Chapter 1 - Introduction

Contents

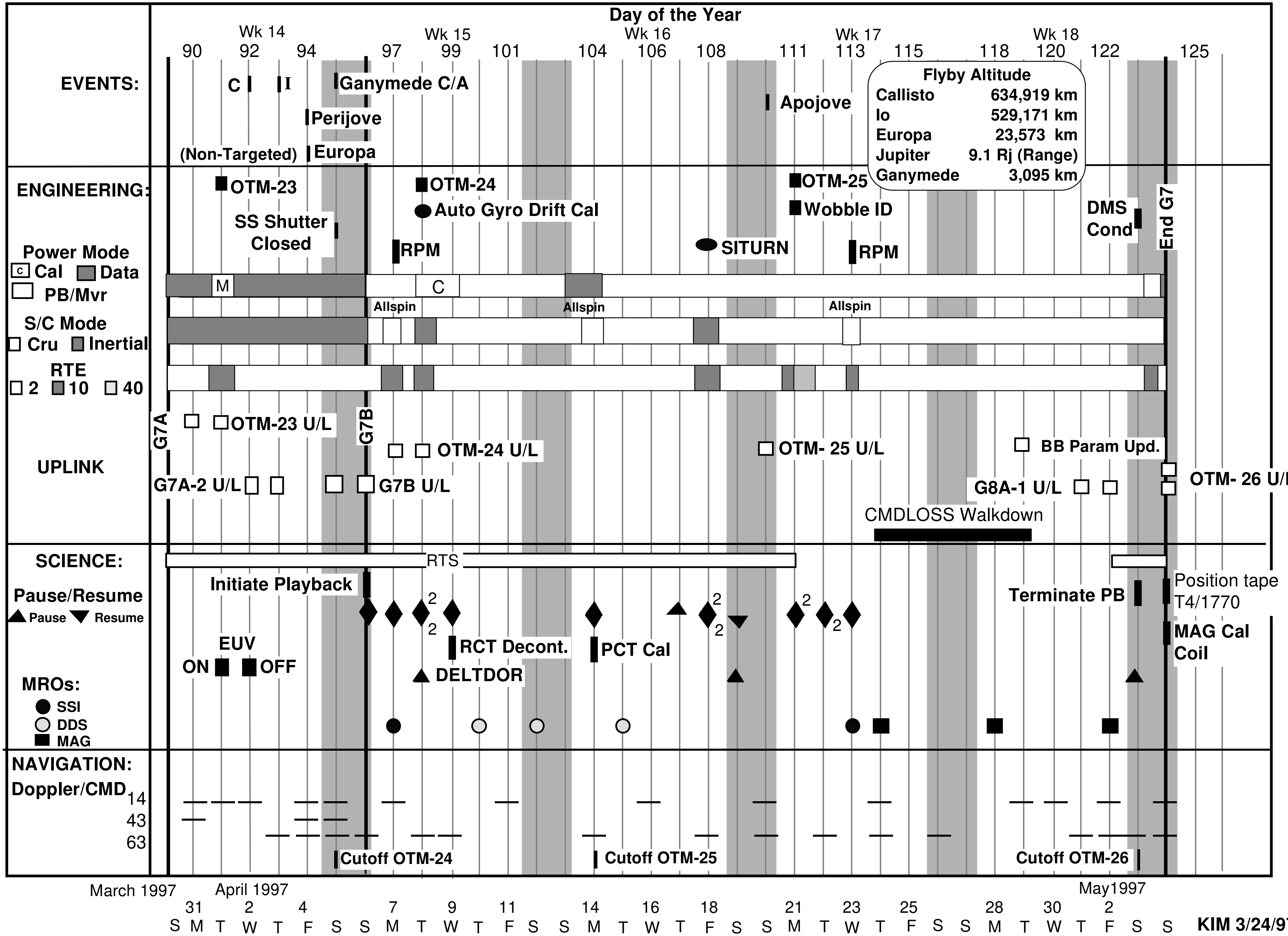
Introduction

This G7 orbit is the seventh of eleven orbits in Galileo’s Tour of the Jovian system. This orbit has a targetted satellite flyby of Ganymede. NIMS will make observations of Jupiter, Io, Europa, Ganymede and Callisto in this orbit. NIMS will also perform some calibrations in this orbit.

There are 15 autonomous reloads of the NIMS RAM code from CDS planned during the G7A encounter period with checksums of the NIMS RAM code before each reload. These reloads are in response to the on-going flight-anomalies where the NIMS RAM code takes some bit hits and halts the instrument during when the spacecraft is close to Jupiter. NIMS NIMS will also return realtime data on a daily basis during the G7A encounter period as a means of monitoring the instrument’s status. NIMS personnel will also monitior the NIMS engineering telemetry data on a regular schedule to track the instrument’s status.

The G7 orbit is divided into 3 sequence loads: two Encounter Loads (G7A1 and G7A2) and one Orbital Cruise Load (G7B). The Encounter Load was spit into two segments to allow a tweak to the Europa flyby. Load G7A1 begins on D089 of 1997 (03/30/97) and ends on D093 of 1997 (04/03/97) and load G7A2 begins on D093 of 1997 and ends on D096 of 1997 (04/06/97). These loads contain the flybys of Jupiter, Europa, Io, Ganymede and Callisto. The Cruise Load, G7B, runs from D096 to D124. Playback of the recorded data takes place during the Cruise phase, G7B. A high-level overview timeline of the G7 orbit can be found on the following page and a summary timeline of the G7 encounter peiod can be found at the end of this chapter.

G7 Overview

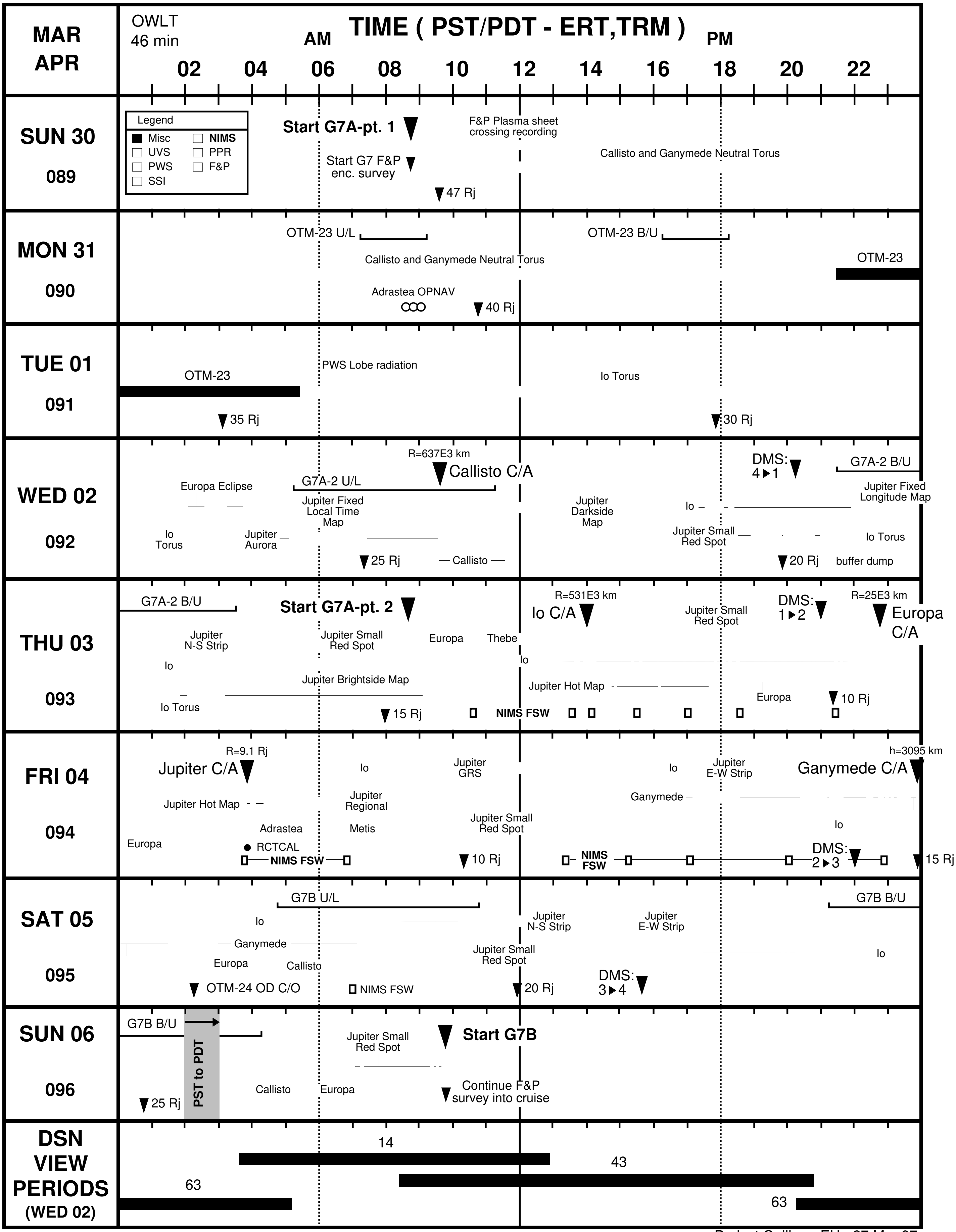

Day of the Year
Wk 14
Wk 15
Wk 16
Wk 17
Wk 18
90 92 94 97 99 101 104 106 108 111 113 115 118 120 122 125
EVENTS:
C
I
Ganymede C/A
Perijove
(Non-Targeted)
Europa
Apojove
Flyby Altitude
Callisto 634,919 km
Io 529,171 km
Europa 23,573 km
Jupiter 9.1 Rj (Range)
Ganymede 3,095 km
ENGINEERING:
OTM-23
OTM-24
Auto Gyro Drift Cal
OTM-25
Wobble ID
SS Shutter Closed
RPM
SITURN
RPM
DMS Cond
End G7
Power Mode
Cal
Data
PB/Mvr
M
C
Allspin
Allspin
Allspin
S/C Mode
Cru
Inertial
RTE
2
10
40
G7A
OTM-23 U/L
G7B
UPLINK
OTM-24 U/L
OTM- 25 U/L
BB Param Upd.
G7A-2 U/L
G7B U/L
G8A-1 U/L
OTM- 26 U/L
CMDLOSS Walkdown
SCIENCE:
RTS
Pause/Resume
Pause
Resume
Initiate Playback
Terminate PB
Position tape T4/1770
EUV
ON
OFF
RCT Decont.
PCT Cal
DELTDOR
MAG Cal Coil
2
MROs:
SSI
DDS
MAG
NAVIGATION:
Doppler/CMD
14
43
63
Cutoff OTM-24
Cutoff OTM-25
Cutoff OTM-26
March 1997
April 1997
May1997
31 2 4 7 9 11 14 16 18 21 23 25 28 30 2
S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S
KIM 3/24/97

Introduction

The following table lists the major events during G7, including NIMS Real Time observations, in UTC.

03/30/97	97-089/16:00:00	G7 Encounter Start
04/02/97	97-092/14:43:34	NIMS R/T Jupiter Aurora
04/02/97	97-092/16:52:00	Callisto Closest Approach
04/03/97	97-093/17:39:19	NIMS R/T Health 01
04/03/97	97-093/17:45:23	NIMS RAM Reload 01
04/03/97	97-093/18:11:41	NIMS R/T Health 02
04/03/97	97-093/20:42:20	NIMS RAM Reload 02
04/03/97	97-093/21:11:00	Io Closest Approach
04/03/97	97-093/21:20:45	NIMS RAM Reload 03
04/03/97	97-093/22:00:11	NIMS R/T Hot Spot 01
04/03/97	97-093/22:36:35	NIMS RAM Reload 04
04/03/97	97-093/23:22:05	NIMS R/T Hot Spot 02
04/04/97	97-094/00:10:37	NIMS RAM Reload 05
04/04/97	97-094/00:51:04	NIMS R/T Hot Spot 03
04/04/97	97-094/01:44:39	NIMS RAM Reload 06
04/04/97	97-094/04:36:33	NIMS RAM Reload 07
04/04/97	97-094/06:00:00	Europa Closest Approach
04/04/97	97-094/10:48:38	NIMS R/T Health 03
04/04/97	97-094/10:54:42	NIMS RAM Reload 08
04/04/97	97-094/11:04:38	Jupiter Closest Approach (PJ7)
04/04/97	97-094/13:57:43	NIMS RAM Reload 09
04/04/97	97-094/20:25:59	NIMS R/T Health 04
04/04/97	97-094/21:27:39	NIMS RAM Reload 10
04/04/97	97-094/22:22:15	NIMS RAM Reload 11
04/04/97	97-094/23:14:50	NIMS R/T Health 05
04/05/97	97-095/00:14:29	NIMS RAM Reload 12
04/05/97	97-095/03:13:27	NIMS RAM Reload 13
04/05/97	97-095/04:09:04	NIMS R/T Health 06
04/05/97	97-095/06:06:21	NIMS RAM Reload 14
04/05/97	97-095/07:11:01	Ganymede Closest Approach (G7)
04/05/97	97-095/14:09:40	NIMS RAM Reload 15
04/06/97	97-096/11:56:01	NIMS R/T Health 07
04/06/97	97-096/15:14:12	NIMS R/T Health 08
04/06/97	97-096/16:00:00	Start G7 Playback
04/08/97	97-098/17:16:11	NIMS R/T RCT CAL
04/13/97	97-103/20:49:39	NIMS R/T PCT CAL
05/01/97	97-121/00:54:21	NIMS R/T OPCAL
05/04/97	97-124/16:00:00	End G7 Playback

GANYMEDE - ORBIT 7 ENCOUNTER SUMMARY



Project Galileo - EH - 27 Mar 97