Chapter 1 - Introduction

Contents

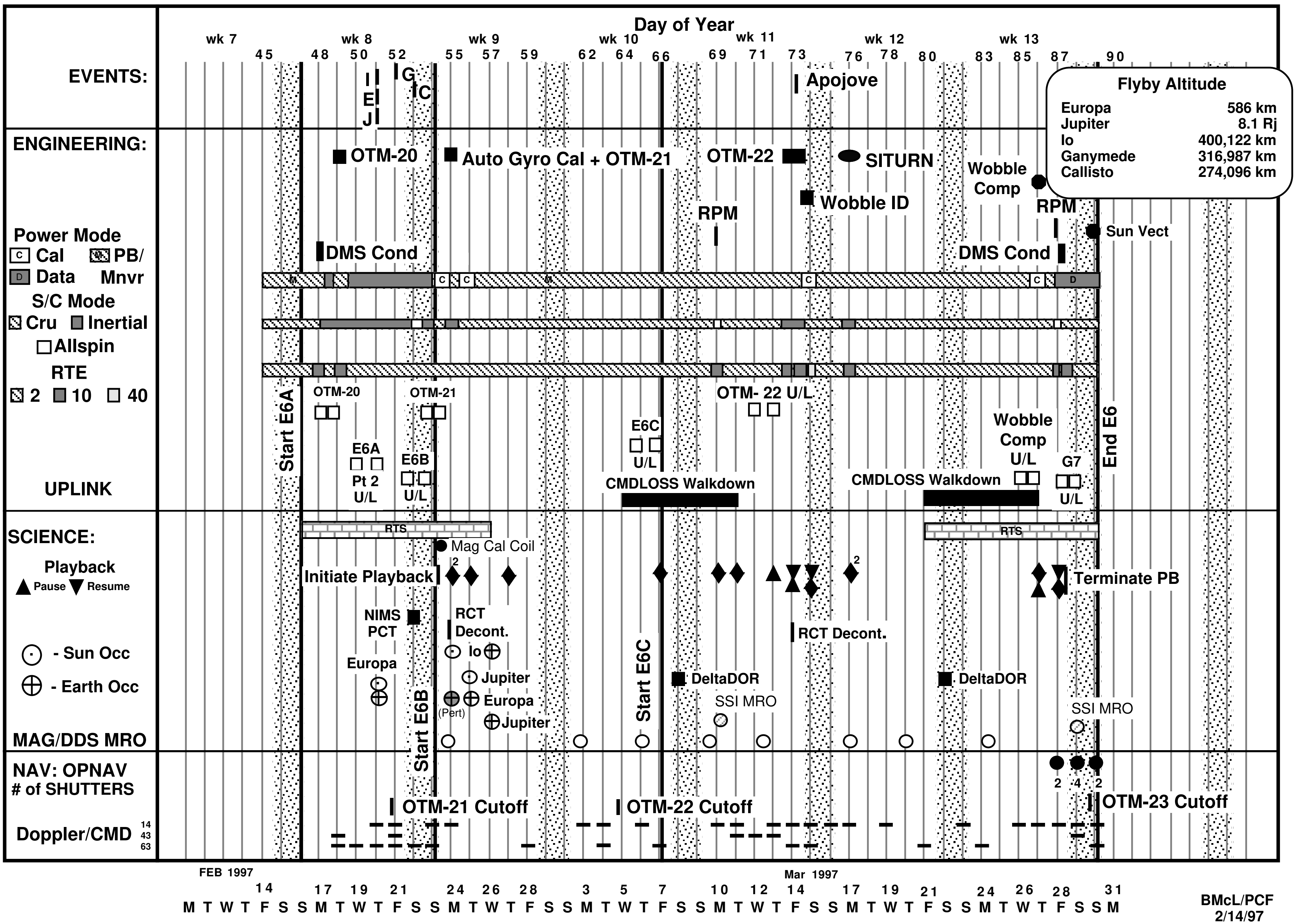
Introduction

This E6 orbit is the sixth of eleven orbits in Galileo's Tour of the Jovian system. This orbit has a targetted satellite flyby of Europa. 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 ten autonomous reloads of the NIMS RAM code from CDS planned during the E6A 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 E6A 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 E6 orbit is divided into 3 sequence loads: one Encounter Load (E6A) and two Orbital Cruise Loads (E6B and E6C). The Encounter Load, E6A, begins on D048 of 1997 (02/17/97) and ends on D054 of 1997 (02/23/97). This load contains the flybys of Jupiter, Europa, Io, Ganymede and Callisto. The first Cruise Load, E6B, runs from D054 to D066. The second Cruise Load, E6C, runs from D066 to D089. Playback of the recorded data takes place during the two Cruise phases, E6B and E6C. A high-level overview timeline of the E6 orbit can be found at the end of this chapter.

E6 Overview


Day of Year
wk 7 wk 8 wk 9 wk 10 wk 11 wk 12 wk 13
45 48 50 52 55 57 59 62 64 66 69 71 73 76 78 80 83 85 87 90
EVENTS:
I E J G C
Apojove
Flyby Altitude
Europa 586 km
Jupiter 8.1 Rj
Io 400,122 km
Ganymede 316,987 km
Callisto 274,096 km
ENGINEERING:
OTM-20
Auto Gyro Cal + OTM-21
OTM-22
SITURN
Wobble Comp
Wobble ID
RPM
Sun Vect
DMS Cond
Power Mode
Cal PB/ Mnvr
Data
S/C Mode
Cru Inertial
Allspin
RTE
2 10 40
Start E6A
OTM-20
OTM-21
OTM- 22 U/L
E6A Pt 2 U/L
E6B U/L
E6C U/L
Wobble Comp U/L
G7 U/L
End E6
UPLINK
CMDLOSS Walkdown
SCIENCE:
RTS
Mag Cal Coil
Playback
Pause Resume
Initiate Playback
Terminate PB
NIMS PCT
RCT Decont.
- Sun Occ
- Earth Occ
Europa
Io
Jupiter
Europa
(Pert)
Jupiter
Start E6B
Start E6C
DeltaDOR
SSI MRO
MAG/DDS MRO
NAV: OPNAV
# of SHUTTERS
OTM-21 Cutoff
OTM-22 Cutoff
OTM-23 Cutoff
Doppler/CMD
14
43
63
FEB 1997
Mar 1997
14 17 19 21 24 26 28 3 5 7 10 12 14 17 19 21 24 26 28 31
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 M T W T F S S M T W T F S S M
BMcL/PCF
2/14/97

E6 Major Events

The following table lists the major events during E6, including NIMS Real Time observations, in UTC.

02/17/97	97-048/00:00:00	E6 Encounter Start
02/18/97	97-049/12:38:47	NIMS R/T Jupiter Aurora
02/19/97	97-050/21:31:28	NIMS R/T Health 01
02/19/97	97-050/21:37:32	NIMS RAM Reload 01
02/20/97	97-051/03:24:21	NIMS R/T Jupiter Hot Spot
02/20/97	97-051/03:48:37	NIMS RAM Reload 08
02/20/97	97-051/08:17:41	NIMS R/T Health 02
02/20/97	97-051/08:23:45	NIMS RAM Reload 02
02/20/97	97-051/11:39:48	NIMS RAM Reload 10
02/20/97	97-051/11:55:58	NIMS R/T Europa
02/20/97	97-051/12:04:00	Io Closest Approach
02/20/97	97-051/15:58:38	NIMS RAM Reload 09
02/20/97	97-051/16:40:06	NIMS R/T Io
02/20/97	97-051/17:03:00	Europa Closest Approach (E6)
02/20/97	97-051/20:53:00	Jupiter Closest Approach (PJ6)
02/20/97	97-051/21:39:23	NIMS R/T Health 03
02/20/97	97-051/21:48:29	NIMS RAM Reload 03
02/21/97	97-052/06:44:22	NIMS R/T Health 04
02/21/97	97-052/06:50:26	NIMS RAM Reload 04
02/21/97	97-052/09:36:15	NIMS R/T Health 05
02/21/97	97-052/09:42:19	NIMS RAM Reload 05
02/21/97	97-052/15:59:28	NIMS R/T Health 06
02/21/97	97-052/16:05:32	NIMS RAM Reload 06
02/21/97	97-052/16:26:00	Ganymede Closest Approach
02/22/97	97-053/02:42:32	NIMS R/T Health 07
02/22/97	97-053/02:48:36	NIMS RAM Reload 07
02/22/97	97-053/21:55:12	NIMS R/T Callisto
02/22/97	97-053/22:55:00	Callisto Closest Approach
02/23/97	97-054/01:30:00	Start E6 Playback
02/24/97	97-055/15:52:52	NIMS R/T RCT CAL
03/15/97	97-074/01:38:07	NIMS R/T RCT CAL
03/27/97	97-086/00:07:01	NIMS R/T OPCAL
03/30/97	97-089/16:00:00	End E6 Playback