

1. Purpose and Scope of Document

The purpose of this document is to provide users of the data product with a detailed description of the product and a description of how it was generated, including data sources and destinations. The document is intended to provide enough information to enable users to read and understand the data product. The users for whom this document is intended are the scientists who will analyze the data, including those associated with the project and those in the general planetary science community. This section should include a one-sentence description of the data product.

2. Applicable Documents

PDS Standards and Data Dictionary documents

Science Data Management Plan for the project

Archive Generation, Validation and Distribution Plan for the project

Archive Volume SIS for the data product

Paper(s) describing the instrument

3. Relationships with Other Interfaces

State what products, software, and documents would be affected by a change in this data product. Refer to documents that describe the other interfaces.

4. Data Product Characteristics and Environment

4.1 Instrument Overview

Describe how the instrument acquires data; include a general description of operating modes as they relate to the data product.

4.2 Data Product Overview

Describe the type of data product (image, spectrum, etc.); what it measures (radiance, voltage, time, etc.); how observations are organized into data products; how a data product is stored (binary or ASCII, how grouped into files). Details should be specified in the following sections.

4.3 Data Processing

This section should provide general information about the data product content, format, size, and production rate. Details about data format should be specified later in section 6.

4.3.1 Data Processing Level

Describe the product in terms of its NASA and/or CODMAC processing levels.

4.3.2 Data Product Generation

Describe how and by whom data products are generated. Describe any calibrations, corrections, or compressions that have been applied to the product. Specify software, algorithms, calibration files or procedures. If a product has been compressed or otherwise processed in a reversible manner, indicate the software, algorithms, and/or ancillary data needed to reverse the processing, and describe how they should be applied. State whether multiple versions of the products will be generated.

4.3.3 Data Flow

Describe the sources, destinations, and transfer procedures for data products. State the size of an individual data product and the total size of all the data products generated over the course of each mission phase. State the time span covered by a product, if applicable, and the rate at which products are generated and delivered. If more than one version of a product may be generated, state the number of expected versions and the rate at which they will be generated.

4.3.4 Labeling and Identification

Indicate how an individual product is identified and labeled, including PDS labels and any other labels or header information. Details about label and header formats should be specified later in section 6. Each individual product should have a unique identifier; describe

how this identifier is assigned. If multiple versions of a product are possible, state how they will be distinguished.

4.4. Standards Used in Generating Data Products

4.4.1 PDS Standards

State that the data products comply with Planetary Data System standards for file formats and labels. Refer to the PDS Standards Reference.

4.4.2 Time Standards

4.4.3 Coordinate Systems

4.4.4 Data Storage Conventions

Address any data storage issues, such as byte order, machine dependence, and compression.

4.5 Data Validation

Describe validation procedures applied to data products to ensure that their contents and format are free of errors. This may be a brief overview if the details are described in another document.

5. Detailed Data Product Specifications

Describe the physical organization of the data product so that the user can access and analyze the data.

5.1 Data Product Structure and Organization

5.2 Data Format Descriptions

5.3 Label and Header Descriptions

Include PDS labels and other labels and headers that describe the data.

6. Applicable Software

Describe any applicable software used to examine, display, or analyze the data products. State who produces the software and who uses it.

6.1 Utility Programs

Include image display tools, plotting tools, etc., that allow a user to examine the data.

6.2 Applicable PDS Software Tools

List the PDS software tools that may be useful in examining the data products.

6.3 Software Distribution and Update Procedures

Describe how the software is distributed and updated, and how the user can obtain it.

7. Appendices

7.1 Glossary

7.2 Acronyms

7.3 Definitions of Data Processing Levels

7.4 Example PDS Label