTROMETER D
THERMISTOR
TIMS
VISA
VISB
WIND QUADRANT
WIND SPEED

DETECTOR_TYPE DYNAMIC
ANTENNA
CHARGE INJECTION DEV
DIPOLE ANTENNA
FARADAY CUP
HG:GE
HOT-FILM ANEMOMETER
LINE ARRAY
MCT
MONOPOLE PR ANTENNA
N/A
PBS

PBSE
RESIST THERMOMETER
RING CORE
SOLID STATE
THERMISTOR
THERMOCOUPLE
THERMOPILE ARRAY
VARIABLE RELUCTANCE
VIDICON

DIFFRACTION_CORRECTED_FLAG	[PDS-RINGS]	STATIC

N
Y

DISCIPLINE_NAME		STATIC

ATMOSPHERES
GEOSCIENCES
IMAGE PROCESSING
IMAGING SPECTROSCOPY
NAVIGATION ANCILLARY INFORMATION FACILITY
PLASMA INTERACTIONS
RADIOMETRY
RINGS
SMALL BODIES

DISPERSION_MODE_ID	[PDS-SBN]	DYNAMIC

HIGH
LOW

DOCUMENT_FORMAT		DYNAMIC

ADOBE PDF
ENCAPSULATED POSTSCRIPT
GIF
HTML
JPG
MICROSOFT WORD
PNG
POSTSCRIPT
RICH TEXT
TEXT
TIFF

DOCUMENT_TOPIC_TYPE		SUGGESTED

ARCHIVE VOLUME SIS
ASTEROID INFORMATION
ASTEROID POLE POSITIONS
ASTEROID REFLECTANCE SPECTRA
CALIBRATION DESCRIPTION

CALIBRATION REPORT
CARTOGRAPHY
COMET HALLEY
COMETS
CRS DOCUMENTATION
CRS NEPTUNE ANALYSIS
CRS NEPTUNE REPORT
CRS URANUS ANALYSIS
CRS URANUS REPORT
CURRENTS IN SATURN'S MAGNETOSPHERE
DATA ANALYSIS
DATA PRODUCT SIS
DATA RECOVERY TECHNIQUES AND ANALYSIS
DATA SET DERIVATION AND INTERPRETATIONS
DATA SET DESCRIPTION
DATA SET DESCRIPTION, DERIVATION TECHNIQUE, AND ANALYSIS
DATA SET DESCRIPTION, DERIVATION, AND INTERPRETATIONS
DATA USER REQUIREMENTS
DERIVATION AND ANALYSIS TECHNIQUES
ENERGETIC PARTICLES AT JUPITER
ENERGETIC PARTICLES AT NEPTUNE
ENERGETIC PARTICLES AT URANUS
EXPERIMENT RESULTS
FUNCTIONAL REQUIREMENTS DOCUMENT
GEOLOGY
GEOLOGY OF VENUS
GRSFE
HTML NAVIGATION
IHW LSPN ATLAS
IHW STUDY
IMAGE PROCESSING
INITIAL EXPERIMENT RESULTS
INSTRUMENT AND DATA SET DESCRIPTION
INSTRUMENT DESCRIPTION
INSTRUMENT DESCRIPTION AND EXPERIMENT OBJECTIVES SUMMARY
INSTRUMENT DESCRIPTION AND MEASUREMENT TECHNIQUE
IONOSPHERE OF VENUS
JOVIAN MAGNETOTAIL AND CURRENT SHEET
JPL INTEROFFICE MEMORANDUM
JUPITER ELECTRONS
JUPITER IONS
LECP DOCUMENTATION
LECP JUPITER DOCUMENTATION
LECP SATURN DOCUMENTATION
LECP URANUS DOCUMENTATION
LUNAR RADAR DATA
MAGELLAN PROJECT DOCUMENT
MAGNETIC FIELD AND PLASMA FLOW IN JUPITER MAGNETOSHEATH
MAGNETIC FIELD AT NEPTUNE
MAGNETIC FIELD CURRENT STRUCTURES MAGNETOSPHERE URANUS
MAGNETIC FIELD EXPERIMENT FOR VOYAGER 1 AND 2
MAGNETIC FIELD NEPTUNE
MAGNETIC FIELD STUDIES AT JUPITER BY VOYAGER 1

MAGNETIC FIELD STUDIES AT JUPITER BY VOYAGER 2
MAGNETIC FIELD STUDIES URANUS
MAGNETIC FIELD STUDIES VOYAGER 1 AT SATURN PRELIMINARY
MAGNETIC FIELD STUDIES VOYAGER 2 SATURN PRELIMINARY
MAGNETIC FIELD URANUS
MAGNETOMETRY
MAGNETOTAIL URANUS
MANUAL
MAPPING DESCRIPTION AND RESULTS
MARS GRAVITY
MARS RADAR DATA
MERCURY RADAR DATA
MISSION DESCRIPTION
MISSION DESCRIPTION AND INSTRUMENT OVERVIEW
MISSION RESULTS
MISSION SCIENCE
MODELING JOVIAN CURRENT SHEET AND INNER MAGNETOSPHERE
MULTISPECTRAL SCANNER
N/A
NEAR EARTH ASTEROIDS
NEPTUNE PLASMA - ELECTRON OBSERVATIONS
NEPTUNE PLASMA - INITIAL RESULTS
NEPTUNE PLASMA - LOW ENERGY
NEPTUNE PLASMA - LOW ENERGY IONS
NEPTUNE PLASMA - PLASMA MANTLE
OPERATING MANUAL
OPERATIONS REPORT
OPTICAL ENGINEERING
ORIGIN OF PLANETARY MAGNETIC FIELDS
PHYSICS OF JOVIAN MAGNETOSPHERE COORDINATE SYSTEMS
PLANETARY ATMOSPHERES
PLANETARY MAPPING
PLS INSTRUMENT DESCRIPTION
PROCEEDINGS
PROJECT FINAL REPORT
PROJECT SUMMARY
RADAR AND GRAVITY DATA
RADAR ASTRONOMY
RADAR GEOLOGY
RADAR IMAGING
REFLECTANCE
REMOTE SENSING
REMOTE SENSING BOTANY
SATURN ELECTRONS
SATURN IONS
SCIENCE REPORT
SENSOR CALIBRATION
SOFTWARE DESCRIPTION
SOFTWARE INTERFACE SPECIFICATION
SPACECRAFT DESCRIPTION
SPACECRAFT DESIGN
STRUCTURE DYNAMICS SATURN'S OUTER MAGNETOSPHERE BOUNDARY
SURFACE WAVES URANUS MAGNETOPAUSE

URANUS ELECTRONS
URANUS IONS
USER'S GUIDE
VENUS GRAVITY
VENUS LIGHTNING
VENUS RADAR DATA
VG1 PWS JUPITER OVERVIEW
VG1 PWS SATURN OVERVIEW
VG2 PRA NEPTUNE OVERVIEW
VG2 PRA URANUS OVERVIEW
VG2 PWS JUPITER OVERVIEW
VG2 PWS NEPTUNE OVERVIEW
VG2 PWS SATURN OVERVIEW
VG2 PWS URANUS OVERVIEW
VOLUME CONTENTS
VOYAGER AT URANUS
VOYAGER 2 AT URANUS
VOYAGER AT SATURN
VOYAGER MEASUREMENT ROTATION PERIOD SATURN MAGNETIC FIELD
Z3 ZONAL HARMONIC MODEL SATURN'S MAGNETIC FIELD ANALYSIS

EARTH_BASE_ID STATIC

C154
GSR
KP36
KP50
KP84
LO72
MK88
PGD
S229

EARTH_BASE_INSTITUTION_NAME DYNAMIC

HAWAII INSTITUTE OF GEOPHYSICS
INTERNATIONAL HALLEY WATCH
JET PROPULSION LABORATORY
KITT PEAK NATIONAL OBSERVATORY
LOWELL OBSERVATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
MAUNA KEA OBSERVATORY
MIT
N/A
NASA AMES RESEARCH CENTER
NATIONAL ASTRONOMY AND IONOSPHERIC CENTER
UNITED STATES GEOPHYSICAL SURVEY
UNITED STATES GEOPHYSICAL SURVEY, RESTON
UNIVERSITY OF ARIZONA

EDR_SOFTWARE_NAME [CLEM] STATIC
    NRL-ACT-MGRAB

ELECTRONIC_MAIL_TYPE DYNAMIC
    ARPANET
    BITNET
    E-MAIL
    GSFC
    INTERNAT
    INTERNET
    JEMS
    MAIL (GTE TELENET)
    N/A
    NASAMAIL
    NSFNET
    NSI/DECNET
    SPAN/NSI
    TCP/IP
    TELEMAIL
    UNK

ELECTRONICS_ID DYNAMIC
    ASAS
    AVIR
    CRS
    IRS
    IRTM
    ISSN
    ISSW
    LECP
    MAWD
    MEA
    N/A
    P
    PLS
    PRA
    PVORADCTL
    PWS
    RDRS
    RSSELECEB
    RSSELECSC
    S
    TIMS
    VISA
    VISB

ENCODING_TYPE DYNAMIC
    CLEM-JPEG-0
    CLEM-JPEG-0 DECOMPRESSED
    CLEM-JPEG-1

CLEM-JPEG-1 DECOMPRESSED
CLEM-JPEG-2
CLEM-JPEG-2 DECOMPRESSED
CLEM-JPEG-3
CLEM-JPEG-3 DECOMPRESSED
DECOMPRESSED
GIF87A
GIF89A
HUFFMAN FIRST DIFFERENCE
N/A
PDF-ADOBE-1.1
PNG
PREVIOUS PIXEL
PS-ADOBE-1.0
PS-ADOBE-2.0
PS-ADOBE-3.0
RUN LENGTH
ZIP

EVENT_NAME DYNAMIC

N/A
VOYAGER 1 JUPITER BOWSHOCK CROSSING
VOYAGER 1 JUPITER MAGNETOPAUSE CROSSING
VOYAGER 2 JUPITER BOWSHOCK CROSSING
VOYAGER 2 JUPITER MAGNETOPAUSE CROSSING
VOYAGER 2 JUPITER PLASMA SHEET CROSSING

EVENT_TYPE DYNAMIC

ALFVEN WING CROSSING
BOWSHOCK CROSSING
CLOSEST APPROACH
CURRENT SHEET CROSSING
FLUX TUBE CROSSING
INTERPLANETARY SHOCK CROSSING
L-SHELL CROSSING
MAGNETOPAUSE CROSSING
NEUTRAL SHEET CROSSING
OCCULTATION
PLASMA SHEET CROSSING

EXPERTISE_AREA_TYPE STATIC

ASTRONOMY
COMPUTER ANALYST
COMPUTER SCIENCE
DATA ENGINEERING
ENGINEERING
GEOSCIENCE
IMAGE PROCESSING
LIBRARY SCIENCE
MANAGEMENT

N/A
OPERATIONS
SCIENCE
SOFTWARE ENGINEERING
SPACE SCIENCE
SYSTEM ENGINEERING
UNK

EXPOSURE_OFFSET_FLAG STATIC
OFF
ON

EXPOSURE_TYPE STATIC
EXTENDED
NORMAL

FACILITY_NAME DYNAMIC
APPLIED COHERENT TECHNOLOGY CORPORATION
ATMOSPHERES NODE
BRANCH OF ASTROGEOLOGY
CENTER FOR SPACE RESEARCH
EARTH AND PLANETARY REMOTE SENSING LABORATORY
GEOPHYSICS AND PLANETARY PHYSICS
HERZBERG INSTITUTE OF ASTROPHYSICS
LABORATORY FOR TERRESTRIAL PHYSICS
MULTIMISSION IMAGE PROCESSING SUBSYSTEM
NAVIGATION ANCILLARY INFORMATION FACILITY
PDS DATA DISTRIBUTION LABORATORY
PLANETARY DATA SYSTEM
SPACE SCIENCE LABORATORY
THE BLACKETT LABORATORY

FEATURE_NAME STATIC
TBD (IAU GAZETTER)

FEATURE_TYPE STATIC
TBD (IAU GAZETTER)

FILTER_NAME DYNAMIC
A
B
BLUE
C
CLEAR
D
E
F

GREEN
IR-7270
IR-7560
IR-8890
IR-9680
LONGWAVE
METHANE-JST
METHANE-U
MINUS BLUE
N/A
ORANGE
RED
SHORTWAVE
SODIUM-D
SOLAR UV-22
T11
T15
T20
T7
T9
ULTRAVIOLET
VIOLET

FILTER_TYPE DYNAMIC
ABSORPTION
CIRCULAR-VARIABLE INTERFERENCE
INTERFERENCE
MULTILAYER INTERFERENCE
N/A
RESTSTRAHLEN

FLAT_FIELD_CORRECTION_FLAG STATIC
BACKLASH-UOFA
FALSE
MPFNAV-MIPS
TELEMETRY
TRUE

FOV_SHAPE_NAME DYNAMIC
CIRCULAR
DIPOLE
ELLIPSOIDAL
LINEAR
N/A
RECTANGULAR
SQUARE
UNK

FRAME_ID DYNAMIC

LELE1
LELE2
LELEM
M2
M3
M4
MELE1
MELE2

FTP_FILE_FORMAT		SUGGESTED
COMPRESSED		
GZIP		
TAR		
ZIP		

GAIN_MODE_ID		DYNAMIC
100K		
10K		
400K		
40K		
HIGH		
LOW		
N/A		
UNK		

GENERAL_CLASSIFICATION_TYPE	[PDS-CN]	STATIC
BIBLIO		
DATASET		
GEOMETRY		
IMAGING		
INSTRUMENT		
MAP		
MGN-ALTRAD		
MISSION		
PARAM		
PERS		
PHYSICAL		
PLASMA		
QUBE		
RADIOMETRY		
SOFTWARE		
STRUCTURE		
SYSTEM		
TARGET		
TIME		
rings		

GENERAL_DATA_TYPE		STATIC
ALPHABET		

ALPHANUMERIC		
CHARACTER		
CONTEXT DEPENDENT		
DATE		
DECIMAL		
EXPONENTIAL		
INTEGER		
NON DECIMAL		
REAL		
TIME		
HARDWARE_MODEL_ID		SUGGESTED
MACINTOSH		
MACINTOSH II		
PC		
SUN 3		
SUN 4		
SUN SPARC STATION		
VAX 11/750		
VAX 11/780		
HEADER_TYPE		DYNAMIC
BDV		
FITS		
SPREADSHEET		
VICAR		
VICAR2		
ICT_ZIGZAG_PATTERN	[PDS-IMG-GLL]	DYNAMIC
ALT		
ZIGZAG		
IMAGE_OBSERVATION_TYPE		DYNAMIC
BLACK SKY		
LIMB		
INDEX_TYPE	[PDS-CN]	STATIC
CUMULATIVE		
SINGLE		
INSTITUTION_NAME		DYNAMIC
ARIZONA STATE UNIVERSITY		
AT&T BELL LABORATORIES		
BOSTON UNIVERSITY		
BROWN UNIVERSITY		
CALIFORNIA INSTITUTE OF TECHNOLOGY		
CORNELL UNIVERSITY		

DECEASED
DENISON UNIVERSITY
GEORGIA INSTITUTE OF TECHNOLOGY
HERZBERG INSTITUTE OF ASTROPHYSICS
IMPERIAL COLLEGE
INSTITUTE FOR ASTRONOMY
JET PROPULSION LABORATORY
JOHNS HOPKINS UNIVERSITY
KITT PEAK NATIONAL OBSERVATORY
KONKOLY OBSERVATORY OF THE HUNGARIAN ACADEMY OF SCIENCE
LOS ALAMOS NATIONAL LABORATORY
LUNAR AND PLANETARY INSTITUTE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
MAX-PLANCK-INSTITU FUR AERONMIE
N/A
NASA HEADQUARTERS
NASA/AMES RESEARCH CENTER
NASA/GODDARD INSTITUTE FOR SPACE STUDIES
NASA/GODDARD SPACE FLIGHT CENTER
NASA/JOHNSON SPACE CENTER
NATIONAL AERONAUTICS SPACE MUSEUM
NATIONAL SPACE SCIENCE DATA CENTER
NEW MEXICO STATE UNIVERSITY
PLANETARY SCIENCE INSTITUTE
RADIOPHYSICS INCORPORATED
SAN JOSE STATE UNIVERSITY
SCIENCE APPLICATIONS INTERNATIONAL CORP
SMITHSONIAN ASTROPHYSICAL OBSERVATORY
SMITHSONIAN INSTITUTE OF TECHNOLOGY
SOUTHWEST RESEARCH INSTITUTE
STANFORD UNIVERSITY
STERLING CORPORATION
TEXAS A & M UNIVERSITY
UNITED STATES GEOLOGICAL SURVEY
UNIVERSITA DEGLI STUDI DI PAVIA
UNIVERSITAT BONN
UNIVERSITAT KIEL
UNIVERSITY OF ARIZONA
UNIVERSITY OF CALIFORNIA, BERKELEY
UNIVERSITY OF CALIFORNIA, LOS ANGELES
UNIVERSITY OF CHICAGO
UNIVERSITY OF COLORADO
UNIVERSITY OF FLORIDA
UNIVERSITY OF HAWAII
UNIVERSITY OF IOWA
UNIVERSITY OF KANSAS
UNIVERSITY OF MARYLAND
UNIVERSITY OF NEW MEXICO
UNIVERSITY OF VIRGINIA
UNIVERSITY OF WASHINGTON
UNIVERSITY OF WISCONSIN
UNK
WASHINGTON UNIVERSITY

WELLESLEY COLLEGE

INSTRUMENT_AZIMUTH_METHOD	SUGGESTED
DEPLOYED	
STOWED	
INSTRUMENT_DEPLOYMENT_STATE	SUGGESTED
BACKLASH-UOFA	
MPFNAV-MIPS	
TELEMETRY	
INSTRUMENT_HOST_ID	STATIC
24COL	
AMON	
ARCB	
ASTR	
C130	
C154	
CLEM1	
CO	
ECAS	
ER-2	
ESO	
FEXP	
GDSCC	
GIO	
GO	
GP	
GSR	
GSSR	
HP	
HST	
HSTK	
ICE	
IRAS	
IRSN	
IRTF	
IUE	
KP36	
KP50	
KP84	
LO72	
LP	
LSPN	
MDM	
MGN	
MGS	
MK88	

MKO
MO
MODEL
MPFL
MPFR
MR6
MR7
MR9
MSN
MSSSO
N/A
NDC8
NEAR
NNSN
OAO
ODY
P12
PAL
PGD
PPN
PVO
RSN
S229
SAKIG
SPEC
SUISEI
ULY
UNK
VEGA1
VEGA2
VG1
VG2
VL1
VL2
VO1
VO2
VTH

INSTRUMENT_HOST_NAME STATIC

2001 MARS ODYSSEY
24-COLOR SURVEY
AMES MARS GENERAL CIRCULATION MODEL
ARECIBO OBSERVATORY
CASSINI ORBITER
CLEMENTINE 1
EIGHT COLOR ASTEROID SURVEY
EUROPEAN SOUTHERN OBSERVATORY
FIELD EXPERIMENT
GALILEO ORBITER
GALILEO PROBE
GIOTTO
GOLDSTONE DEEP SPACE COMMUNICATIONS COMPLEX

GOLDSTONE SOLAR SYSTEM RADAR
HAYSTACK OBSERVATORY
HUBBLE SPACE TELESCOPE
HUYGENS PROBE
ICE
IHW AMATEUR OBSERVATIONS NETWORK
IHW ASTROMETRY NETWORK
IHW INFRARED STUDIES NETWORK
IHW LARGE-SCALE PHENOMENA NETWORK
IHW METEOR STUDIES NETWORK
IHW NEAR-NUCLEUS STUDIES NETWORK
IHW PHOTOMETRY AND POLARIMETRY NETWORK
IHW RADIO STUDIES NETWORK
IHW SPECTROSCOPY AND SPECTROPHOTOMETRY NETWORK
INFRARED ASTRONOMICAL SATELLITE
INTERNATIONAL ULTRAVIOLET EXPLORER
KITT PEAK NATIONAL OBSERVATORY 36 INCH (0.914M) TELESCOPE
KITT PEAK NATIONAL OBSERVATORY 50 INCH (1.27M) TELESCOPE
KITT PEAK NATIONAL OBSERVATORY 84 INCH (2.13M) TELESCOPE
LOWELL OBSERVATORY 72 INCH (1.83M) TELESCOPE
LUNAR PROSPECTOR
MAGELLAN
MARINER 6
MARINER 7
MARINER 9
MARS GLOBAL SURVEYOR
MARS OBSERVER
MARS PATHFINDER LANDER
MAUNA KEA OBSERVATORY
MAUNA KEA OBSERVATORY 88 INCH (2.24M) TELESCOPE
MICHIGAN-DARTMOUTH-MIT OBSERVATORY
MICROROVER FLIGHT EXPERIMENT
MOUNT STROMLO SIDING SPRING OBSERVATORY
N/A
NASA C-130 AIRCRAFT
NASA DC-8 AIRCRAFT
NASA ER-2 AIRCRAFT
NASA INFRARED TELESCOPE FACILITY
NEAR EARTH ASTEROID RENDEZVOUS
OKAYAMA ASTROPHYSICAL OBSERVATORY
PALOMAR OBSERVATORY
PIONEER
PIONEER VENUS ORBITER
PLANETARY GEOSCIENCES DIVISION SPECTROSCOPY LAB
SAKIGAKE
SUISEI
ULYSSES
UNIVERSITY OF ARIZONA 1.54M CATALINA REFLECTOR
UNIVERSITY OF ARIZONA 2.29M STEWARD OBSERVATORY REFLECTOR
UNKNOWN
USGS RESTON SPECTROSCOPY LABORATORY
VARIOUS TELESCOPE HOSTS
VEGA 1

VEGA 2
VIKING LANDER 1
VIKING LANDER 2
VIKING ORBITER 1
VIKING ORBITER 2
VOYAGER 1
VOYAGER 2

INSTRUMENT_HOST_TYPE STATIC
EARTH BASED
N/A
ROVER
SPACECRAFT
UNK

INSTRUMENT_ID DYNAMIC
2CP
8CPS
A-STAR
ACCEL
AMES-GCM
AMPG
AMVIS
APS
APXS
ASAR
ASAS
ASI
ASIMET
ASTR
AVIR
AWND
B&C
B-STAR
CAM1
CAM2
CAPS
CASPIR
CDA
CIRS
COM
COSPIN-AT
COSPIN-HET
COSPIN-HFT
COSPIN-KET
COSPIN-LET
CRS
DAED
DBP
DDS
DID

DSS14
DUCMA
DWE
EMMI
EPAC
EPAS
EPD
EPI
ESP
EUV
FC1B
FC2A
FC3A
FPA
GAS
GCMS
GDDS
GPMS
GPSM
GRB
GRE
GRS
GWE
HAD
HIC
HIRES
HISCALE
HMC
HSTP
IKS
IMF
IMP
IMS
INMS
IPP
IRFCURV
IRFTAB
IRIMAG
IRIS
IRPHOT
IRPOL
IRR
IRS
IRSPEC
IRTM
ISS
ISSN
ISSW
JPA
LECP
LIDAR
LR1
LR2

LRD
LSPN
LWIR
LWP
M3SPEC
MAG
MAGER
MAR
MAWD
MET
MIMI
MOC
MOLA
MSI
MSNRDR
MSNVIS
N/A
NEP
NFR
NIMS
NIR
NIS
NLR
NMS
NNSN
NS
NSFCAM
OASIS
OEFD
OETP
OMAG
ONMS
OPE
ORAD
OUVS
PARB
PFES
PIA
PLAWAV
PLS
PM1
POS
PPFLX
PPMAG
PPOL
PPR
PPS
PPSTOKE
PRA
PUMA
PWS
RADR
RADWAV

RCAC31034A
RCLT
RCRR
RCRT
RDRS
REAG
RMTR
RPWS
RSCN
RSOC
RSOH
RSRDR
RSS
RSS-VG1S
RSS-VG2S
RSSL
RSUV
RTLS
SCE
SEIS
SHYG
SIRS
SOW
SP1
SP2
SPEC
SPICE
SPK
SSI
SUSI
SWICS
SWOOPS
SWP
TEL
TES
THEMIS
THRM
TIMS
TNM
TVS
UDDS
UNK
URAP
UVIS
UVS
UVVIS
VHM/FGM
VIMS
VIS
VISA
VISB
WFPC2
WINDSOCK

WTHS
XGR
XRFS

INSTRUMENT_MANUFACTURER_NAME DYNAMIC

DAEDALUS ENTERPRISES, INC.
GEOPHYSICAL AND ENVIRONMENTAL RESEARCH INC.
HUGHES AIRCRAFT
JET PROPULSION LABORATORY
JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
JPL
MARTIN MARIETTA
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
METEOROLOGICAL RESEARCH INC.
N/A
RAYTEK INCORPORATED
SANTA BARBARA RESEARCH CENTER
SPACETAC
THE JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
THE UNIVERSITY OF IOWA
TRW/GE/NASA
UNIVERSITY OF CALIFORNIA, BERKELEY
UNIVERSITY OF IOWA
UNK

INSTRUMENT_MODE_ID DYNAMIC

...
..D
.G.
.GD
ALTIMETRY
CONTIGUOUS READOUT
CRUISE
E1-LONG
E1-SHORT
E2-LONG
E2-SHORT
ENCOUNTER
FAR ENCOUNTER
FAR ENCOUNTER STOW
FIXED PLANET
FIXED REFERENCE
FIXED SPACE
FIXLOH
FIXLOL
GS3GAINHI/WFMPWRON
HAA
HARAD
HARAD1
IM1
IM10

IM11
IM12
IM13
IM14
IM15
IM2
IM26
IM2A
IM2C
IM2W
IM3
IM4
IM5
IM6
IM7
IM8
IM9
IMK
IMO
IMQ
L-LONG
L-SHORT
L..
L.D
LEVEL
LEVEL1
LEVEL2
LEVEL3
LG.
LGD
M-LONG
M-SHORT
MODIFIED NORMAL
N/A
NEAR ENCOUNTER
NORMAL
OC3
OPERATING
PB8
POLHIH
POLHIL
POLLO
POLLO1
RADIOMETRY
SAR
URANUS SCAN CYCLIC
VLOBRH
VLOBRL
WAVELENGTH SCANNING
XXXXXH
XXXXXL

INSTRUMENT_NAME DYNAMIC

2 CHANNEL PHOTOMETER
8 COLOR PHOTOMETRIC SYSTEM
A STAR TRACKER CAMERA
ACCELEROMETER
ADV. SOLID-STATE ARRAY SPECTRORADIOMETER
AIRBORNE VISIBLE/IR IMAGING SPECTROMETER
AIRSAR
ALPHA PARTICLE SPECTROMETER
ALPHA PROTON X-RAY SPECTROMETER
AMATEUR PHOTOGRAPHY
AMATEUR VISUAL OBSERVATIONS
ARECIBO RADAR DATA
ATMOSPHERIC STRUCTURE INSTRUMENT
ATMOSPHERIC STRUCTURE INSTRUMENT / METEOROLOGY PACKAGE
B STAR TRACKER CAMERA
BOLLER & CHIVENS SPECTROGRAPH
CAMERA 1
CAMERA 2
CASSINI PLASMA SPECTROMETER
COMMUNICATION SYSTEM
COMPOSITE INFRARED SPECTROMETER
COSMIC DUST ANALYZER
COSMIC RAY SUBSYSTEM
COSMIC RAY SYSTEM
COSPIN-ANISOTROPY TELESCOPE
COSPIN-HIGH ENERGY TELESCOPE
COSPIN-HIGH FLUX TELESCOPE
COSPIN-KIEL ELECTRON TELESCOPE
COSPIN-LOW ENERGY TELESCOPE
CRYOGENIC ARRAY SPECTROMETER/IMAGER
DAEDALUS SPECTROMETER
DOPPLER WIND EXPERIMENT
DUAL BEAM PHOTOMETER
DUAL TECHNIQUE MAGNETOMETER
DUST DETECTION INSTRUMENT
DUST IMPACT DETECTOR
DUST IMPACT MASS ANALYZER
DUST IMPACT PLASMA DETECTOR
DUST PARTICLE COUNTER AND MASS ANALYZER
DUST PARTICLE DETECTOR
ELECTRON TEMPERATURE PROBE
ENERGETIC PARTICLE ANISOTROPY SPECTROMETER
ENERGETIC PARTICLE COMPOSITION INSTRUMENT
ENERGETIC PARTICLES DETECTOR
ENERGETIC PARTICLES INVESTIGATION
ESO MULTIMODE INSTRUMENT
EXTREME ULTRAVIOLET SPECTROMETER
FIELD PORTABLE ANEMOMETER MASTS
FLUXGATE MAGNETOMETER
FOCAL PLANE ARRAY
GALILEO DUST DETECTION SYSTEM
GALILEO PROBE MASS SPECTROMETER

GALILEO PROBE NEPHELOMETER
GAMMA RAY SPECTROMETER
GAMMA RAY SPECTROMETER / HIGH ENERGY NEUTRON DETECTOR
GAS CHROMATOGRAPH MASS SPECTROMETER
GAS INSTRUMENT
GIOTTO RADIOSCIENCE EXPERIMENT
GOLDSTONE DEEP SPACE NETWORK ANTENNA DSS-14
GPS MICROTERRAIN
GRAVITATIONAL WAVE EXPERIMENT
HALLEY MULTICOLOUR CAMERA
HASSELBLAD 70MM STEREO CAMERA SYSTEM
HEAVY ION COUNTER
HELIOSPHERIC INST-SPECTRA,COMPOSITION,ANISOTROPY AT LOW ENER
HELIUM ABUNDANCE DETECTOR
HELIUM ABUNDANCE INTERFEROMETER
HUBBLE SPACE TELESCOPE
IHW ASTROMETRY NETWORK
IHW INFRARED IMAGING DATA
IHW INFRARED PHOTOMETRY DATA
IHW INFRARED POLARIMETRY DATA
IHW INFRARED SPECTROSCOPY DATA
IHW LARGE-SCALE PHENOMENA NETWORK
IHW NEAR-NUCLEUS STUDIES NETWORK
IHW SPECTROSCOPY AND SPECTROPHOTOMETRY
IMAGER FOR MARS PATHFINDER
IMAGING PHOTOPOLARIMETER
IMAGING SCIENCE SUBSYSTEM
IMAGING SCIENCE SUBSYSTEM - NARROW ANGLE
IMAGING SCIENCE SUBSYSTEM - WIDE ANGLE
INFRARED FILTER REFERENCE CURVES
INFRARED FILTER REFERENCE TABLES
INFRARED INTERFEROMETER SPECTROMETER
INFRARED INTERFEROMETER SPECTROMETER AND RADIOMETER
INFRARED RADIOMETER
INFRARED SPECTROMETER
INFRARED THERMAL MAPPER
INTERPLANETARY MAGNETIC FIELD EXPERIMENT
ION AND NEUTRAL MASS SPECTROMETER
ION MASS SPECTROMETER
JOHNSTONE PLASMA ANALYZER (JPA)
LABELED RELEASE
LASER RANGEFINDER
LIDAR HIGH-RESOLUTION IMAGER
LIGHTNING AND RADIO EMISSION DETECTOR
LONG WAVELENGTH INFRARED CAMERA
LONG-WAVELENGTH PRIME
LOW ENERGY CHARGED PARTICLE
MAGNETOMETER
MAGNETOMETER - ELECTRON REFLECTOMETER
MAGNETOSPHERIC IMAGING INSTRUMENT
MARK III SPECTROGRAPH
MARS ATMOSPHERIC WATER DETECTOR
MARS ORBITER CAMERA

MARS ORBITER LASER ALTIMETER
MARS PATHFINDER IMP WINDSOCKS
MARS RADIATION ENVIRONMENT EXPERIMENT
METEOR COUNTS - RADAR
METEOR COUNTS - VISUAL
METEOROLOGY
MULTI-SPECTRAL IMAGER
N/A
NEAR INFRARED CAMERA
NEAR INFRARED MAPPING SPECTROMETER
NEAR INFRARED SPECTROMETER
NEAR LASER RANGEFINDER
NEPHELOMETER ENERGETIC PARTICLES INSTRUMENT
NET FLUX RADIOMETER
NEUTRAL MASS SPECTROMETER
NEUTRON SPECTROMETER
NSF CAMERA
OKAYAMA ASTROPHYSICAL SYSTEM - IR IMAGING & SPECTROSCOPY
OPTICAL PROBE EXPERIMENT
ORBITER NEUTRAL MASS SPECTROMETER
ORBITING RADAR
PARABOLA
PARTICULATE IMPACT ANALYZER
PHOTOMETRIC FLUX DATA
PHOTOMETRIC MAGNITUDE DATA
PHOTOPOLARIMETER RADIOMETER
PHOTOPOLARIMETER SUBSYSTEM
PLANETARY RADIO ASTRONOMY RECEIVER
PLASMA ENERGY ANALYZER
PLASMA INSTRUMENT
PLASMA SCIENCE EXPERIMENT
PLASMA WAVE ANALYZER
PLASMA WAVE EXPERIMENT
PLASMA WAVE INSTRUMENT
PLASMA WAVE RECEIVER
POLARIMETRY DATA
PORTABLE FIELD EMISSION SPECTROMETER
RADAR
RADAR SYSTEM
RADIO AND PLASMA WAVE SCIENCE
RADIO OH SPECTRAL LINE DATA
RADIO SCIENCE SUBSYSTEM
RADIO SPECTRAL LINE DATA
RADIO TELESCOPE
RADIOWAVE DETECTOR
RATAN-600
RAYNGER II PLUS
REAGAN SUNPHOTOMETER
ROVER CAMERA LEFT
ROVER CAMERA REAR
ROVER CAMERA RIGHT
SEISMOMETER
SHORT-WAVELENGTH PRIME

SINGLE BEAM VIS/IR INTEL SPECTRORADIOMTR
SOLAR CORONA EXPERIMENT
SOLAR WIND ION COMPOSITION SPECTROMETER
SOLAR WIND OBSERVATIONS OVER THE POLES OF THE SUN
SOLAR WIND PLASMA EXPERIMENT
SOLAR X-RAY/COSMIC GAMMA-RAY BURST INSTRUMENT
SOLAR-WIND EXPERIMENT
SOLAR-WIND INSTRUMENT
SOLID STATE IMAGING SYSTEM
SPECTRAL HYGROMETER
SPICE AND P-EPHEMERIS KERNELS
SPICE KERNELS
STOKES PARAMETERS
SUPERB SEEING IMAGER
TELESCOPES
TELEVISION SYSTEM
THERMAL EMISSION IMAGING SYSTEM
THERMAL EMISSION SPECTROMETER
THERMAL INFRARED MULTISPECTRAL SCANNER
THERMISTOR PROBE
TINSLEY PHOTOMETER
TRIAXIAL FLUXGATE MAGNETOMETER
TUNDE-M ENERGETIC PARTICLE ANALYZER
ULTRAVIOLET IMAGING SPECTROGRAPH
ULTRAVIOLET SPECTROMETER
ULTRAVIOLET/VISIBLE CAMERA
ULYSSES DUST DETECTION SYSTEM
ULYSSES JUPITER SPICE S- AND P-EPHEM. KERNELS
UNIFIED RADIO AND PLASMA WAVE EXPERIMENT
UNK
UNK - INSTRUMENT ID (FC1B)
UNK - INSTRUMENT ID (FC2A)
UNK - INSTRUMENT ID (FC3A)
UNKNOWN
VARIOUS RADIO TELESCOPES
VECTOR HELIUM/FLUXGATE MAGNETOMETERS
VERY LARGE ARRAY
VIKING METEOROLOGY INSTRUMENT SYSTEM
VISUAL AND INFRARED MAPPING SPECTROMETER
VISUAL IMAGING SUBSYSTEM
VISUAL IMAGING SUBSYSTEM - CAMERA A
VISUAL IMAGING SUBSYSTEM - CAMERA B
VISUAL IMAGING SUBSYSTEM CAMERA A
VISUAL IMAGING SUBSYSTEM CAMERA B
WEATHER STATION
X-RAY FLORESCENCE
XRAY/GAMMA RAY SPECTROMETER

INSTRUMENT_PARAMETER_NAME DYNAMIC
ATMOSPHERIC PRESSURE
ATMOSPHERIC TEMPERATURE
ATOMIC NUMBER (Z)

BRIGHTNESS
D1 RATE
D2 RATE
ELECTRIC FIELD COMPONENT
ELECTRIC FIELD WAVEFORM
ELECTRON CURRENT
ELECTRON RATE
ENERGY/NUCLEON
ION CURRENT
ION RATE
MAGNETIC FIELD COMPONENT
N/A
PARTICLE MULTIPLE PARAMETERS
PARTICLE RATE
PHOTON FLUX
PLANETARY RADIUS
POSITION VECTOR
PRESSURE
RADAR ECHO POWER
RADIANCE
RADIANCE A
RADIANCE B
RADIANCE C1
RADIANCE C2
RADIANCE C3
RADIANCE CHANNEL 1
RADIANCE CHANNEL 2
RADIANCE CHANNEL 3
RADIANCE CHANNEL 4
RADIANCE CHANNEL 5
RADIANCE D
RADIANT POWER
RSSDETEB POWER
SPECTRAL INTENSITY
SPECTRAL RADIANCE
TEMPERATURE
UNK
WAVE ELECTRIC FIELD AMPLITUDE
WAVE ELECTRIC FIELD INTENSITY
WAVE FLUX DENSITY
WAVE MAGNETIC FIELD INTENSITY
WIND DIRECTION
WIND SPEED
WIND VELOCITY

INSTRUMENT_PARAMETER_UNIT DYNAMIC
10**-6 WATT / CM**-2 / STERADIAN / WAVENUMBER
AMPS
COUNTS/SECOND
DEGREE
DEGREES CELSIUS
DIMENSIONLESS

KILOMETERS/HOUR
METER
METERS/SECOND
MEV X MEV
MEV/NUCLEON
MILLIBAR
N/A
NANOTESLA
NUMBER OF NUCLEAR PROTONS
UNK
VOLT/METER
VOLTS
WATT/(METER*METER)/STERADIAN
WATT/METER**2/HERTZ
WATTS
WATTS/AREA/STERADIANS
WATT_METER**-2_MICROMETER**-1

INSTRUMENT_TYPE DYNAMIC

ACCELEROMETER
ACOUSTIC SENSOR
ANEMOMETER
ANTENNAE
BAROMETER
BETA DETECTOR
CAMERA
CCD
CCD CAMERA
CHARGED PARTICLE ANALYZER
COSMIC DUST ANALYZER
DETECTOR ARRAY
DOSIMETER
DUST DETECTOR
DUST IMPACT DETECTOR
ELECTRODE COLLECTOR
ELECTROSTATIC ANALYZER
EYE
FARADAY CUP
FRAMING CAMERA
GAMMA-RAY BURST DETECTOR
GAS DETECTOR
HYGROMETER
IMAGER
IMAGING CAMERA
IMAGING SCIENCE SUBSYSTEM
IMAGING SPECTROMETER
IN SITU METEOROLOGY
INFRARED IMAGING DEVICE
INFRARED IMAGING SPECTROMETER
INFRARED INTERFEROMETER
INFRARED PHOTOMETER
INFRARED POLARIMETER

INFRARED SPECTROMETER
ION MASS SPECTROMETER
LASER ALTIMETER
LASER RANGEFINDER
LINEAR ARRAY CAMERA
LOW-FREQUENCY RADIO ARRAY
MAGNETOMETER
MAGNETOMETER ELECTRON REFLECTO
MAGNETOSPHERIC IMAGING
MASS SPECTROMETER
METEOROLOGY
N/A
NEPHELOMETER
OPTICAL SPECTROGRAPH
OPTICAL TELESCOPE
PARTICLE COUNTER
PARTICLE TELESCOPE
PHOTOMETER
PHOTOMULTIPLIER
PHOTOPOLARIMETER
PHOTOPOLARIMETER RADIOMETER
PLASMA EXPERIMENT
PLASMA INSTRUMENT
PLASMA WAVE
PLASMA WAVE SPECTROMETER
POLARIMETER
QUADRUPOLE MASS SPECTROMETER
RADAR
RADAR ANTENNA
RADAR MAPPER
RADIO AND PLASMA WAVE SCIENCE
RADIO SCIENCE
RADIO SPECTROMETER
RADIO TELESCOPE
RADIOMETER
REFERENCE DATA
SPECTROGRAPH
SPECTROMETER
SYNTHESIZED ARRAY
TELESCOPE
THERMAL INFRARED SPECTROMETER
THERMISTOR
THERMOMETER
TOTAL POWER DETECTOR
ULTRAVIOLET SPECTROMETER
UNK
VIDICON CAMERA
VISIBLE SPECTROMETER
VISUAL COUNT
WIDE FIELD CAMERA
WIDE FIELD PLANETARY CAMERA 2

INTERCHANGE_FORMAT STATIC

ASCII
BINARY
EBCDIC

INVERTED_CLOCK_STATE_FLAG STATIC

INVERTED
NON-INVERTED
NOT INVERTED

JOURNAL_NAME DYNAMIC

ADVANCES IN SPACE RESEARCH
AMERICAN SOCIETY OF PHOTOGRAMMETRY
ANNUAL REVIEW OF EARTH AND PLANETARY SCIENCE
APPLIED OPTICS
ASTEROIDS
ASTEROIDS II
ASTRONOMICAL JOURNAL
ASTRONOMY AND ASTROPHYSICS JOURNAL
ASTROPHYSICAL JOURNAL
BULLETIN AMERICAN METEOROLOGICAL SOCIETY
BULLETIN OF THE ASTRONOMICAL INSTITUTE OF CZECHOSLAVAKIA
BULLETIN OF THE GEOLOGICAL SOCIETY OF AMERICA
COSMIC ELECTRODYNAMICS
EOS TRANSACTIONS
EOS TRANSACTIONS, AMERICAN GEOPHYSICAL UNION
GEOLOGICAL SURVEY BULLETIN
GEOPHYSICAL MONOGRAPH
GEOPHYSICAL RESEARCH LETTERS
GIOTTO STUDY NOTE
ICARUS
ICARUS-INTERNATIONAL JOURNAL OF SOLAR SYSTEM STUDIES
IEEE TRANSACTIONS ON GEOSCIENCE AND ELECTRONICS
IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING
IEEE TRANSACTIONS ON MAGNETICS
IEEE TRANSACTIONS ON NUCLEAR SCIENCE
IHW ASTROMETRY NETWORK NEWSLETTER
INT. SOC. OPT. ENG.
IUE NEWSLETTER
JOURNAL OF ATMOSPHERIC SCIENCES
JOURNAL OF GEOPHYSICAL RESEARCH
JOURNAL OF GEOPHYSICAL RESEARCH LETTERS
JOURNAL OF SPACECRAFT AND ROCKETS
JOURNAL OF THE OPTICAL SOCIETY OF AMERICA
JPL DOCUMENT
JPL PUBLICATION
JPL TECHNICAL REPORT 32-1550
JPL TECHNICAL REPORT 32-1550, VOL.V
KIEV COMET CIRCULAR
KOSMICH. ISSLED.
LASER FOCUS/ELECTRO-OPTICS

MAGNETICS
MICROWAVE SYSTEM NEWS
MINOR PLANET CIRCULAR
MONTHLY NOTES OF THE ROYAL ASTRONOMICAL SOCIETY
N/A
NASA CONFERENCE PUBLICATION
NASA PUBLICATION
NASA SPECIAL PUBLICATION
NATURE
NINETEENTH CONFERENCE ON AGRICULTURE AND FOREST METEOROLOGY
OCCULTATION NEWSLETTER
PHD DISSERTATION
PHOTOGRAMMETRIC ENGINEERING AND REMOTE SENSING
PHYSICS OF THE EARTH AND PLANETARY INTERIORS
PHYSICS OF THE JOVIAN MAGNETOSPHERE
PIONEER VENUS PROJECT SPECIFICATION PC-456.O4
PROC OF SOCIETY OF PHOTO-OPTICAL INSTRUMENTATION ENGINEERS
PROC SYMPOSIUM PLANET ATMOS ROYAL SOC CANADA
PROCEEDINGS OF IGARRS'89 SYMPOSIUM
PROCEEDINGS OF THE 12TH LUNAR & PLANETARY SCIENCE CONFERENCE
PROCEEDINGS OF THE 19TH LUNAR & PLANETARY SCIENCE CONFERENCE
PROCEEDINGS OF THE 20TH LUNAR & PLANETARY SCIENCE CONFERENCE
PROCEEDINGS SPIE
PROJECT MAGELLAN SIS DOCUMENT
PUBLICATION OF THE ASTRONOMICAL SOCIETY OF THE PACIFIC
PUBLICATIONS OF THE LICK OBSERVATORY
RADIO SCIENCE
REMOTE SENSING OF ENVIRONMENT
SCIENCE
SCIENTIFIC AMERICAN
SPACE SCIENCE REVIEW
THE ASTRONOMICAL JOURNAL
THE EARTH, MOON AND PLANETS
THE MOON
THE PLANETARY REPORT
THESIS
UC SPACE SCIENCE LAB SERIES
YALE PLANETARY EXPLORATION SERIES

KERNEL_TYPE [SPICE] STATIC
CLOCK_COEFFICIENTS
EPHEMERIS
EVENTS
INSTRUMENT
LEAPSECONDS
POINTING
TARGET_CONSTANTS

LIGHT_FLOOD_STATE_FLAG STATIC
OFF
ON

LIGHT_SOURCE_NAME	DYNAMIC
EARTH	
MOON	

LINE_DISPLAY_DIRECTION	STATIC
down	
left	
right	
up	

MAP_PROJECTION_TYPE	DYNAMIC
AITOFF	
ALBERS	
BONNE	
BRIESEMEISTER	
CYLINDRICAL EQUAL AREA	
EQUIDISTANT	
GNOMONIC	
HAMMER	
HENDU	
LAMBERT AZIMUTHAL EQUAL AREA	
LAMBERT CONFORMAL	
MERCATOR	
MOLLWEIDE	
ORTHOGRAPHIC	
SIMPLE CYLINDRICAL	
SINUSOIDAL	
STEREOGRAPHIC	
TRANSVERSE MERCATOR	
VAN DER GRINTEN	
WERNER	

MEDIUM_FORMAT	DYNAMIC
1 GB	
1.0 MB	
1.6 MB	
150 MB	
1600 BPI	
2 GB	
2.0 MB	
30 MB	
360 KB	
5 GB	
60 MB	
6250 BPI	
650 MB	
800 BPI	

MEDIUM_TYPE STATIC

12-IN WORM DISK
14-IN WORM DISK
19-MM HELICAL SCAN TAPE
3.5-IN MAGNETO-OPTIC DISK
3.5-IN. FLOPPY DISK
4-MM HELICAL SCAN TAPE
5.25-IN FLOPPY DISK
5.25-IN MAGNETO-OPTIC DISK
5.25-IN WORM DISK
7-TRACK MAG TAPE
8-MM HELICAL SCAN TAPE
9-TRACK MAG TAPE
CARTRIDGE TAPE
CD-ROM
CD-WO
DVD-R
DVD-ROM
ELECTRONIC
MAGNETIC TAPE
PHOTO
TAPE

METEORITE_SUB_TYPE DYNAMIC

OCTAHEDRITES

METEORITE_TYPE DYNAMIC

ACHONDRITE
CARBONACEOUS CHONDRITE
ENSTATITE CHONDRITE
IRON
ORDINARY CHONDRITE
STONY-IRON

MINERAL_NAME DYNAMIC

ALBITE
ANORTHITE
CARBON BLACK
DIOPSIDE
ENSTATITE
FELDSPAR
GRAPHITE
MAGNETITE
NICKEL
OLIVINE
TROILITE

MISSION_ALIAS_NAME STATIC

CLEMENTINE 1
COMET IMPACT 94
GALILEO EUROPA MISSION (GEM)
HUBBLE SPACE TELESCOPE
HUYGENS
INTERNATIONAL SOLAR POLAR MISSION
INTERNATIONAL SUN-EARTH EXPLOR
INTERNATIONAL UV EXPLORER
IRAS
JUPITER ORBITER-PROBE (JOP)
MARINER 6 & 7
MARINER 9
MARS ENVIRONMENTAL SURVEY
MARS ENVIRONMENTAL SURVEY (MESUR PATHFINDER)
MGS
MJS77
MS-T5
N/A
NEAR
ODYSSEY
P12
PIONEER 12
PLANET-A
UNK
VENERA-GALLEY 2
VENUS RADAR MAPPER (VRM)
VIKING75
VRM

MISSION_NAME STATIC

2001 MARS ODYSSEY
ASTEROID OBSERVATIONS
CASSINI-HUYGENS MISSION TO SATURN AND TITAN
COMET SL9/JUPITER COLLISION
DEEP SPACE PROGRAM SCIENCE EXPERIMENT
GALILEO
GEOLOGIC REMOTE SENSING FIELD EXPERIMENT
GIOTTO
GROUND BASED ATMOSPHERIC OBSERVATIONS
HST
IHW
INFRARED ASTRONOMICAL SATELLITE
INTERNATIONAL COMETARY EXPLORER
INTERNATIONAL HALLEY WATCH
IUE
LUNAR PROSPECTOR
MAGELLAN
MARINER69
MARINER71
MARS GLOBAL SURVEYOR
MARS OBSERVER
MARS PATHFINDER

N/A
NEAR EARTH ASTEROID RENDEZVOUS
PIONEER
PIONEER VENUS
PRE-MAGELLAN
SAKIGAKE
SATURN RING PLANE CROSSING 1995
SUISEI
ULYSSES
VEGA 1
VEGA 2
VIKING
VOYAGER

MISSION_NAME_OR_ALIAS STATIC

GALILEO
MAGELLAN
MARINER69
MARINER71
MARS OBSERVER
N/A
PIONEER
UNK
VENUS RADAR MAPPER (VRM)
VIKING
VOYAGER

MISSION_PHASE_NAME DYNAMIC

ALL
CRUISE
EARTH 1 ENCOUNTER
EARTH 2 ENCOUNTER
EARTH ENCOUNTER
EARTH PHASING LOOP A
EARTH PHASING LOOP B
EARTH-EARTH CRUISE
EARTH-JUPITER CRUISE
EARTH-VENUS CRUISE
EXTENDED MISSION
GASPRA ENCOUNTER
IDA ENCOUNTER
JUPITER APPROACH
JUPITER ENCOUNTER
JUPITER ORBIT INSERTION
LAUNCH
LOW EARTH ORBIT
LUNAR MAPPING
MAPPING
MAPPING CYCLE 1
MAPPING CYCLE 2
NEPTUNE ENCOUNTER

ORBIT INSERTION
PRIMARY MISSION
PROBE RELEASE
SATURN ENCOUNTER
SURVEY MISSION
URANUS ENCOUNTER
VENUS ENCOUNTER
VENUS-EARTH CRUISE

MISSION_PHASE_TYPE STATIC

CRUISE
EARTH-EARTH CRUISE
EARTH-VENUS CRUISE
EARTH1 ENCOUNTER
ENCOUNTER
EXTENDED MISSION
GASPRA ENCOUNTER
INTERPLANETARY CRUIS
LANDED
LAUNCH
MAPPING CYCLE
MAPPING CYCLE 1
MAPPING CYCLE 2
MAPPING CYCLE 3
MAPPING CYCLE 4
MAPPING CYCLE 5
N/A
ORBIT CHECKOUT
ORBIT INSERTION
ORBITAL
ORBITAL OPERATIONS
PRELAUNCH
VENUS ENCOUNTER
VENUS-EARTH CRUISE

MODE_CONTINUATION_FLAG STATIC

N
Y

NODE_ID STATIC

ATMOS
CN
GEOSCIENCE
HQ
IMAGING
IMAGING-JPL
N/A
NAIF
NSSDC
PPI-IOWA

PPI-UCLA
RAD
RINGS
RS
SBN

NODE_INSTITUTION_NAME		DYNAMIC

GODDARD SPACE FLIGHT CENTER
JET PROPULSION LABORATORY
JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
N/A
NASA/AMES RESEARCH CENTER
NEW MEXICO STATE UNIVERSITY
UNITED STATES GEOLOGICAL SURVEY
UNIVERSITY OF CALIFORNIA, LOS ANGELES
UNIVERSITY OF HAWAII
UNIVERSITY OF IOWA
UNIVERSITY OF MARYLAND
WASHINGTON UNIVERSITY

NODE_NAME		STATIC

CENTRAL
GEOSCIENCES
IMAGING
N/A
NATIONAL SPACE SCIENCE DATA CENTER
NAVIGATION ANCILLARY INFORMATION FACILITY
PLANETARY ATMOSPHERES
PLANETARY PLASMA INTERACTIONS
PLANETARY PLASMA INTERACTIONS - IOWA
PLANETARY PLASMA INTERACTIONS - UCLA
PLANETARY RINGS
RADIOMETRY
SMALL BODIES

NOISE_TYPE	[PDS-RINGS]	DYNAMIC

GAUSSIAN
POISSON
UNK

OBJECT_CLASSIFICATION_TYPE	[PDS-CN]	STATIC

DATA SET CATALOG
DEFINITION
PRODUCT CATALOG
STRUCTURE
SYSTEM

OBJECT_TYPE	[PDS-CN]	STATIC
GENERIC		
SPECIFIC		
OBSTRUCTION_ID		STATIC
NOT POSSIBLE		
POSSIBLE		
PRESENCE VERIFIED		
ON_CHIP_MOSAIC_FLAG	[PDS-IMG-GLL]	STATIC
N		
UNK		
Y		
OPERATING_SYSTEM_ID		FORMATION
DOS 3.3		
DOS 4.0		
MAC		
OS/2		
UNIX 4.2 BSD		
UNIX SYSTEM 5		
VMS 4.6		
ORBIT_DIRECTION		STATIC
N/A		
PROGRADE		
RETROGRADE		
UNK		
OUTPUT_FLAG	[PDS-CN]	STATIC
N		
Y		
PARTICLE_SPECIES_NAME		DYNAMIC
ELECTRONS		
IONS		
PDS_ADDRESS_BOOK_FLAG		STATIC
N		
NULL		
Y		
PDS_VERSION_ID	[PDS-CN]	STATIC
PDS3		
PDS4		

PEER_REVIEW_DATA_SET_STATUS	[PDS-CN]	DYNAMIC
MAJOR LIENS		
MINOR LIENS		
PASSED		

PEER_REVIEW_ROLE	[PDS-CN]	DYNAMIC
CHAIR		
DATA PREPARER		
DATA SUPPLIER		
EXTERNAL PEER		
PDS CENTRAL NODE		
PDS DA		
PDS DET		
PDS PROJECT SCIENTIST		
PDS SCIENCE MANAGER		

PERSON_INSTITUTION_NAME		SUGGESTED
ARIZONA STATE UNIVERSITY		
BROWN UNIVERSITY		
CALIFORNIA INSTITUTE OF TECHNOLOGY		
CORNELL UNIVERSITY		
DENISON UNIVERSITY		
GEORGIA INSTITUTE OF TECHNOLOGY		
INSTITUTE FOR ASTRONOMY		
JET PROPULSION LABORATORY		
JOHNS HOPKINS UNIVERSITY		
KITT PEAK NATIONAL OBSERVATORY		
KONKOLY OBSERVATORY OF THE HUNGARIAN ACADEMY OF SCIENCE		
LOS ALAMOS NATIONAL LABORATORY		
LUNAR AND PLANETARY INSTITUTE		
MASSACHUSETTS INSTITUTE OF TECHNOLOGY		
N/A		
NASA HEADQUARTERS		
NASA/AMES RESEARCH CENTER		
NASA/GODDARD SPACE FLIGHT CENTER		
NASA/JOHNSON SPACE CENTER		
NATIONAL AERONAUTICS SPACE MUSEUM		
NEW MEXICO STATE UNIVERSITY		
PLANETARY SCIENCE INSTITUTE		
RADIOPHYSICS INCORPORATED		
SCIENCE APPLICATIONS INTERNATIONAL CORP		
SMITHSONIAN ASTROPHYSICAL OBSERVATORY		
STANFORD UNIVERSITY		
SWRI		
TEXAS A & M UNIVERSITY		
UNITED STATES GEOLOGICAL SURVEY		
UNIVERSITY OF ARIZONA		
UNIVERSITY OF CALIFORNIA, LOS ANGELES		
UNIVERSITY OF CHICAGO		

UNIVERSITY OF COLORADO
UNIVERSITY OF FLORIDA
UNIVERSITY OF HAWAII
UNIVERSITY OF IOWA
UNIVERSITY OF MARYLAND
UNIVERSITY OF NEW MEXICO
UNIVERSITY OF VIRGINIA
UNIVERSITY OF WASHINGTON
UNIVERSITY OF WISCONSIN
UNK
WASHINGTON UNIVERSITY
WELLESLEY COLLEGE

PHASE_INFORMATION_FLAG [PDS-RINGS] STATIC
N
Y

PLANETARY_OCCULTATION_FLAG [PDS-RINGS] STATIC
N
Y

PLATFORM SUGGESTED
IBM/DOS
MULTIPLE
SUN/SUNOS
SUN_10/SOLARIS
SUN_2/SUNOS
VAX/VMS

PLATFORM_OR_MOUNTING_NAME DYNAMIC
MAGNETOMETER BOOM
METEOROLOGY BOOM ASSEMBLY
N/A
PIONEER VENUS ORBITER
PROBE DESCENT MODULE
ROTOR
SCAN PLATFORM
SCIENCE BOOM
SPACECRAFT
SPACECRAFT BUS
STATOR

POSITIVE_LONGITUDE_DIRECTION STATIC
EAST
WEST

PRIMARY_BODY_NAME STATIC

- CERES
- COMET
- EARTH
- GALAXY
- HALLEY
- JUPITER
- MARS
- N/A
- NEPTUNE
- P/GRIGG_SKJELLERUP
- PLUTO
- SATURN
- SL9
- SOLAR SYSTEM BARYCENTER
- SUN
- UNK
- URANUS

PROCESSING_LEVEL_ID STATIC

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- N

PRODUCER_INSTITUTION_NAME DYNAMIC

- AMES RESEARCH CENTER
- ARIZONA STATE UNIVERSITY
- CALIFORNIA INSTITUTE OF TECHNOLOGY
- CORNELL UNIVERSITY
- GODDARD SPACE FLIGHT CENTER
- JET PROPULSION LABORATORY
- JOHNS HOPKINS APPLIED PHYSICS LABORATORY
- JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY
- MULTIMISSION IMAGE PROCESSING SUBSYSTEM, JET PROPULSION LAB
- MULTIMISSION SAR PROCESSING FACILITY, JET PROPULSION LAB
- NASA/GODDARD SPACE FLIGHT CENTER
- NATIONAL ASTRONOMY AND IONOSPHERE CENTER, CORNELL UNIVERSITY
- NAVAL RESEARCH LABORATORY
- PLANETARY SCIENCE INSTITUTE
- RADIOPHYSICS, INCORPORATED
- U.S.G.S. FLAGSTAFF
- UNIVERSITY OF ARIZONA
- UNIVERSITY OF CALIFORNIA, LOS ANGELES

UNIVERSITY OF COLORADO
UNIVERSITY OF HAWAII
UNIVERSITY OF IOWA
UNIVERSITY OF WASHINGTON
UPPSALA UNIVERSITET
WASHINGTON UNIVERSITY

PRODUCT_TYPE		STATIC
EDR		
REDR		
REFDR		
UDR		
RECORD_TYPE		STATIC
FIXED LENGTH		
STREAM		
UNDEFINED		
VARIABLE LENGTH		
REFERENCE_OBJECT_NAME		DYNAMIC
EQUATORIAL PLANE		
JUPITER		
N/A		
NEPTUNE		
SATURN		
SPACECRAFT		
SUN		
UNK		
URANUS		
REFERENCE_TARGET_NAME		DYNAMIC
ASCENDING NODE		
EARTH		
N/A		
PLANET		
SPACECRAFT		
SUN SPIN AXIS		
VENUS		
VOYAGER		
REQUIRED_FLAG	[PDS-CN]	STATIC
N		
Y		
RETICLE_POINT_NUMBER		STATIC
1		
3		

7
9

RING_OCCULTATION_DIRECTION	[PDS-RINGS]	STATIC
BOTH		
EGRESS		
INGRESS		
MULTIPLE		
ROTATION_DIRECTION		STATIC
N/A		
PROGRADE		
RETROGRADE		
SYNCHRONOUS		
UNK		
SAMPLE_BITS		DYNAMIC
1		
16		
2		
32		
4		
64		
8		
SAMPLE_DISPLAY_DIRECTION		STATIC
down		
left		
right		
up		
SAMPLE_TYPE		DYNAMIC
IEEE REAL		
LSB INTEGER		
LSB UNSIGNED INTEGER		
MSB INTEGER		
MSB UNSIGNED INTEGER		
UNSIGNED INTEGER		
VAX REAL		
SAMPLING_PARAMETER_NAME		DYNAMIC
ALONG TRACK DISTANCE		
ATOMIC NUMBER		
DELAY-DOPPLER		
DISTANCE		
ENERGY PER NUCLEON		
FREQUENCY		

FREQUENCY OFFSET
N/A
PIXEL
TIME
UNK
VOLTAGE
WAVE NUMBER
WAVELENGTH

SAMPLING_PARAMETER_UNIT DYNAMIC
AMPLITUDE
AREA
ATOMIC NUMBER
CENTIMETER
DEGREE
DEGREE (AREOCENTRIC SOLAR LONGITUDE)
HERTZ
HOUR
INTENSITY
KILOMETER
MARS SOLAR DAY
MARS SOLAR DAY / 25
METER
MEV PER NUCLEON
MICROMETER
MICROSECOND
MINUTE
N/A
NANOMETER
PHASE
SECOND
SECONDS
UNK
VOLTS

SCAN_MODE_ID DYNAMIC
.055
4.0

SECTION_ID DYNAMIC
ALT
ARCB
ASAR
ASAS
AVIR
AWND
CH1
CH2
CRS
DAED

GPSM
GSSR
HFM
HSTK
HSTP
IMG
IRTM
ISSN
ISSW
LECP
LFM
MAWD
MET
PARB
PFES
PLS
PRA
RAD
REAG
RMTR
RSS
SA
SAR
SHYG
SIRS
THRM
TIMS
VISA
VISB
WFRM
WTHS

SHUTTER_EFFECT_CORRECTION_FLAG STATIC
FALSE
TRUE

SOFTWARE_ACCESSIBILITY_DESC [PDS-CN] TEXT
ACCESSIBLE THROUGH PDS CATALOG
N/A
NOT ACCESSIBLE THROUGH PDS CATALOG - CONTACT NODE
NOT ACCESSIBLE THRU THE PDS CATALOG SYSTEM-CONTACT NODE.
UNK

SOFTWARE_FLAG STATIC
N
Y

SOFTWARE_LICENSE_TYPE SUGGESTED
COMMERCIAL

PUBLIC_DOMAIN
SHAREWARE

SOFTWARE_PURPOSE		SUGGESTED
ANALYSIS		
BROWSE		
COPY		
DATA_MODELING		
DEVELOPMENT		
DISPLAY		
DOCUMENTATION		
INVENTORY		
MANAGEMENT		
MATHEMATICS		
MODIFICATION		
PROCESSING		
PRODUCTION		
REFORMATTING		
SUBSETTING		
THEORY		
TRANSFORMATION		
VERIFICATION		
SOFTWARE_TYPE	[PDS-CN]	STATIC
N/A		
UNK		
SOURCE_SAMPLE_BITS		DYNAMIC
1		
16		
2		
32		
4		
64		
8		
SPACECRAFT_ID	[JPL-AMMOS-SPECIFIC]	STATIC
GO		
GP		
MGN		
MO		
MR10		
MR4		
MR6		
MR7		
MR9		
P10		
P11		
P12		

UL
VG1
VG2
VL1
VL2
VO1
VO2

SPACECRAFT_NAME		DYNAMIC

CLEMENTINE 1
GALILEO ORBITER
GALILEO PROBE
MAGELLAN
MARINER 10
MARINER 4
MARINER 6
MARINER 7
MARINER 9
MARS OBSERVER
PIONEER 10
PIONEER 11
PIONEER 12
ULYSSES
VIKING LANDER 1
VIKING LANDER 2
VIKING ORBITER 1
VIKING ORBITER 2
VOYAGER 1
VOYAGER 2

SPACECRAFT_OPERATING_MODE_ID		DYNAMIC

GS3
GS5

SPACECRAFT_OPERATIONS_TYPE		STATIC

ATMOSPHERIC PROBE
FLYBY
LANDER
N/A
ORBITER
ORBITER OPERATIONS
PROBE
ROVER

SQL_FORMAT	[PDS-CN]	STATIC

CHAR(N)
FLOAT
INTEGER
SMALLINT

STANDARD_VALUE_TYPE	[PDS-CN]	STATIC
DEFINITION DYNAMIC FORMATION RANGE STATIC SUGGESTED TEXT		
STATUS_TYPE	[PDS-CN]	STATIC
APPROVED OBSOLETE PENDING		
STRETCHED_FLAG		STATIC
FALSE TRUE		
SUFFIX_HIGH_INSTR_SAT	[ISIS]	DYNAMIC
-32765 16#FFFCFFFF# 3		
SUFFIX_HIGH_REPR_SAT	[ISIS]	DYNAMIC
-32764 16#FFFBFFFF# 4		
SUFFIX_ITEM_BYTES	[ISIS]	STATIC
1 2 4		
SUFFIX_ITEM_TYPE	[ISIS]	DYNAMIC
UNSIGNED_INTEGER VAX_BIT_STRING VAX_INTEGER VAX_REAL		
SUFFIX_LOW_INSTR_SAT	[ISIS]	DYNAMIC
-32766 16#FFFDFFFF#		

2

SUFFIX_LOW_REPR_SAT	[ISIS]	DYNAMIC

-32767
1
16#FFFEFFFF#

SUFFIX_NAME	[ISIS]	DYNAMIC

EMISSION ANGLE
INCIDENCE ANGLE
INTERCEPT ALTITUDE
LATITUDE
LONGITUDE
PHASE ANGLE
SLANT DISTANCE

SUFFIX_NULL	[ISIS]	DYNAMIC

-32768
0
16#FFFFFFFF#

SUFFIX_VALID_MINIMUM	[ISIS]	DYNAMIC

-32752
16#FFEFFFFF#
5

SURFACE_BASED_INST_METHOD		DYNAMIC

FALSE
TRUE

SYSTEM_BULLETIN_TYPE	[PDS-CN]	STATIC

CATALOG
CATALOG-VIEW
CD-ROM
CENTRAL-NODE
CONFERENCES
DATA-SET
DISCIPLINE-NODE
DOCUMENTS
DPS
MEETINGS
MISC
NSI/DECNET
OPERATIONS
ORDER
ORDER INSTRUCTIONS
PEER-REVIEW

RELEASE NOTES
SOFTWARE
TOOLS

SYSTEM_CLASSIFICATION_ID	[PDS-CN]	STATIC

COMMON
ISIS
JPL-AMMOS
PDS-ATMOS
PDS-CN
PDS-GEO-MGN
PDS-IMG-GLL
PDS-PPI
PDS-SBN
SPICE
mars-observer
pds-rings

TABLE_STORAGE_TYPE		DYNAMIC

COLUMN MAJOR
ROW MAJOR

TARGET_NAME   STATIC

1989N1
1989N2
ADRASTEA
ALPHA CEN
ALPHA LEO
ALPHA LYR
ALPHA PAV
ALTAIR
AMALTHEA
ANANKE
APXSSITE
ARCTURUS
ARIEL
ASTEROID
ATLAS
BETA ARIETIS
BETA CEN
BETA CMA
BLACK SKY
CAL LAMPS
CALIMG
CALLISTO
CALYPSO
CARME
CERES
CHARON
COMET

DARK
DARK SKY
DEIMOS
DELTA PISCIUM
DIONE
DIONE B
DUST
EARTH
ELARA
EMISSION NEBULA
ENCELADUS
EPIMETHEUS
EROS
ETA-AQUARID
EUROPA
GAMMA ORIONIS
GANYMEDE
GASPRA
GEOGRAPHOS
GIACOBINI-ZINNER
GRIGG SKJELLERUP
HALLEY
HD151288
HELENE
HIMALIA
HYPERION
IAPETUS
IDA
IO
IO PLASMA TORUS
J RINGS
JANUS
JUPITER
LANDER
LEDA
LYSITHEA
MAG
MARS
MATHILDE
MERCURY
METEORITE
METIS
MIMAS
MINOR SATELLITE
MIRANDA
MOON
N RINGS
N/A
NEPTUNE
NEREID
NON SCIENCE
OBERON
OPEN CLUSTER

ORION
ORIONID
PAN
PANDORA
PASIPHAE
PHOBOS
PHOEBE
PLAQUE
PLEIADES
PLUTO
PROMETHEUS
PUCK
REFLECTION NEBULA
RHEA
ROCK
ROVER
S RINGS
SATURN
SCAT LIGHT
SCORPIUS
SIGMA SGR
SINOPE
SIRIUS
SKY
SL9
SOLAR_SYSTEM
STAR
SUN
SYSTEM
TAU CETI
TELESTO
TETHYS
THEBE
TITAN
TITANIA
TRITON
U RINGS
UMBRIEL
UNK
URANUS
VEGA
VENUS
WINDSOCK

TARGET_PARAMETER_NAME STATIC

A AXIS RADIUS
ALL
ASCENDING NODE LONGITUDE
B AXIS RADIUS
BOND ALBEDO
C AXIS RADIUS
EQUATORIAL RADIUS

FLATTENING
MAGNETIC MOMENT
MASS
MASS DENSITY
MEAN RADIUS
MEAN SOLAR DAY
N/A
OBLIQUITY
ORBITAL ECCENTRICITY
ORBITAL INCLINATION
ORBITAL SEMIMAJOR AXIS
PERIAPSIS ARGUMENT ANGLE
POLE DECLINATION
POLE RIGHT ASCENSION
REVOLUTION PERIOD
SIDEREAL ROTATION PERIOD
SURFACE GRAVITY
UNK

TARGET_TYPE STATIC
ASTEROID
CALIBRATION
COMET
DUST
METEORITE
METEOROID STREAM
N/A
NEBULA
PLANET
PLANETARY SYSTEM
PLASMA CLOUD
RING
SATELLITE
STAR
SUN

TASK_NAME DYNAMIC
DATA RECOVERY AND ANALYSIS
GROUP LEADER
GRSFE
N/A
PLANETARY DATA SYSTEM
RESEARCH STAFF
UNK
VIKING

TECHNICAL_SUPPORT_TYPE SUGGESTED
FULL
ONE_TIME
PROTOTYPE

TELEMETRY_FORMAT_ID STATIC

- AI8
- BDT
- BPB
- BPT
- EHR
- ELS
- ESS
- HCA
- HCJ
- HCM
- HIM
- HIS
- HMA
- HPB
- HPJ
- HPW
- HRW
- IM4
- IM8
- LNR
- LPB
- LPU
- LRS
- MPB
- MPP
- MPR
- MPW
- PW4
- PW8
- XCM
- XED
- XPB
- XPN
- XPW
- XRW

TELESCOPE_ID DYNAMIC

- A
- B
- C
- D
- IRS
- ISS-NA
- ISS-WA
- MAWD
- N/A
- VISA
- VISB

TWIST_ANGLE_TYPE	STATIC
DEFAULT	
GALILEO	

UNEVEN_BIT_WEIGHT_CORR_FLAG	STATIC
OFF	
ON	

VECTOR_COMPONENT_ID	DYNAMIC
CLST LAT	
CLST LNG	
DECLNATN	
ESL X	
ESL Y	
ESL Z	
GAMMA	
ICC X	
ICC Y	
ICC Z	
LAT	
LATJ$-3	
LATS$-3	
LATU$-3	
LONG	
LONJ$-3	
LONS$-3	
LONU$-3	
PHI	
PVO X	
PVO Y	
PVO Z	
R	
R ASCNSN	
RADIUS	
RHO	
RJ$	
RS$	
RU$	
SIGMA	
THETA	
V	
VPHI	
VR	
VRHO	
VSO X	
VSO Y	
VSO Z	
VZ	

W LONG
WX
WY
WZ
X
XE
XS
Y
YE
YS
Z
ZE
ZS

VECTOR_COMPONENT_ID_1 DYNAMIC
RJ$
RS$
RU$

VECTOR_COMPONENT_ID_2 DYNAMIC
LATJ$-3
LATS$-3
LATU$-3

VECTOR_COMPONENT_ID_3 DYNAMIC
LONJ$-3
LONS$-3
LONU$-3

VECTOR_COMPONENT_TYPE DYNAMIC
DISTANCE
ISCC X
ISCC Y
ISCC Z
LATITUDE
LONGITUDE
RANGE
SSCC X
SSCC Y
SSCC Z
ULATITUDE
VELOCITY
X
Y
Z

VECTOR_COMPONENT_UNIT DYNAMIC
AU

DEGREES
JOVIAN RADII (1Rj = 71398km)
KM/S
N/A
PLANETARY RADII
RN (RN = 24,765KM)
RU (RU = 25,600KM)
SATURN RADII (1 Rs = 60330 km)
UNK
URANUS RADII (1 Ru = 25600 km)

VOLUME_FORMAT DYNAMIC
ANSI
HIGH-SIERRA
ISO-9660
NONE
TAR
VAX-BACKUP

VOLUME_SERIES_NAME DYNAMIC
AMES MARS GENERAL CIRCULATION MODEL
DIS_VOLUME_SER_NAME_AA_0001
GROUND BASED ATMOSPHERIC OBSERVATIONS
INTERNATIONAL HALLEY WATCH
MISSION TO EARTH
MISSION TO JUPITER
MISSION TO MARS
MISSION TO THE MOON
MISSION TO VENUS
PIONEER VENUS ORBITER SERIES
PLANETARY DATA SYSTEM EDUCATIONAL RESOUR
VOYAGERS TO THE OUTER PLANETS

VOLUME_SET_NAME DYNAMIC
CLEMENTINE: BASEMAP MOSAIC
CLEMENTINE: EDR IMAGE ARCHIVE
COMET HALLEY ARCHIVE
COMETS CROMMELIN AND GIACOBINI-ZINNER ARCHIVE
DTM/MDIM: GLOBAL COVERAGE
ELECTRON TEMPERATURE PROBE PROCESSED DATA SETS
FIELDS AND PARTICLES DATA SETS
GALILEO EARTH/MOON NIMS EXPERIMENT DATA RECORDS V1.0
GALILEO SOLID STATE IMAGING RAW EDR IMAGES
GALILEO VENUS NIMS EXPERIMENT DATA RECORDS V1.0
GALILEO: NEAR INFRARED MAPPING SPECTROMETER (NIMS) CUBE DAT
GEOLOGIC REMOTE SENSING FIELD EXPERIMENT
GIOTTO EXTENDED MISSION ARCHIVE
GROUND BASED ATMOSPHERIC OBSERVATIONS
IRIS DERIVED PARAMETERS JUPITER & SATURN
IRIS FULL RESOLUTION SPECTRA JUPITER

IRIS FULL RESOLUTION SPECTRA NEPTUNE
IRIS FULL RESOLUTION SPECTRA SATURN
IRIS FULL RESOLUTION SPECTRA URANUS
MAGELLAN: ALTIMETRY AND RADIOMETRY COMPOSITE DATA
MAGELLAN: FULL RESOLUTION RADAR MOSAICS
MAGELLAN: GLOBAL ALTIMETRY AND RADIOMETRY DATA
MAGELLAN: LINE OF SIGHT ACCELERATION PROFILE DATA
MAGELLAN: RADIO OCCULTATION RAW DATA
MAGELLAN: RSS 5 OCCULTATION PROFILES
MAGELLAN: SPHERICAL HARMONIC MODELS AND DIGITAL MAP DATA
MAGELLAN: THE MOSAIC IMAGE DATA
MAGNETOMETER AND ELECTRIC FIELD DETECTOR
MARINER 9 IRIS SPECTRAL OBSERVATIONS OF MARS
MDIM: AMAZONIS PLANITIA REGION
MDIM: ARABIA TERRA REGION
MDIM: ELYSIUM PLANITIA REGION
MDIM: PLANUM AUSTRALE REGION
MDIM: VASTITAS BOREALIS REGION
MDIM: XANTHE TERRA REGION
MULTI-LOOK COLOR MDIM - VOLUME 14
MULTI-LOOK COLOR MDIM: AMAZONIS PLANITIA REGION
MULTI-LOOK COLOR MDIM: ARABIA TERRA REGION
MULTI-LOOK COLOR MDIM: ELYSIUM PLANITIA REGION
MULTI-LOOK COLOR MDIM: PLANUM AUSTRALE REGION
MULTI-LOOK COLOR MDIM: VASTITAS BOREALIS REGION
MULTI-LOOK COLOR MDIM: XANTHE TERRA REGION
NEUTRAL MASS SPECTROMETER DATA
PDS WELCOME TO THE PLANETS
PRE-MAGELLAN RADAR AND GRAVITY DATA
SUPPLEMENTAL EXPERIMENTER DATA RECORD (SEDR) RAW DATA
UVS DERIVED NORTH/SOUTH MAPS
VIKING LANDER EDR IMAGES
VIKING LANDER FOOTPAD TEMPERATURE SENSOR DATA
VIKING LANDER METEOROLOGY BINNED PRESSURE, TEMP, WIND CORR
VIKING LANDERS IMAGING ATMOSPHERIC OPTICAL DEPTH DATA
VIKING LANDERS METEOROLOGY BINNED PRESSURE, TEMP, WIND
VIKING LANDERS METEOROLOGY POINT-BY-POINT PRESSURE DATA
VIKING LANDERS METEOROLOGY SUMMARY PRESSURE DATA
VIKING ORBITER 1 & 2: INFRARED THERMAL MAPPER DATA
VIKING ORBITER IMAGES OF MARS
VIKING ORBITERS AND MARINER 9 MARS CLOUD CATALOG
VIKING ORBITERS INFRARED THERMAL MAPPER BINNED/CLOUDS
VIKING ORBITERS MARS ATMOSPHERIC WATER DETECTOR
VOYAGER IMAGES OF JUPITER
VOYAGER IMAGES OF NEPTUNE
VOYAGER IMAGES OF SATURN
VOYAGER IMAGES OF URANUS
VOYAGER RADIO OCCULTATION REDUCED DATA

APPENDIX B. JPL-MGDS STANDARD VALUES

This section defines standard values that are unique to the JPL Multimission Ground Data System (MGDS, formerly the Space Flight Operations Center). These values are mostly specific to products that are unique to MGDS. Other values are repeated here so as to correlate them with associated values. Please refer to the MGDS-PDS interface specification in the MGDS Software Interface Specification, module CDB-Any-Catalog2 for specific restrictions and conventions regarding use of these elements and values.

Top-Level Mission Ground Data System Parameters

Mission Name	Mission ID	Acronym	Spacecraft Name	Spacecraft Acronym	Spacecraft ID
VOYAGER	0	VGR	VOYAGER_1	VGR1	31
			VOYAGER_1_SIM		41
			VOYAGER_2	VGR2	32
			VOYAGER_2_SIM		42
ULYSSES	3	ULS	ULYSSES	ULS	55
			ULYSSES_SIM		65
GALILEO	1	GLL	GALILEO	GLL	77
			GALILEO_SIM		87
CASSINI	7	CAS	CASSINI	CAS	82
			CASSINI_SIM		90
			CASSINI_ITL		81
			CASSINI_HS_SIM		149
MARS_PATHFINDER	6	MPF	MARS_ PATHFINDER	MPF	53
			MARS_ PATHFINDER _SIM		84
MARS_GLOBAL_SURVEYOR	5	MGS	MARS_GLOBAL_SURVEYOR	MGS	94
			MARS_GLOBAL_SURVEYOR_SIM	MGS	95
MARS_SURVEYOR_98	14	MGS	MARS_ SURVEYOR_98_ORIBTER	M98O	127
			MARS_ SURVEYOR_98_LANDER	M98L	116
			MARS_ SURVEYOR_98_ORIBTER_SIM		120
			MARS_ SURVEYOR_98_LANDER_SIM		60
MARS_SURVEYOR_01	15	M01	MARS_ SURVEYOR_01_ORIBTER	M01O	
			MARS_ SURVEYOR_01_LANDER	M01L	

		MARS_ SURVEYOR_01_ORIBTER_SIM MARS_ SURVEYOR_01_LANDER_SIM		
MARS_SURVEYOR_03	16 M03	MARS_ SURVEYOR_03_ORIBTER MARS_ SURVEYOR_03_LANDER MARS_ SURVEYOR_03_ORIBTER_SIM MARS_ SURVEYOR_03_LANDER_SIM	M03O M03L	
PLUTO_EXPRESS	17 PEX	PLUTO_EXPRESS PLUTO_EXPRESS_1_SIM PLUTO_EXPRESS_2 PLUTO_EXPRESS_2_SIM	PX1 PX2	200 201 202 203
DEEP_SPACE_1	9 DS1	DEEP_SPACE_1 DEEP_SPACE_1_SIM	DS1	
DEEP_SPACE_3	12 DS3	DEEP_SPACE_3 DEEP_SPACE_3_SIM	DS3	

Table Notes:

1. Mission and Spacecraft Name values are formal names used in software interfaces, and are constrained by the rules of the CCSDS Parameter Value Langusge (CCSDS standard CCSD0006). In most instances, these values should be interpreted by software without sensitivity to alphabetic case, although by convention, values are normally expressed in all caps.

2. Mission Ids are used exclusively within the MGDS to index parameters and adaptation code common to all spacecraft in amission, and are defined in the NJPL SIS Module. There is also a 24-character limit on spacecraft names used with DSN.

3. Mission Acronyms are frequently used by software to refer to mission configuration information. Values are limited to three characters.

4. No spacecraft acronyms are currently defined for non-spacecraft.

5. Spacecraft IDs are numerical values assigned by the DSN (and CCSDS) as labels for packet telemetry data emitted by the spacecraft. Unique values are generally assigned for separate spacecraft, as well as for unique spacecraft simulateors that can flow telemetry data through parts of the Ground Data System in order to keep this data distinct from that of the real spacecraft.

6. Spacecraft acronyms are not generally used within the MGDS, but are used in the DSN, and occasionally in the Planetary Data System (referred to as spacecraft ID in the PDS).

APPENDIX C. META-DATA DEFINITION OBJECTS

The PDS works with the planetary science community in order to create standardized definitions for data objects and data elements. (All of the data structure objects developed to date appears in the following section, and the element definitions make up the bulk of this document.) The PDS uses two data definition objects to capture information about data objects and data elements.

A filled-out element definition example and object definition example accompany the element definition object and object definition object.

ELEMENT DEFINITION OBJECT

```
/* PDS element definition template - V2.3  1999-07-28 */
/* The following are the responsibility of the element definition provider */

PDS_VERSION_ID                   = PDS3
LABEL_REVISION_NOTE              = <e.g. "1999-07-28 CN:JSH Updated to V2.3">

OBJECT                           = ELEMENT_DEFINITION
  NAME                           = <data element name>
  DESCRIPTION                    = <description>
  GENERAL_DATA_TYPE              = {CHARACTER, INTEGER, ...}
  MAXIMUM                        = <num field max value>
  MINIMUM                        = <num field min value>
  MAXIMUM_LENGTH                 = <char field max length>
  MINIMUM_LENGTH                 = <char field min length>
  STANDARD_VALUE_TYPE            = <STATIC, DYNAMIC, ...>
  STANDARD_VALUE_SET             = {stdval1, stdval2, ...}
  STANDARD_VALUE_SET_DESC        = <standard value desc>
  KEYWORD_DEFAULT_VALUE          = <default std value>
  UNIT_ID                        = <default unit of measure>
  FORMATION_RULE_DESC            = <rule for creation of values>
  SOURCE_NAME                    = <proponent - e.g. "PDS CN/JSH">

/* The following are the responsibility of the PDS standards administrator */

  OBJECT                         = ELEMENT_ALIAS
    ALIAS_NAME                   = <alias name>
    OBJECT_NAME                  = <alias object name>
    USAGE_NOTE                   = <use of data element>
  END_OBJECT                     = ELEMENT_ALIAS

  OBJECT                         = ELEMENT_STANDARD_VALUE
    COLUMN_VALUE                 = <value>
    COLUMN_VALUE_TYPE            = {A -available, or P - possible}
    COLUMN_VALUE_NODE_ID         = <nodes for which available>
    OUTPUT_FLAG                  = <stdval output for hardcopy>
  END_OBJECT                     = ELEMENT_STANDARD_VALUE

  SYSTEM_CLASSIFICATION_ID       = <system index>
  GENERAL_CLASSIFICATION_TYPE    = <subject index>
  CHANGE_DATE                    = <date when record was altered>
  STATUS_TYPE                    = {APPROVED, OBSOLATE, PENDING}
  STANDARD_VALUE_OUTPUT_FLAG     = {Y, N}

  TEXT_FLAG                      = <variable-length text>
  BL_NAME                        = <12-character id for database>
  TERSE_NAME                     = <obsolete? - 12-character id>
  SQL_FORMAT                     = <SQL Format>
  BL_SQL_FORMAT                  = <obsolete - BL Sql format>
  DISPLAY_FORMAT                 = <obsolete - SW display format>
  AVAILABLE_VALUE_TYPE           = <L - literal, X - Examples>
END_OBJECT                       = ELEMENT_DEFINITION
```

ELEMENT DEFINITION EXAMPLE

```
PDS_VERSION_ID                          = PDS3
LABEL_REVISION_NOTE                     = “NULL”

OBJECT                                  = ELEMENT_DEFINITION
  NAME                                  = “data_set_id”
  DESCRIPTION                           = “
The data_set_id element is a unique
alphanumeric identifier for a data set or a data product.
The data_set_id value for a given data set or
product is constructed according to flight project
naming conventions.  In most cases the data_set_id is an
abbreviation of the data_set_name.
Example value: MR9/VO1/VO2-M-ISS/VIS-5-CLOUD-V1.0.
Note:  In the PDS, the values for both data_set_id and
data_set_name are constructed according to standards
outlined in the Standards Reference.”

 GENERAL_DATA_TYPE                      = "CHARACTER"
 MAXIMUM                                = "-1E32"
 MINIMUM                                = "-1E32"
 MAXIMUM_LENGTH                         = "40"
 MINIMUM_LENGTH                         = "-2147483648"
 STANDARD_VALUE_TYPE                    = "FORMATION"
 STANDARD_VALUE_SET_DESC                = ""
 KEYWORD_DEFAULT_VALUE                  = ""
 UNIT_ID                                = "none"
 SOURCE_NAME                            = ""
 FORMATION_RULE_DESC                    = ""

/* The following are the responsibility of the PDS standards administrator */

  OBJECT                                = ELEMENT_ALIAS
    ALIAS_NAME                          = <alias name>
    OBJECT_NAME                         = <alias object name>
    USAGE_NOTE                          = <use of data element>
  END_OBJECT                            = ELEMENT_ALIAS

 OBJECT                                 = ELEMENT_STANDARD_VALUE
  COLUMN_VALUE                          = "A-5-DDR-ASTERMAG-V1.0"
  COLUMN_VALUE_TYPE                     = "A"
  COLUMN_VALUE_NODE_ID                  = "U"
  OUTPUT_FLAG                           = "Y"
 END_OBJECT                             = ELEMENT_STANDARD_VALUE

 OBJECT                                 = ELEMENT_STANDARD_VALUE
  COLUMN_VALUE                          = "A-5-DDR-ASTEROID-SPIN-VECTORS-V3.0"
  COLUMN_VALUE_TYPE                     = "A"
  COLUMN_VALUE_NODE_ID                  = "U"
  OUTPUT_FLAG                           = "Y"
 END_OBJECT                             = ELEMENT_STANDARD_VALUE
```

```
  SYSTEM_CLASSIFICATION_ID          = "COMMON"
  GENERAL_CLASSIFICATION_TYPE       = "DATASET"
  CHANGE_DATE                       = "1992-01-24"
  STATUS_TYPE                       = "APPROVED"
  STANDARD_VALUE_OUTPUT_FLAG        = "Y"
  TEXT_FLAG                         = "N"
  BL_NAME                           = "dsid"
  TERSE_NAME                        = "dsid"
  SQL_FORMAT                        = "CHAR(40)"
  BL_SQL_FORMAT                     = "char(40)"
  DISPLAY_FORMAT                    = "JUSTLEFT"
  AVAILABLE_VALUE_TYPE              = ""
END_OBJECT                          = ELEMENT_DEFINITION
```

OBJECT DEFINITION OBJECT

```
PDS_VERSION_ID                    = PDS3

OBJECT                            = OBJECT_DEFINITION

  NAME                            = <data object name>
  TERSE_NAME                      = <obsolete? - 12-character id>
  STATUS_TYPE                     = {APPROVED, OBSOLETE, PENDING}
  SOURCE_NAME                     = <proponent - e.g. "PDS CN/JSH">
  OBJECT_TYPE                     = <10-char system-specific category id>
  OBJECT_CLASSIFICATION_TYPE      = <15-char classification id>
  DESCRIPTION                     = <description>

  OBJECT                          = OBJECT_ELEMENT
    ELEMENT_NAME                  = <30-char data dictionary name>
    REQUIRED_FLAG                 = {Y, N}
  END_OBJECT                      = OBJECT_ELEMENT
  STATUS_NOTE                     = <log of modification>

END_OBJECT                        = OBJECT_DEFINITION
```

OBJECT DEFINITION EXAMPLE

```
PDS_VERSION_ID                    = PDS3

OBJECT                            = OBJECT_DEFINITION
 NAME                             = "data_set_host"
 TERSE_NAME                       = "dshost"
 STATUS_TYPE                      = "APPROVED"
 SOURCE_NAME                      = "PDS-CN/K.Law"
 OBJECT_TYPE                      = "SPECIFIC"
 OBJECT_CLASSIFICATION_TYPE       = "DATA SET CATALOG"
 DESCRIPTION                      = "

The DATA_SET_HOST catalog object contains the identifier
for each  host/instrument pair associated with a data set."

 OBJECT                           = OBJECT_ELEMENT
  ELEMENT_NAME                    = "instrument_host_id"
  REQUIRED_FLAG                   = "Y"
 END_OBJECT                       = OBJECT_ELEMENT

 OBJECT                           = OBJECT_ELEMENT
  ELEMENT_NAME                    = "instrument_id"
  REQUIRED_FLAG                   = "Y"
 END_OBJECT                       = OBJECT_ELEMENT

 STATUS_NOTE                      = "

V1.0 1993-9-30 SMH  Streamlined catalog templates Approved
and distributed 1993-9-30."

END_OBJECT                        = OBJECT_DEFINITION
END
```

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APPENDIX D. PDS STRUCTURE OBJECTS

The following is a set of data object type definitions reflecting information about objects recently standardized in the PDS. Structure objects outline the format in which the science data appear in PDS labels. Examples of structure objects are table and image.

An explanation of each PDS structure object is included in the PDS Standards Reference. In that document for each object there is text that describes the object, outlines its uses, and illustrates one or more examples.

The following is a partial list of objects. It will grow as existing data object types are reviewed and standardized. They appear here for the information and reference of the data supplier.

□include OBJTEMP.SUB□This subdoc contains the PDS object reports. Include obj,out here and run the TBD macro on it for formatting.

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = ALIAS
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1992-09-24 MAC New Data Object Definition"
  DESCRIPTION                       = "The alias object provides a method of identifying alternate
terms or names for approved data elements or objects within a data system."
  SOURCE_NAME                       = "PDS-CN/M.Cribbs"
  REQUIRED_ELEMENT_SET              = {ALIAS_NAME,
                                       USAGE_NOTE}
  OPTIONAL_ELEMENT_SET              = {OBJECT_NAME,
                                       PSDD}
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = "N/A"
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = ARRAY
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1993-11-24 SMH Optional AXIS_ORDER_TYPE
added and AXIS_START and AXIS_STOP selected for approval; decided at MC splinter held 09-16-93.
V0.2 1993-07-29 SMH Final revisions based on ORC review. Approved 08-11-93 pending decision on axis
ordering options and start/stop axis keywords. V0.1 1993-01-22 ACR Object proposal resulting from
Technical session held 13 Jan 1993."
  DESCRIPTION                       = "The ARRAY object is provided to describe dimensioned
arrays of homogeneous objects. Note that an ARRAY can contain only a single object, which can itself be
another ARRAY or COLLECTION if required.  A maximum of 6 axes is allowed in an ARRAY.  The
optional _AXIS_ elements can be used to describe the variation between successive objects in the ARRAY.
Values for AXIS_ITEMS and _AXIS_ elements for multidimensional arrays are supplied as sequences in
which the rightmost or last item varies the fastest as the default.  The default may be changed to leftmost or
first item varying the fastest by including the optional element AXIS_ORDER_TYPE with a value of
FIRST_INDEX_FASTEST. "
  SOURCE_NAME                       = "PDS-SBN"
  REQUIRED_ELEMENT_SET              = {AXES, AXIS_ITEMS,
                                       NAME}
  OPTIONAL_ELEMENT_SET              = {AXIS_INTERVAL,
                                       AXIS_NAME,
                                       AXIS_ORDER_TYPE,
                                       AXIS_START,
                                       AXIS_STOP,
                                       AXIS_UNIT,
                                       CHECKSUM,
                                       DESCRIPTION,
                                       INTERCHANGE_FORMAT,
                                       PSDD,
                                       START_BYTE}
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = {ARRAY,
                                       BIT_ELEMENT,
                                       COLLECTION,
                                       ELEMENT}
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = BIT_COLUMN
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V2.1 1991-09-30 MDM New Data Object Definition
V2.2 1992-07-06 MAC Updated for revised PSDD"
  DESCRIPTION                       = "The bit_column object identifies a bit string embedded in a
column.  Bit_columns defined within columns are analogous to columns defined within rows. Note: It is
recommended by the Planetary Data System that all new objects should be defined with all fields on byte
boundaries.  This precludes having multiple values strung together in bit strings, as occurs in the
bit_column object. Bit_column is intended for use in describing existing binary data strings, but is not
recommended for use in defining new data objects because it will not be recognized by most general-
purpose software. Additional Note: A bit column cannot contain embedded objects."
  SOURCE_NAME                       = "PDS-CN/M.Martin"
  REQUIRED_ELEMENT_SET              = {BIT_DATA_TYPE,
                                       BITS,
                                       DESCRIPTION,
                                       NAME,
                                       START_BIT}
  OPTIONAL_ELEMENT_SET              = {BIT_MASK,
                                       FORMAT,
                                       INVALID_CONSTANT,
                                       ITEM_BITS,
                                       ITEM_OFFSET,
                                       ITEMS,
                                       MAXIMUM,
                                       MINIMUM,
                                       MISSING_CONSTANT,
                                       OFFSET,
                                       PSDD,
                                       SCALING_FACTOR,
                                       UNIT}
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = "N/A"
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = BIT_ELEMENT
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1996-08-26 KL New Data Object Definition"
  DESCRIPTION                       = "The bit_element object identifies a bit string embedded in a
element.”
  SOURCE_NAME                       = "PDS-CN/M.Martin"
  REQUIRED_ELEMENT_SET              = "N/A"
  OPTIONAL_ELEMENT_SET              = "N/A"
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = "N/A"
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                             = GENERIC_OBJECT_DEFINITION
  NAME                             = CATALOG
  STATUS_TYPE                      = APPROVED
  STATUS_NOTE                      = "V1.0 1992-07-31 SMH New Data Object Definition
V1.1 1992-08-04 GMW Updated description, element and object sets."
  DESCRIPTION                      = "The CATALOG object is used within a VOLUME object
to reference completed PDS high level catalog templates. These provide additional information related to
the data sets on the volume."
  SOURCE_NAME                      = "PDS-CN/S.Hess"
  REQUIRED_ELEMENT_SET             = "N/A"
  OPTIONAL_ELEMENT_SET             = {DATA_SET_ID,
                                      LOGICAL_VOLUME_PATH_NAME,
                                      LOGICAL_VOLUMES,
                                      PSDD}
  REQUIRED_OBJECT_SET              = {DATA_SET,
                                      INSTRUMENT,
                                      INSTRUMENT_HOST,
                                      MISSION,
                                      REFERENCE,
                                      SOFTWARE}
  OPTIONAL_OBJECT_SET              = {DATA_SET_COLLECTION,
                                      PERSONNEL,
                                      PSDD,
                                      TARGET}
  OBJECT_CLASSIFICATION_TYPE       = STRUCTURE
  OBJECT                           = ALIAS
    ALIAS_NAME                     = "N/A"
    USAGE_NOTE                     = "N/A"
  END_OBJECT                       = ALIAS
END_OBJECT                         = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = COLLECTION
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1993-07-29 SMH Final revisions based on ORC
review. Approved 08-11-93. V0.1 1993-01-25 JSH New Data Object Definition"
  DESCRIPTION                       = "The COLLECTION object allows the ordered grouping of
heterogeneous objects into a named collection.  The COLLECTION object may contain a mixture of
different object types including other COLLECTIONS.  The optional START_BYTE data element
provides the starting location relative to an enclosing object. If a START_BYTE is not specified, a value of
1 is assumed."
  SOURCE_NAME                       = "PDS-CN"
  REQUIRED_ELEMENT_SET              = {BYTES, NAME}
  OPTIONAL_ELEMENT_SET              = {CHECKSUM,
                                       DESCRIPTION,
                                       INTERCHANGE_FORMAT,
                                       PSDD,
                                       START_BYTE}
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = {ARRAY,
                                       BIT_ELEMENT,
                                       COLLECTION,
                                       ELEMENT}
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                          = GENERIC_OBJECT_DEFINITION
  NAME                          = COLUMN
  STATUS_TYPE                   = APPROVED
  STATUS_NOTE                   = "V2.1 1991-09-30 MDM New Data Object Definition
V2.2 1992-07-06 MAC Updated for revised PSDD"
  DESCRIPTION                   = "The COLUMN object identifies a single column in a data
object. Note: In the PDS, columns must not contain embedded COLUMN objects."
  SOURCE_NAME                   = "PDS-CN/M.Martin"
  REQUIRED_ELEMENT_SET          = {BYTES, DATA_TYPE, NAME, START_BYTE}
  OPTIONAL_ELEMENT_SET          = {BIT_MASK,
                                   DERIVED_MAXIMUM,
                                   DERIVED_MINIMUM,
                                   DESCRIPTION, FORMAT,
                                   INVALID_CONSTANT,
                                   ITEM_BYTES, ITEM_OFFSET, ITEMS,
                                   MAXIMUM, MAXIMUM_SAMPLING_PARAMETER,
                                   MINIMUM, MINIMUM_SAMPLING_PARAMETER,
                                   MISSING_CONSTANT,
                                   OFFSET, PSDD,
                                   SAMPLING_PARAMETER_INTERVAL,
                                   SAMPLING_PARAMETER_NAME,
                                   SAMPLING_PARAMETER_UNIT,
                                   SCALING_FACTOR,
                                   UNIT,
                                   VALID_MAXIMUM, VALID_MINIMUM}
  REQUIRED_OBJECT_SET           = "N/A"
  OPTIONAL_OBJECT_SET           = {ALIAS, BIT_COLUMN}
  OBJECT_CLASSIFICATION_TYPE    = STRUCTURE
  OBJECT                        = ALIAS
    ALIAS_NAME                  = "N/A"
    USAGE_NOTE                  = "N/A"
  END_OBJECT                    = ALIAS
END_OBJECT                      = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                                = GENERIC_OBJECT_DEFINITION
  NAME                                = CONTAINER
  STATUS_TYPE                         = APPROVED
  STATUS_NOTE                         = "V3.0 1992-06-01 MAC New Data Object Definition"
  DESCRIPTION = "The container object is a method of grouping a set of sub-objects (such as columns)
that repeat within a data objects (such as a table).  Use of the container object allows repeating groups to be
defined within a data structure."
  SOURCE_NAME                         = "PDS-CN"
  REQUIRED_ELEMENT_SET                = {BYTES,
                                         DESCRIPTION,
                                         NAME,
                                         REPETITIONS,
                                         START_BYTE}
  OPTIONAL_ELEMENT_SET                = {PSDD}
  REQUIRED_OBJECT_SET                 = "N/A"
  OPTIONAL_OBJECT_SET                 = {COLUMN,
                                         CONTAINER}
  OBJECT_CLASSIFICATION_TYPE          = STRUCTURE
  OBJECT                              = ALIAS
    ALIAS_NAME                        = "N/A"
    USAGE_NOTE                        = "N/A"
  END_OBJECT                          = ALIAS
END_OBJECT                            = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = DIRECTORY
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1992-08-05 RM New Data Object Definition"
  DESCRIPTION = "The Directory object is used to define a hierarchical file organization on a linear tape
media.  It identifies all directories and subdirectories below the root level (Note: The root directory object
is implicit). Subdirectories are identified by embedding DIRECTORY objects.  Files within the directories
and subdirectories are sequentially identified by using FILE objects with a sequence_number value
corresponding to their position on the tape.  A sequence_number value will be unique for each file on the
tape."
  SOURCE_NAME                       = "PDS-CN/R.Monarrez"
  REQUIRED_ELEMENT_SET              = {NAME}
  OPTIONAL_ELEMENT_SET              = {PSDD,
                                       RECORD_TYPE,
                                       SEQUENCE_NUMBER}
  REQUIRED_OBJECT_SET               = {FILE}
  OPTIONAL_OBJECT_SET               = {DIRECTORY}
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = DOCUMENT
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1992-07-31 AMF New Data Object Definition"
  DESCRIPTION                       = "The DOCUMENT object is used to identify a particular
document provided on a volume to support a data set or data set collection.  A document can be made up of
one or many files in a single format.  Multiple versions of a document can be supplied on a volume with
separate formats, requiring a DOCUMENT object for each document version, i.e., OBJECT =
TEX_DOCUMENT and OBJECT = PS_DOCUMENT when including both the TEX and Postscript
versions of the same document. If the document's INTERCHANGE_FORMAT is BINARY, it is
recommended that the ABSTRACT_TEXT keyword be used for ASCII browsing and text searches."
  SOURCE_NAME                       = "PDS-CN/A.Farny"
  REQUIRED_ELEMENT_SET              = {DOCUMENT_FORMAT,
                                       DOCUMENT_NAME,
                                       DOCUMENT_TOPIC_TYPE,
                                       INTERCHANGE_FORMAT,
                                       PUBLICATION_DATE}
  OPTIONAL_ELEMENT_SET              = {ABSTRACT_TEXT,
                                       DESCRIPTION,
                                       ENCODING_TYPE,
                                       FILES,
                                       PSDD}
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = "N/A"
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT = ALIAS
    ALIAS_NAME = "N/A"
    USAGE_NOTE = "N/A"
  END_OBJECT = ALIAS
END_OBJECT = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = ELEMENT
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1993-07-29 SMH Final revisions based on ORC
review.  Approved 08-11-93. V0.1 1993-02-22 ACR Object proposal
resulting from Technical session held 13 Jan 1993."
  DESCRIPTION                       = "The ELEMENT object provides a means of defining a
lowest level component of a data object that is stored in an integral multiple of 8-bit bytes.  Element objects
may be embedded in COLLECTION and ARRAY data objects.  The optional START_BYTE element
identifies a location relative to the enclosing object.  If not explicitly included, a START_BYTE = 1 is
assumed for the ELEMENT."
  SOURCE_NAME                       = "PDS-SBN"
  REQUIRED_ELEMENT_SET              = {BYTES,
                                       DATA_TYPE,
                                       NAME}
  OPTIONAL_ELEMENT_SET              = {BIT_MASK,
                                       DERIVED_MAXIMUM,
                                       DERIVED_MINIMUM,
                                       DESCRIPTION,
                                       FORMAT,
                                       INVALID_CONSTANT,
                                       MAXIMUM, MINIMUM,
                                       MISSING_CONSTANT,
                                       OFFSET, PSDD,
                                       SCALING_FACTOR,
                                       START_BYTE, UNIT,
                                       VALID_MAXIMUM, VALID_ MINIMUM}
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = "N/A"
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                                = GENERIC_OBJECT_DEFINITION
  NAME                                = FILE
  STATUS_TYPE                         = APPROVED
  STATUS_NOTE                         = "V1.0 1991-07-07 MDM New Data Element Definition
V1.1 1992-07-06 MDD Update for revised PSDD"
  DESCRIPTION                         = "The file object is used to define the format of a file, to
reference external files, and to indicate boundaries between label records and data records in data files with
attached labels. In the PDS, the file object may be used in two ways: 1) As a container, or envelope, for
label files.  All label files contain an implicit file object that starts at the top of the label and ends where the
label ends.  In these cases, the PDS recommends against using the NAME keyword to reference the file
name. 2) As an explicit object, used when a file reference is needed in a label, in which case the optional
file_name data element is used to identify the file being referenced. The keywords in the file object always
describe the file being referenced, not the file in which they are contained, i.e., if used in a detached label
file, they describe the detached data file, not the label file itself. "
  SOURCE_NAME                         = "PDS-CN"
  REQUIRED_ELEMENT_SET                = {FILE_RECORDS,
                                         RECORD_TYPE}
  OPTIONAL_ELEMENT_SET                = {FILE_NAME,
                                         LABEL_RECORDS,
                                         PSDD,
                                         RECORD_BYTES,
                                         SEQUENCE_NUMBER}
  REQUIRED_OBJECT_SET                 = "N/A"
  OPTIONAL_OBJECT_SET                 = "N/A"
  OBJECT_CLASSIFICATION_TYPE          = STRUCTURE
  OBJECT                              = ALIAS
    ALIAS_NAME                        = "N/A"
    USAGE_NOTE                        = "N/A"
  END_OBJECT                          = ALIAS
END_OBJECT                            = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = HEADER
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1992-07-24 SMH New Data Object Definition
V1.1 1992-08-04 GMW Updated description."
  DESCRIPTION                       = "The HEADER object is used to identify and define the
attributes of commonly used header data structures for non-PDS formats such as VICAR or FITS.  These
structures are usually system or software specific and are described in detail in a referenced description text
file. The use of bytes within the header object refers to the number of bytes for the entire header, not a
single record."
  SOURCE_NAME                       = "PDS-CN"
  REQUIRED_ELEMENT_SET              = {BYTES,
                                       HEADER_TYPE}
  OPTIONAL_ELEMENT_SET              = {DESCRIPTION,
                                       INTERCHANGE_FORMAT,
                                       PSDD,
                                       RECORDS}
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = "N/A"
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = HISTOGRAM
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1991-07-07 MDM New Data Object Definition
V1.1 1002-06-12 JSH Reviewed Data Object"
  DESCRIPTION                       = "The histogram object is a sequence of numeric values that
provides the number of occurrences of a data value or a range of data values in a data object.  The number
of items in a histogram will normally be equal to the number of distinct values allowed in a field of the data
object. (For example, an 8-bit integer field can have 256 values. This would result in a 256-item
histogram.)  Histograms may be used to bin data, in which case an offset and scaling factor indicate the
dynamic range of the data represented. The following equation allows the calculation of the range of each
'bin' in the histogram. 'bin lower boundary' = ('bin element' * scaling_factor) + offset. "
  SOURCE_NAME                       = "PDS-CN"
  REQUIRED_ELEMENT_SET              = {DATA_TYPE,
                                       ITEM_BYTES,
                                       ITEMS}
  OPTIONAL_ELEMENT_SET              = {BYTES,
                                       INTERCHANGE_FORMAT,
                                       OFFSET,
                                       PSDD,
                                       SCALING_FACTOR}
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = "N/A"
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = IMAGE
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V2.1 1991-01-20 MDM New Data Object Definition"
  DESCRIPTION                       = "An image object is a regular array of sample values. Image
objects are normally processed with special display tools to produce a visual representation of the sample
values.  This is done by assigning brightness levels or display colors to the various sample values.  Images
are composed of LINES and SAMPLES.  They may contain multiple bands, in one of several storage
orders. Note: Additional engineering values may be prepended or appended to each LINE of an image, and
are stored as concatenated TABLE objects, which must be named LINE_PREFIX and LINE_SUFFIX.
IMAGE objects may be associated with other objects, including HISTOGRAMs, PALETTEs, HISTORY,
and TABLEs which contain statistics, display parameters, engineering values, or other ancillary data."
  SOURCE_NAME                       = "PDS-CN/M.Martin"
  REQUIRED_ELEMENT_SET              = {LINE_SAMPLES,
                                       LINES,
                                       SAMPLE_BITS,
                                       SAMPLE_TYPE}
  OPTIONAL_ELEMENT_SET              = {BAND_SEQUENCE,
                                       BAND_STORAGE_TYPE,
                                       BANDS,
                                       CHECKSUM,
                                       DERIVED_MAXIMUM,
                                       DERIVED_MINIMUM,
                                       DESCRIPTION,
                                       ENCODING_TYPE,
                                       FIRST_LINE,
                                       FIRST_LINE_SAMPLE,
                                       INVALID_CONSTANT,
                                       LINE_PREFIX_BYTES,
                                       LINE_SUFFIX_BYTES,
                                       MISSING_CONSTANT,
                                       OFFSET, PSDD,
                                       SAMPLE_BIT_MASK,
                                       SAMPLING_FACTOR,
                                       SCALING_FACTOR,
                                       SOURCE_FILE_NAME,
                                       SOURCE_LINE_SAMPLES,
                                       SOURCE_LINES,
                                       SOURCE_SAMPLE_BITS,
                                       STRETCH_MAXIMUM,
                                       STRETCH_MINIMUM,
                                       STRETCHED_FLAG}
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = "N/A"
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = IMAGE_STRUCTURE
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
 NAME                               = INDEX_TABLE
 STATUS_TYPE                        = APPROVED
 STATUS_NOTE                        = "V1.0 1994-11-23 TMA Index_table proposal accepted"
 DESCRIPTION                        = "The INDEX_TABLE object is a specific type of TABLE
object that provides information about the data stored on an archive volume.  The INDEX table contains
one row for each data file (or data product label file in the case where detached labels are used) on the
volume.  The table is formatted so that it may be read directly by many data management systems on
various host computers.  All fields (columns) are separated by commas, and character filesd are enclosed
by double quotation marks.  Each record ends in a carriage return/line feed sequence.  This allows the table
to be treated as a fixed length record file on hosts that support this file type, and as a normal text file on
other hosts.  It is recommended that RECORD_BYTES and ROW_BYTES be even numbers to simplify
ingestion of these files on systems where byte-level parsing is either difficult or impossible.  There are two
categories of columns for an Index table:  Identification and Search.  PDS data element names should be
used as column names wherever appropriate. The required columns are used for identification.  The
optional columns are data dependent and are used for search.  For example, the following may be useful for
searching:   LOCATION (e.g., LATITUDE, LONGITUDE, ORBIT_NUMBER) TIME (e.g.,
START_TIME, SPACECRAFT_CLOCK_START_COUNT) FEATURE (e.g., FEATURE_TYPE)
OBSERVATIONAL CHARACTERISTICS (e.g., INCIDENCE_ANGLE) INSTRUMENT
CHARACTERISTICS (e.g., FILTER_NAMES)   For archive volumes created before this standard was
approved:   1) If the keyword INDEX_TYPE is not present, the value defaults to SINGLE unless the
Index's filename is given as CUMINDEX.TAB. 2) If the keyword INDEXED_FILE_NAME is not present,
the value defaults to '*.*' indicating that the index encompasses all files on the volume.   The required
COLUMN objects must be named (NAME=):   FILE_SPECIFICATION_NAME OR PATH_NAME and
FILE_NAME PRODUCT_ID (**) VOLUME_ID (*) DATA_SET_ID (*) PRODUCT_CREATION_TIME
(*) LOGICAL_VOLUME_PATH_NAME (must be used with PATH_NAME and FILE_NAME for a
logical volume) (*) (*) If the value is constant across the data in the index table, this keyword can appear as
a keyword inside the INDEX_TABLE object.  If the value is not constant, then a column of the given name
must be used. (**) PRODUCT_ID is not required if it has the same value as FILE_NAME or
FILE_SPECIFICATION_NAME.   Required keywords for required COLUMN Objects:   NAME
DATA_TYPE START_BYTE BYTES DESCRIPTION   Optional keywords for required COLUMN
Objects:   UNKNOWN_CONSTANT NOT_APPLICABLE_CONSTANT NULL_CONSTANT    Optional
COLUMN Objects (NAME=):   MISSION_NAME INSTRUMENT_NAME (or ID)
INSTRUMENT_HOST_NAME (or ID) TARGET_NAME PRODUCT_TYPE MISSION_PHASE_NAME
VOLUME_SET_ID START_TIME STOP_TIME SPACECRAFT_CLOCK_START_COUNT
SPACECRAFT_CLOCK_STOP_COUNT any other search columns”
 SOURCE_NAME                        = "PDS-CN"
 REQUIRED_ELEMENT_SET               = {COLUMNS,
                                       INDEX_TYPE,
                                       INTERCHANGE_FORMAT,
                                       ROW_BYTES
                                       ROWS}
 OPTIONAL_ELEMENT_SET               = {DESCRIPTION,
                                       INDEXED_FILE_NAME,
                                       NAME,
                                       NOT_APPLICABLE_CONSTANT,
                                       UNKNOWN_CONSTANT}
 REQUIRED_OBJECT_SET                = {COLUMN}
 OPTIONAL_OBJECT_SET                = "N/A"
 OBJECT_CLASSIFICATION_TYPE         = STRUCTURE
 OBJECT                             = ALIAS
  ALIAS_NAME                        = "N/A"
```

```
   USAGE_NOTE                    = "N/A"
  END_OBJECT                     = ALIAS
END_OBJECT                       = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = PALETTE
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1992-08-04 GMW New Data Object Definition
V1.1 1992-08-11 GWM Updated per ORC Review."
  DESCRIPTION                       = "The PALETTE object is a sub-class of the table object.  It
contains entries which represents color assignments for SAMPLE values contained in an IMAGE. If the
palette is stored in an external file from the  data file, then it should be stored in ASCII format as 256
ROWS, each composed of 4 COLUMNS.  The first column contains the SAMPLE value (0 to 255 for an 8-
bit SAMPLE), and the remaining 3 COLUMNS contain the relative amount (a value from 0 to 255) of each
primary color to be assigned for that SAMPLE value. If the palette is stored in the data file, then it should
be stored in BINARY format as 256 consecutive 8-bit values for each primary color (RED, GREEN,
BLUE) resulting in a 768 byte record."
  SOURCE_NAME                       = "PDS-CN/G.M.Woodward"
  REQUIRED_ELEMENT_SET              = {COLUMNS,
                                       INTERCHANGE_FORMAT,
                                       ROW_BYTES,
                                       ROWS}
  OPTIONAL_ELEMENT_SET              = {DESCRIPTION,
                                       NAME,
                                       PSDD}
  REQUIRED_OBJECT_SET               = {COLUMN}
  OPTIONAL_OBJECT_SET               = "N/A"
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                          = GENERIC_OBJECT_DEFINITION
  NAME                          = QUBE
  STATUS_TYPE                   = APPROVED
  STATUS_NOTE                   = "V0.5 1992-08-12 R. Mehlman New Data Object Definition
V1.0 1992-08-17 R.Monarrez Edited for DPW"
  DESCRIPTION                   = "The QUBE object is a multidimensional array (called the
core) of sample values in multiple dimensions. QUBEs of one to three dimensions can support optional
suffix areas in each axis. A specialization of the QUBE object is the ISIS (Integrated Software for Imaging
Spectrometers) Standard Qube, which is a three-dimensional QUBE with two spatial dimensions and one
spectral dimension.  Its axes have the interpretations 'sample', 'line and 'band'.  Three physical storage
orders are allowed: band-sequential, line_interleaved (band-interleaved-by-line) and sample_interleaved
(band-interleaved-by-pixel). An example of a Standard ISIS Qube is a spectral image qube containing data
from an imaging spectrometer. Such a qube is simultaneously a set of images (at different wavelengths) of
the same target area, and a set of spectra at each point of the target area. Typically, suffix areas in such a
qube are confined to 'backplanes' containing geometric or quality information about individual spectra, i.e.
about the set of corresponding values at the same pixel location in each band. NOTE: The following
required and optional elements of the Qube object are ISIS-specific.  Since the ISIS system was designed
before the current version of the PDS Data Dictionary, some of the element names conflict with current
PDS nomenclature standards. NOTE:  In a Generalized ISIS Qube, the axis names are arbitrary, but in a
Standard ISIS Qube, the standard value set applies. "
  SOURCE_NAME                   = "Galileo/NIMS"
  REQUIRED_ELEMENT_SET          = {AXES,
                                   AXIS_NAME,
                                   CORE_BASE,
                                   CORE_HIGH_INSTR_SATURATION,
                                   CORE_HIGH_REPR_SATURATION,
                                   CORE_ITEM_BYTES,
                                   CORE_ITEM_TYPE,
                                   CORE_ITEMS,
                                   CORE_LOW_INSTR_SATURATION,
                                   CORE_LOW_REPR_SATURATION,
                                   CORE_MULTIPLIER,
                                   CORE_NULL,
                                   CORE_VALID_MINIMUM,
                                   SUFFIX_BYTES,
                                   SUFFIX_ITEMS}
  OPTIONAL_ELEMENT_SET          = {BAND_BIN_CENTER,
                                   BAND_BIN_DETECTOR,
                                   BAND_BIN_GRATING_POSITION,
                                   BAND_BIN_ORIGINAL_BAND,
                                   BAND_BIN_STANDARD_DEVIATION,
                                   BAND_BIN_UNIT,
                                   BAND_BIN_WIDTH,
                                   CORE_NAME,
                                   CORE_UNIT,
                                   PSDD,
                                   SUFFIX_BASE,
                                   SUFFIX_HIGH_INSTR_SAT,
                                   SUFFIX_HIGH_REPR_SAT,
                                   SUFFIX_ITEM_BYTES,
                                   SUFFIX_ITEM_TYPE,
                                   SUFFIX_LOW_INSTR_SAT,
```

```
                                    SUFFIX_LOW_REPR_SAT,
                                    SUFFIX_MULTIPLIER,
                                    SUFFIX_NAME,
                                    SUFFIX_NULL,
                                    SUFFIX_UNIT,
                                    SUFFIX_VALID_MINIMUM}
  REQUIRED_OBJECT_SET              = "N/A"
  OPTIONAL_OBJECT_SET              = "N/A"
  OBJECT_CLASSIFICATION_TYPE       = STRUCTURE
  OBJECT                           = ALIAS
    ALIAS_NAME                     = CUBE
    USAGE_NOTE                     = "N/A"
  END_OBJECT                       = ALIAS
END_OBJECT                         = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                               = GENERIC_OBJECT_DEFINITION
  NAME                               = SERIES
  STATUS_TYPE                        = APPROVED
  STATUS_NOTE                        = "V1.0 1991-09-12 GMW New Data Object Definition
V2.0 1992-07-06 SMH Updated per ORC discussions"
  DESCRIPTION                        = "The series object is a sub-class of the table object.  It is
used for storing a sequence of measurements organized in a specific way (e.g., ascending time, radial
distances). The current version uses the same physical format specification as the table object, but includes
sampling parameter information that describes the variation between elements in the series. The sampling
parameter keywords are required for the series object, and may be optional for one or more column sub-
objects, depending on the data organization."
  SOURCE_NAME                        = "PDS-CN"
  REQUIRED_ELEMENT_SET               = {COLUMNS,
                                        INTERCHANGE_FORMAT,
                                        ROW_BYTES, ROWS,
                                        SAMPLING_PARAMETER_INTERVAL,
                                        SAMPLING_PARAMETER_NAME,
                                        SAMPLING_PARAMETER_UNIT}
  OPTIONAL_ELEMENT_SET               = {DERIVED_MAXIMUM,
                                        DERIVED_MINIMUM,
                                        DESCRIPTION,
                                        MAXIMUM_SAMPLING_PARAMETER,
                                        MINIMUM_SAMPLING_PARAMETER,
                                        NAME, PSDD,
                                        ROW_PREFIX_BYTES,
                                        ROW_SUFFIX_BYTES}
  REQUIRED_OBJECT_SET                = {COLUMN}
  OPTIONAL_OBJECT_SET                = {CONTAINER}
  OBJECT_CLASSIFICATION_TYPE         = STRUCTURE
  OBJECT                             = ALIAS
    ALIAS_NAME                       = "N/A"
    USAGE_NOTE                       = "N/A"
  END_OBJECT                         = ALIAS
END_OBJECT                           = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = SPECTRUM
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1992-07-06 SMH New Data Object Definition"
  DESCRIPTION                       = "The spectrum object is a form of table used for storing
spectral measurements.  The spectrum is assumed to have a number of measurements of the observation
target taken in different spectral bands.  It uses the same physical format specification as the table object,
but includes sampling parameter information which indicates the spectral region measured in successive
columns or rows.  The common sampling parameters for spectrum objects are wavelength, frequency, and
velocity."
  SOURCE_NAME                       = "PDS-CN/S.Hess"
  REQUIRED_ELEMENT_SET              = {COLUMNS,
                                       INTERCHANGE_FORMAT,
                                       ROW_BYTES,
                                       ROWS}
  OPTIONAL_ELEMENT_SET              = {DERIVED_MAXIMUM,
                                       DERIVED_MINIMUM,
                                       DESCRIPTION,
                                       MAXIMUM_SAMPLING_PARAMETER,
                                       MINIMUM_SAMPLING_PARAMETER,
                                       NAME,
                                       PSDD,
                                       ROW_PREFIX_BYTES,
                                       ROW_SUFFIX_BYTES,
                                       SAMPLING_PARAMETER_INTERVAL,
                                       SAMPLING_PARAMETER_NAME,
                                       SAMPLING_PARAMETER_UNIT}
  REQUIRED_OBJECT_SET               = {COLUMN}
  OPTIONAL_OBJECT_SET               = {CONTAINER}
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = SPICE_KERNEL
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1992-02-12 CHA New Data Object Definition"
  DESCRIPTION                       = "The spice kernel object defines a single kernel from a
collection of SPICE kernels.  SPICE kernels provide ancillary data needed to support the planning and
subsequent analysis of space science observations. The SPICE system includes the software and
documentation required to read the SPICE kernels and use the data contained therein to help plan
observations or interpret space science data.  This software and associated documentation are collectively
called the NAIF Toolkit. Kernel files are the major components of the SPICE system. The EPHEMERIS
kernel type (SPK) contains spacecraft and planet, satellite or other target body ephemeris data that provide
position and velocity of a spacecraft as a function of time.  The TARGET_CONSTANTS kernel type
(PCK) contains planet, satellite, comet or asteroid cartographic constants for that object.  The
INSTRUMENT kernel type (IK) contains a collection of science instrument information, including
specification of the mounting alignment, internal timing, and other information needed to interpret
measurements made with the instrument.  The POINTING kernel type (CK) contains pointing data (e.g.,
the inertially referenced attitude for a spacecraft structure upon which instruments are mounted, given as a
function of time). The EVENTS kernel type (EK) contains event information (e.g., spacecraft and
instrument commands, ground data system event logs, and experimenter's notebook comments). The
LEAPSECONDS kernel type (LSK) contains an account of the leapseconds needed to correlate civil time
(UTC or GMT) with ephemeris time (TDB).  This is the measure of time used in the SP kernel files.  The
SPACECRAFT CLOCK COEFFICIENTS kernel type (CLK) contains the data needed to correlate a
spacecraft clock with ephemeris time. "
  SOURCE_NAME                       = "PDS-NAIF/C.Acton"
  REQUIRED_ELEMENT_SET              = {DESCRIPTION,
                                       INTERCHANGE_FORMAT,
                                       KERNEL_TYPE}
  OPTIONAL_ELEMENT_SET              = {PSDD}
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = "N/A"
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = TABLE
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V2.1 1991-09-30 MDM New Data Object Definition
V2.2 1992-07-06 MAC Updated for revised PSDD"
  DESCRIPTION                       = "The TABLE object is a uniform collection of rows
containing ASCII and/or binary values stored in columns. Note: In the PDS, if any of the columns in a table
are in binary format, the value of the keyword interchange_format is BINARY and the value of record_type
is FIXED_LENGTH. On the other hand, if the columns contain only ASCII data, interchange_format =
ASCII and record_type can equal STREAM, VARIABLE_LENGTH, or FIXED_LENGTH. "
  SOURCE_NAME                       = "PDS-CN/M.Martin"
  REQUIRED_ELEMENT_SET              = {COLUMNS,
                                       INTERCHANGE_FORMAT,
                                       ROW_BYTES,
                                       ROWS}
  OPTIONAL_ELEMENT_SET              = {DESCRIPTION,
                                       NAME,
                                       PSDD,
                                       ROW_PREFIX_BYTES,
                                       ROW_SUFFIX_BYTES,
                                       TABLE_STORAGE_TYPE}
  REQUIRED_OBJECT_SET               = {COLUMN}
  OPTIONAL_OBJECT_SET               = {CONTAINER}
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = TABLE_STRUCTURE
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
  NAME                              = TEXT
  STATUS_TYPE                       = APPROVED
  STATUS_NOTE                       = "V1.0 1992-07-01 RM New Data Object Definition"
  DESCRIPTION                       = "The TEXT object provides general description of a file of
plain text.  It is recommended that text objects contain no special formatting characters, with the exception
of the carriage return/line feed sequence and the page break.  It or Unix line terminators will cause text to
be unreadable on other host computers.  Tabs are discouraged, since they are interpreted differently by
different applications. To ensure ease of display by many text processors, it is recommended that text lines
be limited to 70 characters."
  SOURCE_NAME                       = "NULL"
  REQUIRED_ELEMENT_SET              = {NOTE,
                                       PUBLICATION_DATE}
  OPTIONAL_ELEMENT_SET              = {INTERCHANGE_FORMAT,
                                       PSDD}
  REQUIRED_OBJECT_SET               = "N/A"
  OPTIONAL_OBJECT_SET               = "N/A"
  OBJECT_CLASSIFICATION_TYPE        = STRUCTURE
  OBJECT                            = ALIAS
    ALIAS_NAME                      = "N/A"
    USAGE_NOTE                      = "N/A"
  END_OBJECT                        = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

```
OBJECT                              = GENERIC_OBJECT_DEFINITION
 NAME                               = VOLUME
 STATUS_TYPE                        = APPROVED
 STATUS_NOTE                        = "V2.0 1992-08-05 MDM New Data Object Definition"
 DESCRIPTION                        = "The volume object describes a physical unit used to store or
distribute data products (e.g. a magnetic tape, CD_ROM disk, On-Line Magnetic disk or floppy disk)
which contains directories and files.  The directories and files may include documentation, software,
calibration and geometry information as well as the actual science data."
 SOURCE_NAME                        = "PDS-CN"
 REQUIRED_ELEMENT_SET               = {DATA_SET_ID,
                                       DESCRIPTION,
                                       MEDIUM_TYPE,
                                       PUBLICATION_DATE,
                                       VOLUME_FORMAT,
                                       VOLUME_ID,
                                       VOLUME_NAME,
                                       VOLUME_SERIES_NAME,
                                       VOLUME_SET_ID,
                                       VOLUME_SET_NAME,
                                       VOLUME_VERSION_ID,
                                       VOLUMES}
 OPTIONAL_ELEMENT_SET               = {BLOCK_BYTES,
                                       DATA_SET_COLLECTION_ID,
                                       FILES,
                                       HARDWARE_MODEL_ID,
                                       LOGICAL_VOLUME_PATH_NAME,
                                       LOGICAL_VOLUMES,
                                       MEDIUM_FORMAT,
                                       NOTE,
                                       OPERATING_SYSTEM_ID,
                                       PRODUCT_TYPE,
                                       PSDD,
                                       TRANSFER_COMMAND_TEXT,
                                       VOLUME_INSERT_TEXT}
 REQUIRED_OBJECT_SET                = {CATALOG, DATA_PRODUCER}
 OPTIONAL_OBJECT_SET                = {DATA_SUPPLIER, DIRECTORY, FILE}
 OBJECT_CLASSIFICATION_TYPE         = STRUCTURE
 OBJECT                             = ALIAS
  ALIAS_NAME                        = "N/A"
  USAGE_NOTE                        = "N/A"
 END_OBJECT                         = ALIAS
END_OBJECT                          = GENERIC_OBJECT_DEFINITION
END
```

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APPENDIX E. ELEMENT ALIASES

The Planetary Data System maintains a list of aliases in its data dictionary in order to allow older labels using obsolete (or improved) data element names to be verified by more recent software.

The following is a list of those terms that have been replaced by other data element names. Due to the fact that some aliases do not apply in every instance, we also provide applicable information about the context in which an alias applies.

This list appears solely to allow PDS users to track data elements that might have disappeared from the PSDD, and to point those users to the term that is currently valid.

PLEASE USE THE VALID PSDD DATA ELEMENT NAMES FOR PDS LABELS. DO NOT USE ALIASES IN PDS LABELS.

ALIAS NAME	DATA ELEMENT NAME	OBJECT CONTEXT
activity_id	observation_id	event
axis_interval	sampling_parameter_interval	qube
axis_name	sampling_parameter_name	qube
axis_unit	sampling_parameter_unit	qube
base	offset	image
base	offset	bit_column
bytes	row_bytes	table
core_base	offset	qube
core_multiplier	scaling_factor	qube
data_type	bit_data_type	bit_column
directory_name	path_name	file
event_start_time	start_time	event
event_stop_time	stop_time	event
format	interchange_format	table
general_catalog_flag	data_set_catalog_flag	volume
header_bytes	bytes	header
header_records	records	header
image_records	lines	image
index_source_file_name	indexed_file_name	index_table
invalid	invalid_constant	element
item_type	data_type	element
item_type	data_type	histogram
maximum_value	maximum	column
maximum_value	maximum	bit_column
media	medium_type	volume
media_format	volume_format	volume
media_type	medium_type	volume
medium	medium_type	volume
minimum_value	minimum	column
minimum_value	minimum	bit_column
missing	missing_constant	element
multiplier	scaling_factor	column
multiplier	scaling_factor	bit_column
records	file_records	file
row_columns	columns	table
source_image_id	source_product_id	image

spice_file_name	source_product_id	file
storage_type	table_storage_type	table
table_rows	rows	table
tapes	volumes	volume
type	data_type	column
type	bit_data_type	bit_column
x_axis_first_pixel	line_first_pixel	image_map_projection
x_axis_framelet_offset	horizontal_framelet_offset	image_map_projection
x_axis_last_pixel	line_last_pixel	image_map_projection
x_axis_projection_offset	line_projection_offset	image_map_projection
y_axis_first_pixel	sample_first_pixel	image_map_projection
y_axis_framelet_offset	vertical_framelet_offset	image_map_projection
y_axis_last_pixel	sample_last_pixel	image_map_projection
y_axis_projection_offset	sample_projection_offset	image_map_projection

APPENDIX F. DATA ELEMENT CLASSIFIED LISTINGS

This section provides listings of elements by category to aid users in finding elements appropriate for a particular purpose. Elements found in this list may be further researched using the Index found at the end of this document.

This list is organized alphabetically according to the following classifications:

Bibliographic Data Elements

Data Set Data Elements

Data Structure Elements

Geometry Data Elements

Image Data Elements

Instrument Data Elements

Map Projection Data Elements

Mission/Spacecraft/Earth-Base Data Elements

Parameter Data Elements

Personnel/PDS Discipline Node/Institution Data Elements

Physical Organization/Media Data elements

Plasma Data Elements

Radiometry/Spectroscopy Data Elements

Qube-Related Data Elements

Software Data Elements

Target Data Elements

Time/Event/Observation Data Elements

F.1 Bibliographic Data Elements

AUTHOR_FULL_NAME
DOCUMENT_TOPIC_TYPE
JOURNAL_NAME
PUBLICATION_DATE
REFERENCE_DESC
REFERENCE_KEY_ID
RESEARCH_TOPIC_DESC
RESEARCH_TOPIC_NAME

F.2 Data Set Data Elements

BROWSE_FLAG
CONFIDENCE_LEVEL_NOTE
DATA_OBJECT_TYPE
DATA_RECORDS
DATA_SET_COLLECTION_DESC
DATA_SET_COLLECTION_ID
DATA_SET_COLLECTION_MEMBER_FLG
DATA_SET_COLLECTION_NAME
DATA_SET_COLLECTION_RELEASE_DT
DATA_SET_COLLECTION_USAGE_DESC
DATA_SET_DESC
DATA_SET_ID
DATA_SET_LOCAL_ID
DATA_SET_NAME
DATA_SET_OR_INST_PARM_DESC
DATA_SET_OR_INSTRUMENT_PARM_NM
DATA_SET_PARAMETER_NAME
DATA_SET_PARAMETER_UNIT
DATA_SET_RELEASE_DATE
DATA_SETS
DETAILED_CATALOG_FLAG
FIRST_PRODUCT_ID
GENERAL_CATALOG_FLAG
IRAS_HCON
LAST_PRODUCT_ID
MAXIMUM_SAMPLING_PARAMETER
MEASUREMENT_ATMOSPHERE_DESC
MEASUREMENT_SOURCE_DESC
MEASUREMENT_STANDARD_DESC
MEASUREMENT_WAVE_CALBRT_DESC
MINIMUM_AVAILABLE_SAMPLING_INT
MINIMUM_SAMPLING_PARAMETER
NAME
NATIVE_START_TIME
NATIVE_STOP_TIME
NOISE_LEVEL
ORIGINAL_PRODUCT_ID
PROCESSING_LEVEL_DESC
PROCESSING_LEVEL_ID
PROCESSING_START_TIME
PROCESSING_STOP_TIME
PRODUCT_DATA_SET_ID
PRODUCT_ID
PRODUCT_NAME
REQUIRED_STORAGE_BYTES
RING_OBSERVATION_ID
SAMPLING_FACTOR
SAMPLING_PARAMETER_INTERVAL
SAMPLING_PARAMETER_NAME
SAMPLING_PARAMETER_RESOLUTION
SAMPLING_PARAMETER_UNIT
SFDU_FORMAT_ID
SOURCE_DATA_SET_ID
SOURCE_PRODUCT_ID
USER_PRODUCT_ID

F.3 Data Structure Elements

ABSTRACT_TEXT
AXES
AXIS_ITEMS
AXIS_NAME
BAND_BIN_CENTER
BAND_BIN_DETECTOR
BAND_BIN_GRATING_POSITION
BAND_BIN_ORIGINAL_BAND
BAND_BIN_STANDARD_DEVIATION
BAND_BIN_UNIT
BAND_BIN_WIDTH
BAND_SEQUENCE
BAND_STORAGE_TYPE
BANDS
BIT_DATA_TYPE
BIT_MASK
BITS
BYTES
CHECKSUM
COLUMNS
CORE_BASE
CORE_HIGH_INSTR_SATURATION
CORE_HIGH_REPR_SATURATION
CORE_ITEM_BYTES
CORE_ITEM_TYPE
CORE_ITEMS
CORE_LOW_INSTR_SATURATION
CORE_LOW_REPR_SATURATION
CORE_MULTIPLIER
CORE_NAME
CORE_NULL
CORE_UNIT
CORE_VALID_MINIMUM
DATA_TYPE
DERIVED_MAXIMUM
DERIVED_MINIMUM

DESCRIPTION
DOCUMENT_FORMAT
DOCUMENT_NAME
ENCODING_TYPE
FILE_RECORDS
FIRST_LINE
FIRST_LINE_SAMPLE
FORMAT
HEADER_TYPE
INDEX_TYPE
INDEXED_FILE_NAME
INTERCHANGE_FORMAT
INVALID_CONSTANT
ITEM_BITS
ITEM_BYTES
ITEM_OFFSET
ITEMS
LABEL_RECORDS
LINE_PREFIX_BYTES
LINE_PREFIX_STRUCTURE
LINE_SAMPLES
LINE_SUFFIX_BYTES
LINE_SUFFIX_STRUCTURE
LINES
LOGICAL_VOLUME_PATH_NAME
LOGICAL_VOLUMES
MAXIMUM
MINIMUM
MISSING_CONSTANT
MISSING_SCAN_LINES
NAME
NOT_APPLICABLE_CONSTANT
NULL_CONSTANT
OFFSET
RECORD_BYTES
RECORD_FORMAT
RECORD_TYPE
RECORDS
REPETITIONS
ROW_BYTES
ROW_PREFIX_BYTES
ROW_PREFIX_STRUCTURE
ROW_SUFFIX_BYTES
ROW_SUFFIX_STRUCTURE
ROWS
SAMPLE_BIT_MASK
SAMPLE_BITS
SAMPLE_TYPE
SCALING_FACTOR
SOURCE_FILE_NAME
SOURCE_LINE_SAMPLES
SOURCE_LINES
SOURCE_SAMPLE_BITS
START_BIT
START_BYTE
SUFFIX_BASE
SUFFIX_BYTES
SUFFIX_HIGH_INSTR_SAT
SUFFIX_HIGH_REPR_SAT
SUFFIX_ITEM_BYTES
SUFFIX_ITEM_TYPE
SUFFIX_ITEMS
SUFFIX_LOW_INSTR_SAT
SUFFIX_LOW_REPR_SAT
SUFFIX_MULTIPLIER
SUFFIX_NAME
SUFFIX_NULL
SUFFIX_UNIT
SUFFIX_VALID_MINIMUM
TABLE_STORAGE_TYPE
UNIT
UNKNOWN_CONSTANT
VALID_MAXIMUM
VALID_MINIMUM

F.4 Geometry Data Elements

A_AXIS_RADIUS
AIRMASS
ASCENDING_NODE_LONGITUDE
AZIMUTH
B_AXIS_RADIUS
BODY_POLE_CLOCK_ANGLE
C_AXIS_RADIUS
CELESTIAL_NORTH_CLOCK_ANGLE
CENTER_ELEVATION
CENTER_LATITUDE
CENTER_LONGITUDE
COORDINATE_SYSTEM_CENTER_NAME
COORDINATE_SYSTEM_DESC
COORDINATE_SYSTEM_ID
COORDINATE_SYSTEM_NAME
COORDINATE_SYSTEM_REF_EPOCH
COORDINATE_SYSTEM_TYPE
DECLINATION
EASTERNMOST_LONGITUDE
ELEVATION
EMISSION_ANGLE
EQUATORIAL_RADIUS
FLATTENING
GAIN_NUMBER
INCIDENCE_ANGLE
IRAS_CLOCK_ANGLE
IRAS_CLOCK_ANGLE_RANGE
IRAS_CLOCK_ANGLE_RATE
IRAS_CLOCK_ANGLE_RATE_SIGMA
KERNEL_TYPE

LATITUDE
LIGHT_SOURCE_DISTANCE
LIMB_ANGLE
LOCAL_HOUR_ANGLE
LONGITUDE
MAXIMUM_EMISSION_ANGLE
MAXIMUM_INCIDENCE_ANGLE
MAXIMUM_LATITUDE
MAXIMUM_LONGITUDE
MAXIMUM_PHASE_ANGLE
MEAN_SOLAR_DAY
MIDNIGHT_LONGITUDE
MINIMUM_EMISSION_ANGLE
MINIMUM_INCIDENCE_ANGLE
MINIMUM_LATITUDE
MINIMUM_LONGITUDE
MINIMUM_PHASE_ANGLE
NAIF_DATA_SET_ID
NORTH_AZIMUTH
NORTH_AZIMUTH_CLOCK_ANGLE
OBLIQUITY
OFFSET_NUMBER
ORBIT_DIRECTION
ORBIT_NUMBER
ORBITAL_ECCENTRICITY
ORBITAL_INCLINATION
ORBITAL_SEMIMAJOR_AXIS
PERIAPSIS_ARGUMENT_ANGLE
PERIAPSIS_LATITUDE
PERIAPSIS_LONGITUDE
PHASE_ANGLE
PLANET_DAY_NUMBER
POLE_DECLINATION
POLE_RIGHT_ASCENSION
POSITIVE_LONGITUDE_DIRECTION
REFERENCE_LATITUDE
REFERENCE_LONGITUDE
RETICLE_POINT_DECLINATION
RETICLE_POINT_RA
REVOLUTION_NUMBER
REVOLUTION_PERIOD
RIGHT_ASCENSION
ROTATION_DIRECTION
SC_SUN_POSITION_VECTOR
SC_SUN_VELOCITY_VECTOR
SC_TARGET_POSITION_VECTOR
SC_TARGET_VELOCITY_VECTOR
SCAN_RATE
SIDEREAL_ROTATION_PERIOD
SLANT_DISTANCE
SOLAR_DISTANCE
SOLAR_ELONGATION
SOLAR_ELONGATION_SIGMA
SOLAR_LATITUDE
SOLAR_LONGITUDE
SPACECRAFT_ALTITUDE
SPACECRAFT_SOLAR_DISTANCE
START_AZIMUTH
START_ORBIT_NUMBER
START_RESCAN_NUMBER
STOP_AZIMUTH
STOP_ORBIT_NUMBER
SUB_LIGHT_SOURCE_AZIMUTH
SUB_SOLAR_AZIMUTH
SUB_SOLAR_LATITUDE
SUB_SOLAR_LONGITUDE
SUB_SPACECRAFT_AZIMUTH
SUB_SPACECRAFT_LATITUDE
SUB_SPACECRAFT_LONGITUDE
SYNODIC_ROTATION_PERIOD
TIME_FROM_CLOSEST_APPROACH
TOTAL_RESCAN_NUMBER
TRUE_ANOMALY_ANGLE
VECTOR_COMPONENT_1
VECTOR_COMPONENT_2
VECTOR_COMPONENT_3
VECTOR_COMPONENT_ID
VECTOR_COMPONENT_ID_1
VECTOR_COMPONENT_ID_2
VECTOR_COMPONENT_ID_3
VECTOR_COMPONENT_TYPE
VECTOR_COMPONENT_TYPE_DESC
VECTOR_COMPONENT_UNIT
WESTERNMOST_LONGITUDE

F.5 Image Data Elements

AUTO_EXPOSURE_DATA_CUT
AUTO_EXPOSURE_PIXEL_FRACTION
AZIMUTH
AZIMUTH_FOV
BAD_PIXEL_REPLACEMENT_FLAG
BAND_SEQUENCE
BAND_STORAGE_TYPE
BANDS
BLEMISH_FILE_NAME
BLEMISH_PROTECTION_FLAG
BODY_POLE_CLOCK_ANGLE
CELESTIAL_NORTH_CLOCK_ANGLE
CENTER_ELEVATION
CENTER_FILTER_WAVELENGTH
CENTER_RING_RADIUS
CENTRAL_BODY_DISTANCE
CHECKSUM
CMPRS_QUANTZ_TBL_ID
COMPRESSION_TYPE
CONE_ANGLE

CONE_OFFSET_ANGLE
CROSS_CONE_ANGLE
CROSS_CONE_OFFSET_ANGLE
CROSSTRACK_SUMMING
CUT_OUT_WINDOW
DARK_CURRENT_CORRECTION_FLAG
DARK_CURRENT_DOWNLOAD_FLAG
DARK_CURRENT_FILE_NAME
DECLINATION
DESCRIPTION
DETECTOR_ASPECT_RATIO
DETECTOR_DESC
DETECTOR_ID
DETECTOR_PIXEL_HEIGHT
DETECTOR_PIXEL_WIDTH
DETECTOR_TYPE
DOWNTRACK_SUMMING
DUST_FLAG
EDIT_MODE_ID
EDR_FILE_NUMBER
EDR_TAPE_ID
ELECTRONICS_DESC
ELECTRONICS_ID
ELEVATION
ELEVATION_FOV
ELEVATION_MOTOR_CLICKS
EMISSION_ANGLE
ENCODING_COMPRESSION_RATIO
ENCODING_MAX_COMPRESSION_RATIO
ENCODING_MIN_COMPRESSION_RATIO
ENCODING_TYPE
ENTROPY
ERROR_PIXELS
EXPOSURE_COUNT
EXPOSURE_DURATION
EXPOSURE_OFFSET_FLAG
EXPOSURE_OFFSET_NUMBER
EXPOSURE_TYPE
FEATURE_NAME
FEATURE_TYPE
FEATURE_TYPE_DESC
FILTER_NAME
FILTER_NUMBER
FILTER_TYPE
FIRST_LINE
FIRST_LINE_SAMPLE
FLAT_FIELD_CORRECTION_FLAG
FOV_SHAPE_NAME
FOVS
GAIN_NUMBER
HORIZONTAL_FOV
HORIZONTAL_FRAMELET_OFFSET
HORIZONTAL_PIXEL_FOV
HORIZONTAL_PIXEL_SCALE
HUFFMAN_TABLE_TYPE
ICT_DESPIKE_THRESHOLD
ICT_QUANTIZATION_STEP_SIZE
ICT_ZIGZAG_PATTERN
IMAGE_ID
IMAGE_KEY_ID
IMAGE_NUMBER
IMAGE_OBSERVATION_TYPE
IMAGE_TIME
INCIDENCE_ANGLE
INST_CMPRS_BLK_SIZE
INST_CMPRS_BLOCKS
INST_CMPRS_MODE
INST_CMPRS_NAME
INST_CMPRS_PARAM
INST_CMPRS_QUALITY
INST_CMPRS_QUANTZ_TBL_ID
INST_CMPRS_QUANTZ_TYPE
INST_CMPRS_RATE
INST_CMPRS_RATIO
INST_CMPRS_SYNC_BLKS
INTERCEPT_POINT_LATITUDE
INTERCEPT_POINT_LINE
INTERCEPT_POINT_LINE_SAMPLE
INTERCEPT_POINT_LONGITUDE
INVERTED_CLOCK_STATE_FLAG
LATITUDE
LIGHT_FLOOD_STATE_FLAG
LIGHT_SOURCE_INCIDENCE_ANGLE
LIGHT_SOURCE_NAME
LIGHT_SOURCE_PHASE_ANGLE
LINE_DISPLAY_DIRECTION
LINE_EXPOSURE_DURATION
LINE_FIRST_PIXEL
LINE_LAST_PIXEL
LINE_PREFIX_BYTES
LINE_PREFIX_STRUCTURE
LINE_PROJECTION_OFFSET
LINE_SAMPLES
LINE_SUFFIX_BYTES
LINE_SUFFIX_STRUCTURE
LINES
LOCAL_TIME
LONGITUDE
MAP_PROJECTION_ROTATION
MAXIMUM_EMISSION_ANGLE
MAXIMUM_INCIDENCE_ANGLE
MAXIMUM_INSTRUMENT_EXPOSR_DUR
MAXIMUM_LATITUDE
MAXIMUM_LOCAL_TIME
MAXIMUM_LONGITUDE
MAXIMUM_PHASE_ANGLE

MAXIMUM_SLANT_DISTANCE
MAXIMUM_SPECTRAL_CONTRAST
MAXIMUM_WAVELENGTH
MEAN
MEAN_RADIANCE
MEAN_REFLECTANCE
MEAN_TRUNCATED_BITS
MEAN_TRUNCATED_SAMPLES
MINIMUM_EMISSION_ANGLE
MINIMUM_INCIDENCE_ANGLE
MINIMUM_INSTRUMENT_EXPOSR_DUR
MINIMUM_LATITUDE
MINIMUM_LOCAL_TIME
MINIMUM_PHASE_ANGLE
MINIMUM_SLANT_DISTANCE
MINIMUM_SPECTRAL_CONTRAST
MINIMUM_WAVELENGTH
MISSING_SCAN_LINES
MOSAIC_DESC
MOSAIC_IMAGES
MOSAIC_PRODUCTION_PARAMETER
MOSAIC_SEQUENCE_NUMBER
MOSAIC_SERIES_ID
MOSAIC_SHEET_NUMBER
NORTH_AZIMUTH
NORTH_AZIMUTH_CLOCK_ANGLE
NOTE
NTV_SAT_TIME_FROM_CLOSEST_APRH
NTV_TIME_FROM_CLOSEST_APPROACH
OBSERVATION_ID
OBSTRUCTION_ID
OFFSET_NUMBER
ON_CHIP_MOSAIC_FLAG
OPTICS_DESC
PHASE_ANGLE
PIXEL_AVERAGING_HEIGHT
PIXEL_AVERAGING_WIDTH
PLANET_DAY_NUMBER
POLE_DECLINATION
PROCESS_VERSION_ID
PROCESSING_HISTORY_TEXT
PRODUCT_TYPE
RADIANCE_SCALING_FACTOR
REFLECTANCE_SCALING_FACTOR
REGION_DESC
REGION_NAME
RETICLE_POINT_LATITUDE
RETICLE_POINT_LONGITUDE
RETICLE_POINT_NUMBER
RIGHT_ASCENSION
SAMPLE_BIT_MASK
SAMPLE_BITS
SAMPLE_DISPLAY_DIRECTION
SAMPLE_FIRST_PIXEL
SAMPLE_LAST_PIXEL
SAMPLE_PROJECTION_OFFSET
SAMPLE_TYPE
SATELLITE_TIME_FROM_CLST_APR
SCALED_IMAGE_HEIGHT
SCALED_IMAGE_WIDTH
SCALED_PIXEL_HEIGHT
SCALED_PIXEL_WIDTH
SCAN_MODE_ID
SCAN_RATE
SHUTTER_MODE_ID
SHUTTER_OFFSET_FILE_NAME
SLANT_DISTANCE
SLOPE_FILE_NAME
SMEAR_AZIMUTH
SMEAR_MAGNITUDE
SOLAR_DISTANCE
SOLAR_LATITUDE
SOLAR_LONGITUDE
SOURCE_FILE_NAME
SOURCE_LINE_SAMPLES
SOURCE_LINES
SOURCE_SAMPLE_BITS
SPACECRAFT_ALTITUDE
SPACECRAFT_CLOCK_CNT_PARTITION
SPACECRAFT_CLOCK_START_COUNT
SPACECRAFT_CLOCK_STOP_COUNT
SPECTRUM_NUMBER
SPECTRUM_SAMPLES
SPICE_FILE_NAME
SQRT_COMPRESSION_FLAG
SQRT_MAXIMUM_PIXEL
SQRT_MINIMUM_PIXEL
STANDARD_DEVIATION
STAR_WINDOW
STAR_WINDOW_COUNT
START_AZIMUTH
START_RESCAN_NUMBER
START_TIME_FROM_CLOSEST_APRCH
STOP_AZIMUTH
STOP_TIME_FROM_CLOSEST_APRCH
STRETCH_MAXIMUM
STRETCH_MINIMUM
STRETCHED_FLAG
SUB_LIGHT_SOURCE_LATITUDE
SUB_LIGHT_SOURCE_LONGITUDE
SUB_SOLAR_AZIMUTH
SUB_SOLAR_LATITUDE
SUB_SOLAR_LONGITUDE
SUB_SPACECRAFT_AZIMUTH
SUB_SPACECRAFT_LATITUDE
SUB_SPACECRAFT_LINE

SUB_SPACECRAFT_LINE_SAMPLE
SUB_SPACECRAFT_LONGITUDE
SURFACE_CLARITY_PERCENTAGE
TARGET_CENTER_DISTANCE
TELEMETRY_FORMAT_ID
TEMPERATURE_TRANSLATION_DESC
TIME_FROM_CLOSEST_APPROACH
TOTAL_FOVS
TOTAL_RESCAN_NUMBER
TRUE_ANOMALY_ANGLE
TRUTH_WINDOW
TWIST_ANGLE
TWIST_ANGLE_TYPE
UNEVEN_BIT_WEIGHT_CORR_FLAG
VERTICAL_FOV
VERTICAL_FRAMELET_OFFSET
VERTICAL_PIXEL_FOV
VERTICAL_PIXEL_SCALE

F.6 Instrument Data Elements

APERTURE_TYPE
AZIMUTH_MOTOR_CLICKS
BANDWIDTH
BUILD_DATE
CENTER_FILTER_WAVELENGTH
CENTER_FREQUENCY
CONE_ANGLE
CONE_OFFSET_ANGLE
CROSS_CONE_ANGLE
CROSS_CONE_OFFSET_ANGLE
CRYOCOOLER_DURATION
CRYOCOOLER_TEMPERATURE
CYCLE_ID
DATA_PATH_TYPE
DATA_RATE
DATA_SET_OR_INST_PARM_DESC
DATA_SET_OR_INSTRUMENT_PARM_NM
DETECTOR_ASPECT_RATIO
DETECTOR_DESC
DETECTOR_ID
DETECTOR_TEMPERATURE
DETECTOR_TYPE
DETECTORS
DISPERSION_MODE_ID
DOWNLOAD_TYPE
EDIT_MODE_ID
ELECTRONICS_DESC
ELECTRONICS_ID
EXPECTED_PACKETS
EXPOSURE_DURATION
EXPOSURE_OFFSET_FLAG
EXPOSURE_OFFSET_NUMBER
FILTER_NAME
FILTER_NUMBER
FILTER_TYPE
FOCAL_PLANE_TEMPERATURE
FOV_SHAPE_NAME
FOVS
FRAME_DURATION
FRAME_ID
FRAME_SEQUENCE_NUMBER
FRAMES
GAIN_MODE_ID
HORIZONTAL_FOV
HORIZONTAL_PIXEL_FOV
IMPORTANT_INSTRUMENT_PARMS
INSTRUMENT_AZIMUTH_METHOD
INSTRUMENT_CALIBRATION_DESC
INSTRUMENT_DEPLOYMENT_STATE
INSTRUMENT_DESC
INSTRUMENT_ELEVATION_METHOD
INSTRUMENT_HEIGHT
INSTRUMENT_HOST_ID
INSTRUMENT_HOST_NAME
INSTRUMENT_HOST_TYPE
INSTRUMENT_ID
INSTRUMENT_LENGTH
INSTRUMENT_MANUFACTURER_NAME
INSTRUMENT_MASS
INSTRUMENT_MODE_DESC
INSTRUMENT_MODE_ID
INSTRUMENT_MOUNTING_DESC
INSTRUMENT_NAME
INSTRUMENT_PARAMETER_NAME
INSTRUMENT_PARAMETER_RANGES
INSTRUMENT_PARAMETER_UNIT
INSTRUMENT_POWER_CONSUMPTION
INSTRUMENT_SERIAL_NUMBER
INSTRUMENT_TEMPERATURE
INSTRUMENT_TEMPERATURE_COUNT
INSTRUMENT_TYPE
INSTRUMENT_WIDTH
INTENSITY_TRANSFER_FUNCTION_ID
LANDER_SURFACE_QUATERNION
LENS_TEMPERATURE
MAXIMUM_CHANNEL_ID
MAXIMUM_INSTRUMENT_EXPOSR_DUR
MAXIMUM_INSTRUMENT_PARAMETER
MAXIMUM_SAMPLING_PARAMETER
MAXIMUM_WAVELENGTH
MCP_GAIN_MODE_ID
MEASUREMENT_WAVE_CALBRT_DESC
MEDIAN
MINIMUM_AVAILABLE_SAMPLING_INT
MINIMUM_CHANNEL_ID
MINIMUM_INSTRUMENT_EXPOSR_DUR

MINIMUM_INSTRUMENT_PARAMETER
MINIMUM_SAMPLING_PARAMETER
MINIMUM_WAVELENGTH
NOISE_LEVEL
NOMINAL_ENERGY_RESOLUTION
NOMINAL_OPERATING_TEMPERATURE
OFFSET_MODE_ID
OPERATIONAL_CONSID_DESC
OPTICS_DESC
PLATFORM_OR_MOUNTING_DESC
PLATFORM_OR_MOUNTING_NAME
POSITIVE_ELEVATION_DIRECTION
RECEIVED_PACKETS
RICE_OPTION_VALUE
RICE_START_OPTION
SAMPLING_DESC
SAMPLING_FACTOR
SAMPLING_PARAMETER_INTERVAL
SAMPLING_PARAMETER_NAME
SAMPLING_PARAMETER_RESOLUTION
SAMPLING_PARAMETER_UNIT
SCAN_MODE_ID
SCIENTIFIC_OBJECTIVES_SUMMARY
SECTION_ID
SENSITIVITY_DESC
SEQUENCE_TABLE_ID
SHUTTER_EFFECT_CORRECTION_FLAG
SHUTTER_MODE_ID
SLIT_POSITION_ANGLE
SPECTRUM_INTEGRATED_RADIANCE
SPECTRUM_NUMBER
SPECTRUM_SAMPLES
SURFACE_BASED_INST_METHOD
TELESCOPE_DIAMETER
TELESCOPE_F_NUMBER
TELESCOPE_FOCAL_LENGTH
TELESCOPE_ID
TELESCOPE_RESOLUTION
TELESCOPE_SERIAL_NUMBER
TELESCOPE_T_NUMBER
TELESCOPE_T_NUMBER_ERROR
TELESCOPE_TRANSMITTANCE
TEMPERATURE_TRANSLATION_DESC
TOTAL_FOVS
TWIST_OFFSET_ANGLE
VERTICAL_FOV
VERTICAL_PIXEL_FOV

F.7 Map Projection Data Elements

CENTER_LATITUDE
CENTER_LONGITUDE
FIRST_STANDARD_PARALLEL
HORIZONTAL_FRAMELET_OFFSET
LINE_FIRST_PIXEL
LINE_LAST_PIXEL
LINE_PROJECTION_OFFSET
MAP_DESC
MAP_NAME
MAP_NUMBER
MAP_PROJECTION_DESC
MAP_PROJECTION_ROTATION
MAP_PROJECTION_TYPE
MAP_RESOLUTION
MAP_SCALE
MAP_SERIES_ID
MAP_SHEET_NUMBER
MAP_TYPE
POSITIVE_LONGITUDE_DIRECTION
REFERENCE_LATITUDE
REFERENCE_LONGITUDE
ROTATIONAL_ELEMENT_DESC
SAMPLE_FIRST_PIXEL
SAMPLE_LAST_PIXEL
SAMPLE_PROJECTION_OFFSET
SECOND_STANDARD_PARALLEL
VERTICAL_FRAMELET_OFFSET

F.8 Mission/Spacecraft/Earth-Base Data Elements

APPLICATION_PACKET_ID
APPLICATION_PACKET_NAME
COMMAND_DESC
COMMAND_NAME
COMMAND_SEQUENCE_NUMBER
CONE_ANGLE
CONE_OFFSET_ANGLE
CROSS_CONE_ANGLE
CROSS_CONE_OFFSET_ANGLE
DOWNLOAD_ID
EARTH_BASE_DESC
EARTH_BASE_ID
EARTH_BASE_INSTITUTION_NAME
EARTH_BASE_NAME
INSTRUMENT_HOST_DESC
INSTRUMENT_HOST_ID
INSTRUMENT_HOST_NAME
INSTRUMENT_HOST_TYPE
INSTRUMENT_MOUNTING_DESC
LAUNCH_DATE
MISSION_ALIAS_NAME
MISSION_DESC
MISSION_NAME
MISSION_NAME_OR_ALIAS
MISSION_OBJECTIVES_SUMMARY
MISSION_PHASE_DESC
MISSION_PHASE_NAME
MISSION_PHASE_START_TIME

MISSION_PHASE_STOP_TIME
MISSION_PHASE_TYPE
MISSION_START_DATE
MISSION_STOP_DATE
OBSERVATION_NAME
PLATFORM_OR_MOUNTING_DESC
PLATFORM_OR_MOUNTING_NAME
SPACECRAFT_DESC
SPACECRAFT_ID
SPACECRAFT_NAME
SPACECRAFT_OPERATIONS_TYPE
SPACECRAFT_SOLAR_DISTANCE
TLM_CMD_DISCREPANCY_FLAG
TWIST_OFFSET_ANGLE

F.9 Parameter Data Elements
AXIS_INTERVAL
AXIS_ORDER_TYPE
AXIS_START
AXIS_STOP
AXIS_UNIT
DATA_LINES
DATA_SET_OR_INST_PARM_DESC
DATA_SET_OR_INSTRUMENT_PARM_NM
DATA_SET_PARAMETER_NAME
DATA_SET_PARAMETER_UNIT
IMPORTANT_INSTRUMENT_PARMS
INSTRUMENT_PARAMETER_NAME
INSTRUMENT_PARAMETER_UNIT
MAXIMUM_INSTRUMENT_PARAMETER
MAXIMUM_SAMPLING_PARAMETER
MINIMUM_AVAILABLE_SAMPLING_INT
MINIMUM_INSTRUMENT_PARAMETER
MINIMUM_SAMPLING_PARAMETER
SAMPLING_PARAMETER_INTERVAL
SAMPLING_PARAMETER_NAME
SAMPLING_PARAMETER_RESOLUTION
SAMPLING_PARAMETER_UNIT
TARGET_PARAMETER_UNCERTAINTY
TARGET_PARAMETER_VALUE

F.10 Personnel/Institution Data Elements
ALTERNATE_TELEPHONE_NUMBER
AUTHOR_FULL_NAME
COGNIZANT_FULL_NAME
DA_CONTACT_PDS_USER_ID
DEFINING_AUTHORITY_NAME
DISCIPLINE_DESC
DISCIPLINE_NAME
ELECTRONIC_MAIL_ID
ELECTRONIC_MAIL_TYPE
EXPERTISE_AREA_DESC
EXPERTISE_AREA_TYPE
FACILITY_NAME
FAX_NUMBER
FTS_NUMBER
FULL_NAME
INSTITUTION_NAME
LAST_NAME
MAILING_ADDRESS_LINE
NODE_DESC
NODE_ID
NODE_INSTITUTION_NAME
NODE_MANAGER_PDS_USER_ID
NODE_NAME
OBSERVER_FULL_NAME
OPERATIONS_CONTACT_PDS_USER_ID
PDS_ADDRESS_BOOK_FLAG
PDS_AFFILIATION
PERSON_INSTITUTION_NAME
PI_PDS_USER_ID
PREFERENCE_ID
PRODUCER_FULL_NAME
PRODUCER_ID
PRODUCER_INSTITUTION_NAME
ROLE_DESC
SCIENTIST_FUNDING_ID
SPECIALTY_DESC
TASK_NAME
TELEPHONE_NUMBER

F.11 Physical Organization/Media Elements
BLOCK_BYTES
COLUMN_NUMBER
FILES
HARDWARE_MODEL_ID
MEDIUM_FORMAT
MEDIUM_TYPE
OPERATING_SYSTEM_ID
SEQUENCE_NUMBER
TRANSFER_COMMAND_TEXT
VOLUME_FORMAT
VOLUME_ID
VOLUME_INSERT_TEXT
VOLUME_NAME
VOLUME_SERIES_NAME
VOLUME_SET_ID
VOLUME_SET_NAME
VOLUME_SETS
VOLUME_VERSION_ID
VOLUMES

F.12 Plasma Data Elements
ACCEPTANCE_DETECTOR_DESC
ACCEPTANCE_INFORMATION_DESC
CHANNEL_GEOMETRIC_FACTOR

CHANNEL_GROUP_NAME
CHANNEL_ID
CHANNEL_INTEGRATION_DURATION
CHANNELS
CONE_ANGLE
CONE_OFFSET_ANGLE
CONTAMINATION_DESC
CONTAMINATION_ID
CROSS_CONE_ANGLE
CROSS_CONE_OFFSET_ANGLE
CYCLE_ID
DATA_COVERAGE_PERCENTAGE
DATA_QUALITY_DESC
DATA_QUALITY_ID
DETECTOR_GROUP_NAME
DETECTOR_GROUPS
DETECTOR_ID
DETECTOR_TYPE
ELECTRONICS_DESC
ELECTRONICS_ID
FRAME_DURATION
FRAME_ID
FRAME_SEQUENCE_NUMBER
FRAMES
GAIN_MODES
INSTRUMENT_PARAMETER_RANGES
LOCAL_HOUR_ANGLE
MAXIMUM_CHANNEL_ID
MAXIMUM_INSTRUMENT_PARAMETER
MAXIMUM_WAVELENGTH
MINIMUM_AVAILABLE_SAMPLING_INT
MINIMUM_CHANNEL_ID
MINIMUM_INSTRUMENT_PARAMETER
MINIMUM_WAVELENGTH
MODE_CONTINUATION_FLAG
MODE_INTEGRATION_DURATION
NOMINAL_ENERGY_RESOLUTION
PARTICLE_SPECIES_NAME
SAMPLING_DESC
SAMPLING_PARAMETER_INTERVAL
SAMPLING_PARAMETER_NAME
SAMPLING_PARAMETER_RESOLUTION
SAMPLING_PARAMETER_UNIT
SPACECRAFT_OPERATING_MODE_ID
START_TIME_BASE
VECTOR_COMPONENT_1
VECTOR_COMPONENT_2
VECTOR_COMPONENT_3
VECTOR_COMPONENT_ID
VECTOR_COMPONENT_ID_1
VECTOR_COMPONENT_ID_2
VECTOR_COMPONENT_ID_3
VECTOR_COMPONENT_TYPE
VECTOR_COMPONENT_TYPE_DESC
VECTOR_COMPONENT_UNIT

F.13 Radiometry/Spectroscopy Data Elements

BIN_NUMBER
BIN_POINTS
BRIGHTNESS_TEMPERATURE_ID
INCIDENCE_ANGLE
LIMB_ANGLE
MAXIMUM_BRIGHTNESS_TEMPERATURE
MAXIMUM_LIMB_ANGLE
MAXIMUM_SOLAR_BAND_ALBEDO
MAXIMUM_SPECTRAL_CONTRAST
MINIMUM_BRIGHTNESS_TEMPERATURE
MINIMUM_LIMB_ANGLE
MINIMUM_SOLAR_BAND_ALBEDO
MINIMUM_SPECTRAL_CONTRAST
SCALING_FACTOR
SEQUENCE_SAMPLES
SEQUENCE_TITLE
SPECTRUM_INTEGRATED_RADIANCE
SPECTRUM_NUMBER
SPECTRUM_SAMPLES
START_SAMPLE_NUMBER
START_SEQUENCE_NUMBER
STOP_SAMPLE_NUMBER
STOP_SEQUENCE_NUMBER

F.14 Software Data Elements

ALGORITHM_DESC
ALGORITHM_NAME
ALGORITHM_VERSION_ID
ANTECEDENT_SOFTWARE_NAME
ARCHIVE_FILE_NAME
AVAILABILITY_ID
COGNIZANT_FULL_NAME
DATA_FORMAT
DEFINING_AUTHORITY_NAME
EDR_SOFTWARE_NAME
FILE_NAME
FILE_SPECIFICATION_NAME
FORMAT_DESC
FTP_FILE_FORMAT
FTP_SITE_ID
MAXIMUM_PARAMETER
MINIMUM_PARAMETER
PARAMETER_DESC
PLATFORM
PROCESSING_CONTROL_PARM_NAME
PRODUCT_CREATION_TIME
PRODUCT_DATA_SET_ID
PRODUCT_VERSION_ID
PRODUCT_VERSION_TYPE

PROGRAMMING_LANGUAGE_NAME
REQUIRED_MEMORY_BYTES
SFDU_FORMAT_ID
SOFTWARE_DESC
SOFTWARE_FLAG
SOFTWARE_ICON_FILE_SPEC
SOFTWARE_ID
SOFTWARE_LICENSE_TYPE
SOFTWARE_NAME
SOFTWARE_PURPOSE
SOFTWARE_RELEASE_DATE
SOFTWARE_VERSION_ID
SOURCE_DATA_SET_ID
TECHNICAL_SUPPORT_TYPE

F.15 Target Data Elements

BODY_POLE_CLOCK_ANGLE
BOND_ALBEDO
CELESTIAL_NORTH_CLOCK_ANGLE
DATA_SOURCE_DESC
DATA_SOURCE_ID
ELEVATION
FEATURE_NAME
FEATURE_TYPE
FEATURE_TYPE_DESC
LIMB_ANGLE
MAGNETIC_MOMENT
MASS
MASS_DENSITY
MAXIMUM_BRIGHTNESS_TEMPERATURE
MAXIMUM_SLANT_DISTANCE
MAXIMUM_SOLAR_BAND_ALBEDO
MAXIMUM_SPECTRAL_CONTRAST
MAXIMUM_SURFACE_PRESSURE
MAXIMUM_SURFACE_TEMPERATURE
MEAN_ORBITAL_RADIUS
MEAN_RADIUS
MEAN_SOLAR_DAY
MEAN_SURFACE_PRESSURE
MEAN_SURFACE_TEMPERATURE
MINIMUM_BRIGHTNESS_TEMPERATURE
MINIMUM_INCIDENCE_ANGLE
MINIMUM_LATITUDE
MINIMUM_LONGITUDE
MINIMUM_SLANT_DISTANCE
MINIMUM_SOLAR_BAND_ALBEDO
MINIMUM_SPECTRAL_CONTRAST
MINIMUM_SURFACE_PRESSURE
MINIMUM_SURFACE_TEMPERATURE
MOSAIC_DESC
MOSAIC_IMAGES
MOSAIC_PRODUCTION_PARAMETER
MOSAIC_SEQUENCE_NUMBER
MOSAIC_SERIES_ID
MOSAIC_SHEET_NUMBER
OBLIQUITY
ORBIT_DIRECTION
ORBITAL_ECCENTRICITY
ORBITAL_INCLINATION
ORBITAL_SEMIMAJOR_AXIS
PERIAPSIS_ARGUMENT_ANGLE
PLANET_DAY_NUMBER
POLE_RIGHT_ASCENSION
PRIMARY_BODY_NAME
REFERENCE_OBJECT_NAME
REFERENCE_TARGET_NAME
REGION_DESC
REGION_NAME
RETICLE_POINT_NUMBER
REVOLUTION_PERIOD
RING_SYSTEM_SUMMARY
ROTATION_DIRECTION
SCALED_IMAGE_HEIGHT
SCALED_IMAGE_WIDTH
SCALED_PIXEL_HEIGHT
SCALED_PIXEL_WIDTH
SIDEREAL_ROTATION_PERIOD
SLANT_DISTANCE
SOLAR_DISTANCE
SOLAR_LATITUDE
SOLAR_LONGITUDE
SPACECRAFT_ALTITUDE
SURFACE_CLARITY_PERCENTAGE
SURFACE_GRAVITY
SYNODIC_ROTATION_PERIOD
TARGET_CENTER_DISTANCE
TARGET_DESC
TARGET_NAME
TARGET_PARAMETER_EPOCH
TARGET_PARAMETER_NAME
TARGET_PARAMETER_UNCERTAINTY
TARGET_PARAMETER_VALUE
TARGET_TYPE

F.16 Time/Event/Observation Data Elements

COORDINATE_SYSTEM_REF_EPOCH
DATA_SET_COLLECTION_RELEASE_DT
DATA_SET_RELEASE_DATE
EARTH_RECEIVED_TIME
EVENT_NAME
EVENT_START_HOUR
EVENT_TYPE
EVENT_TYPE_DESC
FIRST_IMAGE_TIME
IMAGE_TIME
LAST_IMAGE_TIME

LOCAL_TIME
MAGNETIC_MOMENT
MAXIMUM_LOCAL_TIME
MEAN_SOLAR_DAY
METHOD_DESC
MIDNIGHT_LONGITUDE
MINIMUM_LOCAL_TIME
MISSION_PHASE_START_TIME
MISSION_PHASE_STOP_TIME
MISSION_START_DATE
MISSION_STOP_DATE
NATIVE_START_TIME
NATIVE_STOP_TIME
NOTEBOOK_ENTRY_TIME
OBSERVATION_TIME
OBSERVATION_TYPE
PASS_NUMBER
POSITION_TIME
PROCESSING_START_TIME
PROCESSING_STOP_TIME
PRODUCT_CREATION_TIME
PRODUCT_RELEASE_DATE
PUBLICATION_DATE
RATIONALE_DESC
RING_EVENT_START_TIME
RING_EVENT_STOP_TIME
SOFTWARE_RELEASE_DATE
SPACECRAFT_CLOCK_START_COUNT
SPACECRAFT_CLOCK_STOP_COUNT
START_JULIAN_DATE
START_TIME
START_TIME_FROM_CLOSEST_APRCH
STOP_TIME
STOP_TIME_FROM_CLOSEST_APRCH
TARGET_PARAMETER_EPOCH
TIME_FROM_CLOSEST_APPROACH
UNCORRECTED_START_TIME
UPLOAD_ID

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APPENDIX G. SYSTEM-SPECIFIC CLASSIFIED LISTINGS

This section provides a cross reference of data elements that are unique to particular data systems. Elements in these lists generally describe system-specific data attributes that are not generally applicable to the PDS community, or that have been defined in a given system and not yet assessed for general usage. Elements in these lists can usually be reclassified for general usage through a request to the PDS PSDD administrator. The process of reclassification requires that a new, generalized element definition be approved by the PDS and the originally-defining system.

ISIS Data Elements

JPL-AMMOS-Specific Data Elements

PDS Central Node Data Elements

PDS Geosciences Node Magellan Catalog

PDS Imaging Node Galileo Catalog

PDS Planetary Plasma Node

SPICE Data Elements

G.1 ISIS Data Elements

BAND_BIN_CENTER
BAND_BIN_DETECTOR
BAND_BIN_GRATING_POSITION
BAND_BIN_ORIGINAL_BAND
BAND_BIN_STANDARD_DEVIATION
BAND_BIN_UNIT
BAND_BIN_WIDTH
CORE_BASE
CORE_HIGH_INSTR_SATURATION
CORE_HIGH_REPR_SATURATION
CORE_ITEM_BYTES
CORE_ITEM_TYPE
CORE_ITEMS
CORE_LOW_INSTR_SATURATION
CORE_LOW_REPR_SATURATION
CORE_MULTIPLIER
CORE_NAME
CORE_NULL
CORE_UNIT
CORE_VALID_MINIMUM
SUFFIX_BASE
SUFFIX_BYTES
SUFFIX_HIGH_INSTR_SAT
SUFFIX_HIGH_REPR_SAT
SUFFIX_ITEM_BYTES
SUFFIX_ITEM_TYPE
SUFFIX_ITEMS
SUFFIX_LOW_INSTR_SAT
SUFFIX_LOW_REPR_SAT
SUFFIX_MULTIPLIER
SUFFIX_NAME
SUFFIX_NULL
SUFFIX_UNIT
SUFFIX_VALID_MINIMUM

G.2 JPL-AMMOS-Specific Data Elements

APPLICABLE_START_SCLK
APPLICABLE_START_TIME
APPLICABLE_STOP_SCLK
APPLICABLE_STOP_TIME
CCSDS_SPACECRAFT_NUMBER
DATA_STREAM_TYPE
DECAL_NAME
DSN_SPACECRAFT_NUM
EFFECTIVE_TIME
HOST_ID
JPL_PRESS_RELEASE_ID
MAP_SEQUENCE_NUMBER
MAPPING_START_TIME
MAPPING_STOP_TIME
MISSION_ID
NAV_UNIQUE_ID
ORBIT_START_NUMBER
ORBIT_START_TIME
ORBIT_STOP_NUMBER
ORBIT_STOP_TIME
PROCESS_TIME
SCET_START_TIME
SCET_STOP_TIME
SCLK_START_VALUE
SCLK_STOP_VALUE
SEF_CREATION_TIME
SEQ_ID
SITE_ID
SITE_NAME
SPACECRAFT_ID
TIME_RANGE_NUMBER
VERSION_ID
VERSION_NUMBER

G.3 PDS Central Node Data Elements

AVAILABLE_VALUE_TYPE
BILLING_ADDRESS_LINE
BL_NAME
BL_SQL_FORMAT
CLASSIFICATION_ID
CLUSTERED_KEY
COLUMN_DESCRIPTION
COLUMN_NAME
COLUMN_ORDER
COLUMN_VALUE
COLUMN_VALUE_NODE_ID
COLUMN_VALUE_TYPE
COMMENT_DATE
COMMENT_ID
COMMENT_TEXT
COMMITTEE_MEMBER_FULL_NAME
COMPUTER_VENDOR_NAME
COPIES
CREATE_DATE
CRITICALITY
DATA_SET_ACCEPTANCE_DATE
DATA_SET_CATALOG_FLAG
DATA_SET_COLL_OR_DATA_SET_ID
DATA_SET_TERSE_DESC
DELIMITING_PARAMETER_NAME
DISPLAY_FORMAT
EDIT_ROUTINE_NAME
FORMATION_RULE_DESC
GENERAL_CLASSIFICATION_TYPE
HELP_ID
HELP_NAME
HELP_TEXT

INDEX_TYPE
INDEXED_FILE_NAME
INSTRUMENT_FORMATTED_DESC
INVENTORY_SPECIAL_ORDER_NOTE
KEYWORD_DEFAULT_VALUE
KEYWORD_VALUE_HELP_TEXT
MANDATORY_COLUMN
MAXIMUM_COLUMN_VALUE
MAXIMUM_LENGTH
MEASURED_QUANTITY_NAME
MEDIUM_DESC
MINIMUM_COLUMN_VALUE
MINIMUM_LENGTH
NON_CLUSTERED_KEY
NSSDC_DATA_SET_ID
OBJECT_CLASSIFICATION_TYPE
OBJECT_NAME
OBJECT_TYPE
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ORDER_STATUS
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ORDER_STATUS_DESC
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TEMPLATE_STATUS
TEMPLATE_TYPE
TEMPLATE_USE_INDICATOR
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G.4 PDS Geosciences Node Magellan Catalog

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RAD_FLAG_GROUP
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RAD_FOOTPRINT_LONGITUDE
RAD_FOOTPRINTS
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RAD_PARTIALS_GROUP
RAD_RECEIVER_SYSTEM_TEMP
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G.5 PDS Imaging Node Galileo Catalog

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ICT_QUANTIZATION_STEP_SIZE
ICT_ZIGZAG_PATTERN
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INTERCEPT_POINT_LINE
INTERCEPT_POINT_LINE_SAMPLE
INTERCEPT_POINT_LONGITUDE
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NTV_TIME_FROM_CLOSEST_APPROACH
ON_CHIP_MOSAIC_FLAG
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STAR_WINDOW
STAR_WINDOW_COUNT
TRUTH_WINDOW

G.6 PDS Planetary Plasma Node

DATA_LINES

PASS_NUMBER

G.7 SPICE Data Elements

KERNEL_TYPE

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APPENDIX H. ELEMENT NAME COMPONENT WORDS

COMPONENT TERMS (formal data object)	**TERM TYPE**	**TERSE #1**	**#2**	**#3**
acceptance	descriptor	accept		
acceptance_detector	descriptor	ad		
acceptance_information	descriptor	ai		
accessibility	descriptor	access		
account	descriptor	acct		
address	descriptor	addr		
affiliation	descriptor	affil		
albedo	descriptor	alb		
algorithm	descriptor	alg		
alias	descriptor	alias		
altitude	descriptor	alt		
angle	descriptor	ang		
anomaly	descriptor	anom		
antecedent	descriptor	ant		
approach	descriptor	apr		
area	descriptor	area		
argument	descriptor	arg		
ascending	descriptor	asc		
aspect	descriptor	aspect		
associated	descriptor	assoc		
atmosphere	descriptor	atm		
attribute	descriptor	attr		
author	descriptor	auth		
authority	descriptor	authy		
availability	descriptor	avail	avl	
available	descriptor	avail	avl	
average	descriptor	avg		
axis	descriptor	axis	ax	
azimuth	descriptor	az		
band	descriptor	band	bnd	
bandwidth	descriptor	bandwidth		
base	descriptor	base		
bill	descriptor	bill		
billing	descriptor	bill		
bin	descriptor	bin		
bit	descriptor	bit		
blname	descriptor	blname		
body	descriptor	body		
bond	descriptor	bond		
brief	descriptor	brief	b	
brightness	descriptor	brite		
browse	descriptor	browse		
byte	descriptor	byte		
calibration	descriptor	calbrt	calib	
campaign	descriptor	campaign		
caption	descriptor	capt		
carrier	descriptor	carrier	carr	

catalog	descriptor	cat	
category	descriptor	catgy	
center	descriptor	ctr	
characteristic	descriptor	chr	
channel	descriptor	chnl	
clarity	descriptor	clar	
clock	descriptor	clk	
closest	descriptor	cls	
code	descriptor	code	
cognizant	descriptor	cog	
column	descriptor	col	
comment	descriptor	cmt	
community	descriptor	comty	
component	descriptor	comp	
compromises	descriptor	compromises	
computer	descriptor	cpu	
condition	descriptor	cond	
cone	descriptor	cone	con
confidence	descriptor	conf	
considerations	descriptor	consid	
consumption	descriptor	cnsmp	
contact	descriptor	ctc	
contamination	descriptor	contam	
continuation	descriptor	cont	
contrast	descriptor	contr	
control	descriptor	ctl	
conversion	descriptor	conv	
coordinate	descriptor	crd	
coordinator	descriptor	crd	
cost	descriptor	cost	
count	class	cnt	
coverage	descriptor	cvg	
create	descriptor	create	
criticality	descriptor	critical	
cross	descriptor	crs	
customer	descriptor	cust	
cycle	descriptor	cycle	cyc
data	descriptor	data	
data_administrator	descriptor	da	
data_dictionary	descriptor	dd	
dataset	descriptor	ds	
date	class	date	dt
declination	descriptor	declination	decl
default	descriptor	default	d
efining	descriptor	def	
definition	descriptor	defn	
delimited	descriptor	delim	
delimiting	descriptor	delim	
density	descriptor	density	
derived	descriptor	drv	
description	class	desc	d
detailed	descriptor	detail	
detector	descriptor	det	

diameter	descriptor	diam	
direction	descriptor	dir	
discipline	descriptor	disc	
display	descriptor	dsp	
distance	descriptor	dist	
distribution	descriptor	dstn	
distributor	descriptor	dstr	
document	descriptor	doc	
duration	descriptor	dur	
dynamic	descriptor	dyn	
earth	descriptor	earth	
earth_base	descriptor	eb	
eccentricity	descriptor	ecc	
edit	descriptor	edit	
electronic	descriptor	elec	
electronics	descriptor	elecs	
elevation	descriptor	elevation	
emission	descriptor	emiss	
energy	descriptor	energy	
entry	descriptor	entry	
environment	descriptor	env	
ephemeris	descriptor	eph	
epoch	descriptor	epoch	
equatorial	descriptor	equat	
error	descriptor	err	
event	descriptor	evt	
experimenter	descriptor	exprmtr	
expertise	descriptor	exprt	
exposure	descriptor	expos	
facility	descriptor	fac	
factor	descriptor	fact	
feature	descriptor	feat	
field	descriptor	fld	
filter	descriptor	filt	
first	descriptor	first	
flag	class	flag	flg
flattening	descriptor	flattening	
flood	descriptor	fld	
focal	descriptor	foc	
format	descriptor	fmt	
fov	descriptor	fov	
frame	descriptor	frame	fram
frequency	descriptor	freq	
fts	descriptor	fts	
full	descriptor	full	f
function	descriptor	func	
funding	descriptor	fund	
gain	descriptor	gain	
geometric	descriptor	geom	
granularity	descriptor	gran	
granule	descriptor	gran	
gravity	descriptor	grav	
group	class	grp	

guidance	descriptor	guid	
hardware	descriptor	hw	
height	descriptor	height	ht
help	descriptor	help	
hierarchy	descriptor	hier	
history	descriptor	hist	
home	descriptor	home	
horizontal	descriptor	horz	
host	descriptor	host	
hour	descriptor	hour	
hourly	descriptor	hrly	
identification	class	id	
initial	descriptor	init	
image	descriptor	image	
implementation	descriptor	impl	
important	descriptor	imp	
incidence	descriptor	incid	
inclination	descriptor	incln	
indicator	descriptor	ind	
information	descriptor	info	inf
inner	descriptor	in	
input	descriptor	ipt	
institution	descriptor	instn	
instructions	descriptor	instrc	ins
instrument	descriptor	inst	
integrated	descriptor	intg	
integration	descriptor	intg	
interval	descriptor	iv	
inventory	descriptor	inv	
item	descriptor	itm	
journal	descriptor	journal	
julian	descriptor	jul	
kernel	descriptor	knl	
key	descriptor	key	
keyword	descriptor	kwd	
laboratory	descriptor	lab	
language	descriptor	lang	
last	descriptor	last	
latitude	descriptor	lat	
launch	descriptor	launch	
lecp	descriptor	lecp	lc
length	descriptor	length	len
level	descriptor	lvl	
light	descriptor	lite	
limb	descriptor	limb	
line	descriptor	line	
list	descriptor	list	
load	descriptor	lod	
local	descriptor	local	
location	descriptor	loc	
longitude	descriptor	lon	
mag	descriptor	mag	
magnetic	descriptor	mag	

mail	descriptor	mail	
mailing	descriptor	mail	
major	descriptor	maj	
manager	descriptor	mgr	
mandatory	descriptor	mandatory	
manufacturer	descriptor	mfg	
map	descriptor	map	
mask	class	mask	
mass	descriptor	mass	
maximum	descriptor	max	
mean	descriptor	mean	
measured	descriptor	meas	
measurement	descriptor	meas	
media	descriptor	media	
memory	descriptor	mem	
menu	descriptor	menu	
method	descriptor	method	
middle	descriptor	mid	
midnight	descriptor	midnight	
midsequence	descriptor	midseq	
minimum	descriptor	min	
mission	descriptor	msn	
mode	descriptor	mode	md
model	descriptor	mdl	
moment	descriptor	moment	
mosaic	descriptor	mosaic	
motion	descriptor	motn	
mount	descriptor	mount	mnt
mounting	descriptor	mount	
name	class	name	nm
native	descriptor	native	
navigation	descriptor	nav	
node	descriptor	node	nd
noise	descriptor	noise	
nominal	descriptor	nom	
north	descriptor	north	
note	descriptor	note	nt
notebook	descriptor	note	
number	class	num	
object	descriptor	obj	
objective	descriptor	obj	
objectives	descriptor	obj	
obliquity	descriptor	obliquity	
observation	descriptor	obs	
observatory	descriptor	obsvty	
offset	descriptor	off	
operating	descriptor	oper	
operating_system	descriptor	os	
operation	descriptor	oprtn	
operational	descriptor	oper	
operations	descriptor	oper	
optics	descriptor	optics	optc
orbit	descriptor	orb	

orbital	descriptor	orb	
orbiter	descriptor	orbtr	
order	descriptor	ord	
orientation	descriptor	orient	
outer	descriptor	out	ot
output	descriptor	opt	
page	descriptor	page	
parameter	descriptor	parm	prm
parent	descriptor	parent	
particle	descriptor	part	
particle_multiple_parameters	descriptor	pmp	
password	descriptor	psw	
path	descriptor	path	
peak	descriptor	peak	
peer	descriptor	peer	
percentage	descriptor	pct	
periapsis	descriptor	peri	
period	descriptor	per	
personnel	descriptor	pers	
phase	descriptor	phs	
physical	descriptor	phys	phy
pin	descriptor	pin	
pixel	descriptor	pix	
planet	descriptor	planet	
platform	descriptor	plat	
pls	descriptor	pls	
point	descriptor	point	
pointing	descriptor	pntg	
pole	descriptor	pole	
position	descriptor	position	pos
power	descriptor	pwr	
precession	descriptor	precess	
preference	descriptor	preference	
pressure	descriptor	pres	
primary	descriptor	prim	
prime	descriptor	prime	
principal_investigator	descriptor	pi	
privilege	descriptor	priv	
privileges	descriptor	prv	
process	descriptor	proc	
processing	descriptor	proc	
product	descriptor	prod	
producer	descriptor	prod	
production	descriptor	prd	
profile	descriptor	prof	
programming	descriptor	pgm	
projection	descriptor	proj	
publication	descriptor	publ	
pws	descriptor	pws	
quality	descriptor	qual	
quantity	descriptor	qty	
quantization	descriptor	quantz	quant
query	descriptor	query	qry

quotient	descriptor	q	
radiance	descriptor	rdnc	
radius	descriptor	radius	radi
range	descriptor	rng	
rate	descriptor	rate	
ratio	class	rto	
rationale	descriptor	ratl	
received	descriptor	rcvd	
record	descriptor	rec	
reference	descriptor	ref	
reflected	descriptor	rel	
region	descriptor	region	
registration	descriptor	reg	
related	descriptor	rel	
release	descriptor	release	
remote	descriptor	rem	
request	descriptor	request	rqst
required	descriptor	req	
requirement	descriptor	req	
research	descriptor	rsch	
resolution	descriptor	res	
resonance	descriptor	reson	
responsibility	descriptor	resp	
result	descriptor	rslt	
reticle	descriptor	ret	
review	descriptor	revw	
revolution	descriptor	rev	
right_ascension	descriptor	ra	
ring	descriptor	ring	
role	descriptor	role	
rotation	descriptor	rot	
routine	descriptor	rtn	
row	descriptor	row	
sample	descriptor	samp	
sampling	descriptor	samp	
satellite	descriptor	sat	
scale	descriptor	scale	
scaled	descriptor	scale	
scan	descriptor	scan	
schedule	descriptor	sched	
scheme	descriptor	sch	
science	descriptor	sci	
scientific	descriptor	sci	
scientist	descriptor	sci	
screen	descriptor	screen	
sdif	descriptor	sdif	
secondary	descriptor	sec	
section	descriptor	sect	
selection	descriptor	selc	
semi	descriptor	semi	
sensitivity	descriptor	sens	
sequence	descriptor	seq	
serial	descriptor	serl	

series	descriptor	ser	
set	descriptor	set	
shape	descriptor	shape	
sheet	descriptor	sheet	sht
ship	descriptor	shp	
shipping	descriptor	shp	
shutter	descriptor	shut	
sidereal	descriptor	sid	
size	descriptor	size	
slant	descriptor	slant	
software	descriptor	sw	
solar	descriptor	sol	
source	descriptor	source	src
spacecraft	descriptor	sc	
spacecraft_clock	descriptor	sclk	
spatial	descriptor	spatial	
special	descriptor	spcl	spc
specialty	descriptor	spcl	
species	descriptor	specs	
spectral	descriptor	spec	
spectrum	descriptor	spec	
spin	descriptor	spin	
sql	descriptor	sql	
stabilization	descriptor	stbl	
staff	descriptor	staff	
standard	descriptor	std	
start	descriptor	strt	
state	descriptor	state	st
status	descriptor	status	sts
stop	descriptor	stop	
storage	descriptor	stor	
string	descriptor	str	
sub	descriptor	sub	
submission	descriptor	subm	
subsystem	descriptor	ss	
summary	class	smy	
supplier	descriptor	suplr	
suppliment	descriptor	suplmt	
support	descriptor	sup	
surface	descriptor	surf	
synodic	descriptor	syn	
system	descriptor	sys	
table	descriptor	tbl	
tae	descriptor	tae	
target	descriptor	targ	tg
task	descriptor	task	
telephone	descriptor	telephone	
telescope	descriptor	tlscp	
temperature	descriptor	temp	
template	descriptor	tmplt	
temporal	descriptor	temporaltemp	
terse	descriptor	terse	ters
threshold	descriptor	thrshld	

time	class	time	tm
title	descriptor	title	
topic	descriptor	topic	
total	descriptor	tot	
triaxial	descriptor	triaxl	
translation	descriptor	trans	
transmittance	descriptor	xmit	
true	descriptor	true	
tuple	descriptor	tup	
twist	descriptor	twist	
type	class	type	typ
uncertainty	descriptor	unct	
unit	descriptor	unit	
usage	descriptor	usg	
user	descriptor	user	
userview	descriptor	uv	
validity	descriptor	vldty	
value	class	val	
vector	descriptor	vect	
vendor	descriptor	vend	
version	descriptor	ver	
vertical	descriptor	vert	
wavelength	descriptor	wave	wv
weight	descriptor	wt	
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