Chapter 3 - Orbit Geometries

Contents

Sub-Section		Page
3.0	Contents	1
3.1	Introduction to Chapter 3	2
3.2	G7 North Trajectory Pole View (apo to apo) ...	3
3.3	G7 North Trajectory Pole View (+/- 5 days) ...	4
3.4	G7 North Trajectory Pole View (+/- 1 day)	5
3.5	Ganymede Groundtrack at Closest Approach	6
3.6	Jupiter Groundtrack at closest Approach	7
3.7	South Trajectory Pole View (+/- 1 hour)	8
3.8	S/C Altitude with respect to Ganymede	9
3.9	Cone Angle of Ganymede (Earth-S/C-Ganymede) ...	10
3.10	Sun-Ganymede-S/C Angle	11
3.11	S/C range to Jupiter center of Mass	12
3.12	Cone angle of Jupiter (Earth-S/C-Jupiter)	13
3.13	Sun-Jupiter-S/C angle	14

Introduction to Chapter 3

This chapter contains diagrams of various aspects of geometry for the G7 Orbit.

The figure on page 3 is a North Trajectory Pole View of the G7 Orbit from apoapsis to apoapsis.

The figure on page 4 is a North Trajectory Pole View of the G7 Orbit from +/- 5 days of Ganymede closest approach.

The figure on page 5 is a North Trajectory Pole View of the G7 Orbit from +/- 1 day of Ganymede closest approach.

The figure on page 6 shows the spacecraft's groundtrack on Ganymede at Ganymede closest approach.

The figure on page 7 shows the spacecraft's groundtrack on Jupiter at Jupiter closest approach.

The figure on page 8 is a South Trajectory Pole View of the G7 Orbit from +/- 1 hour of Ganymede closest approach.

The figure on page 9 shows spacecraft altitude with respect to Ganymede (km).

The figure on page 10 shows the cone angle of Ganymede (Earth - S/C - Ganymede, deg).

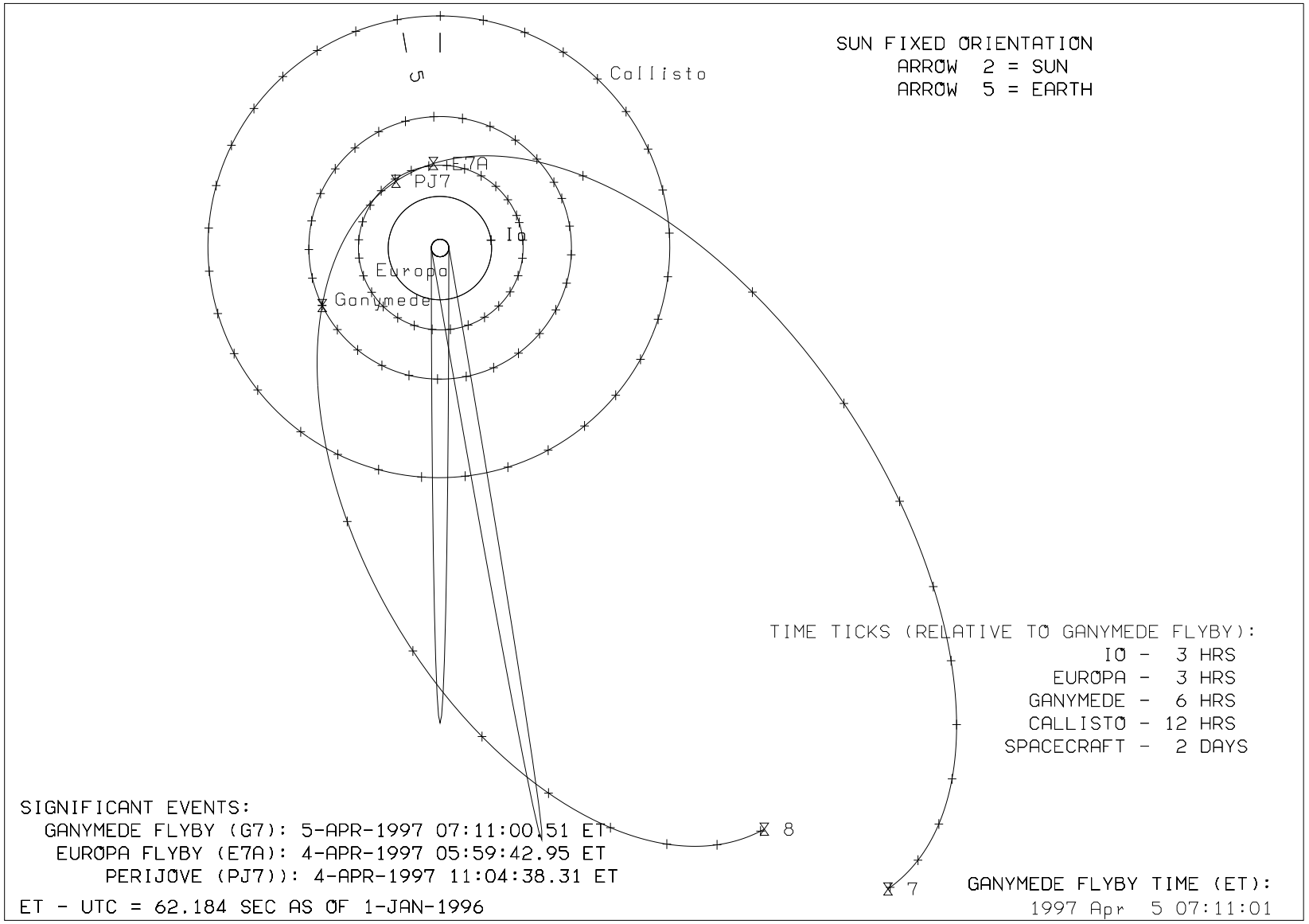
The figure on page 11 shows the Sun-Ganymede-S/C Angle (deg).

The figure on page 12 shows spacecraft range to Jupiter's center of mass (Rj).

The figure on page 13 shows the cone angle of Jupiter (Earth - S/C - Jupiter, deg).

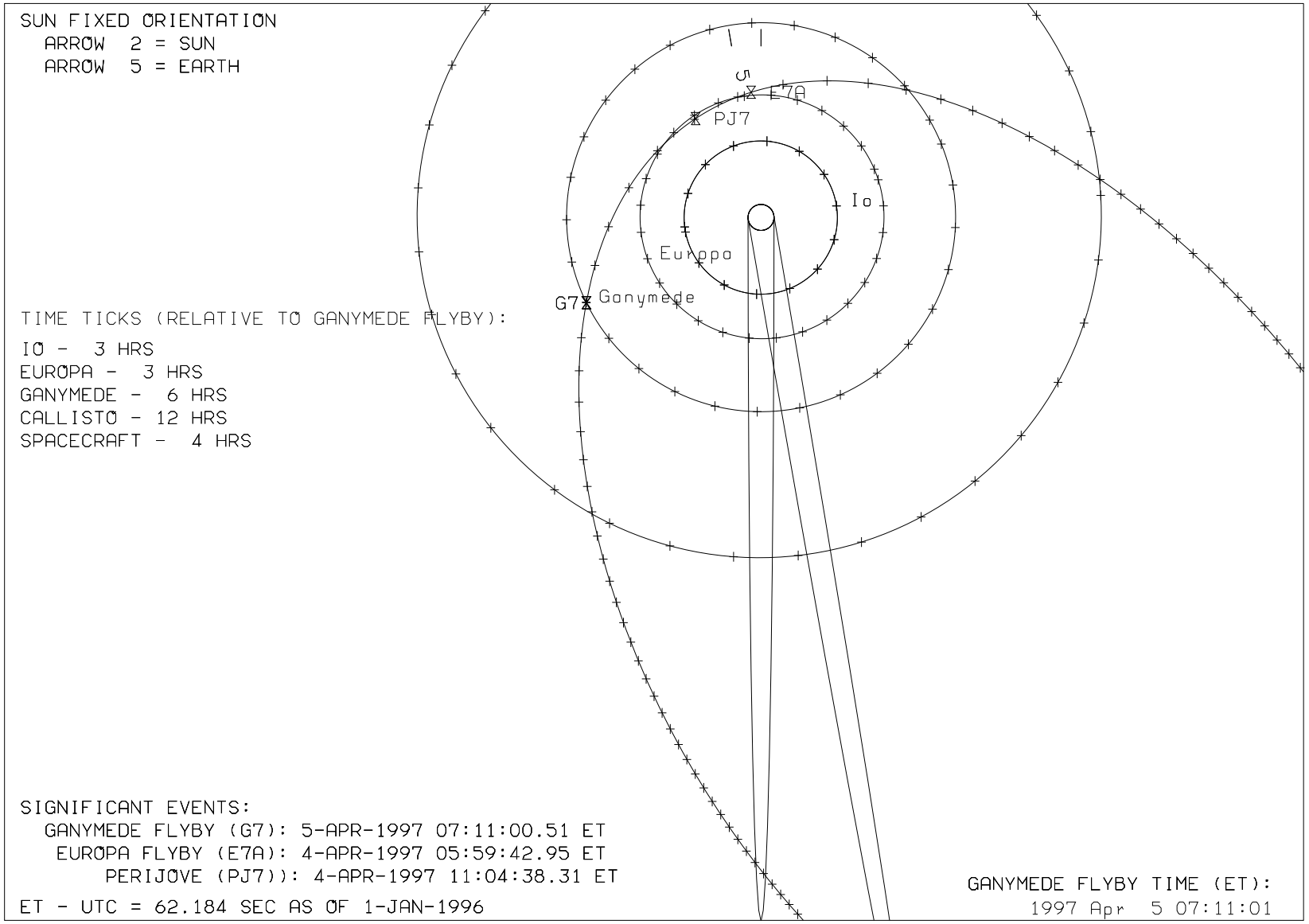
The figure on page 14 shows the Sun-Jupiter-S/C Angle (deg).

Jupiter 7: North Traj Pole View (G7 Apo to Apo)



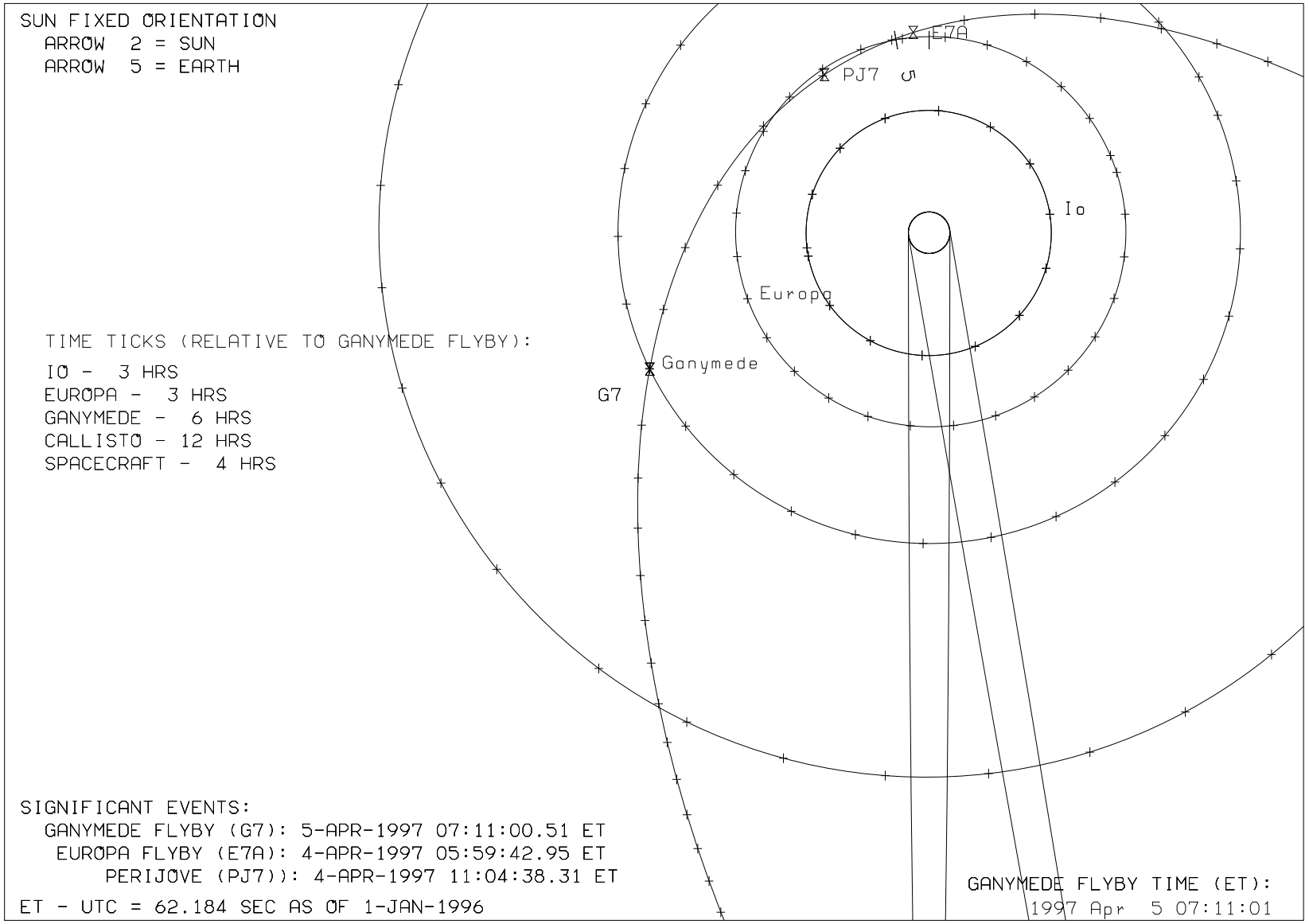
JLB 2/22/97

Jupiter 7: North Traj Pole View (G7 +/- 5 days)



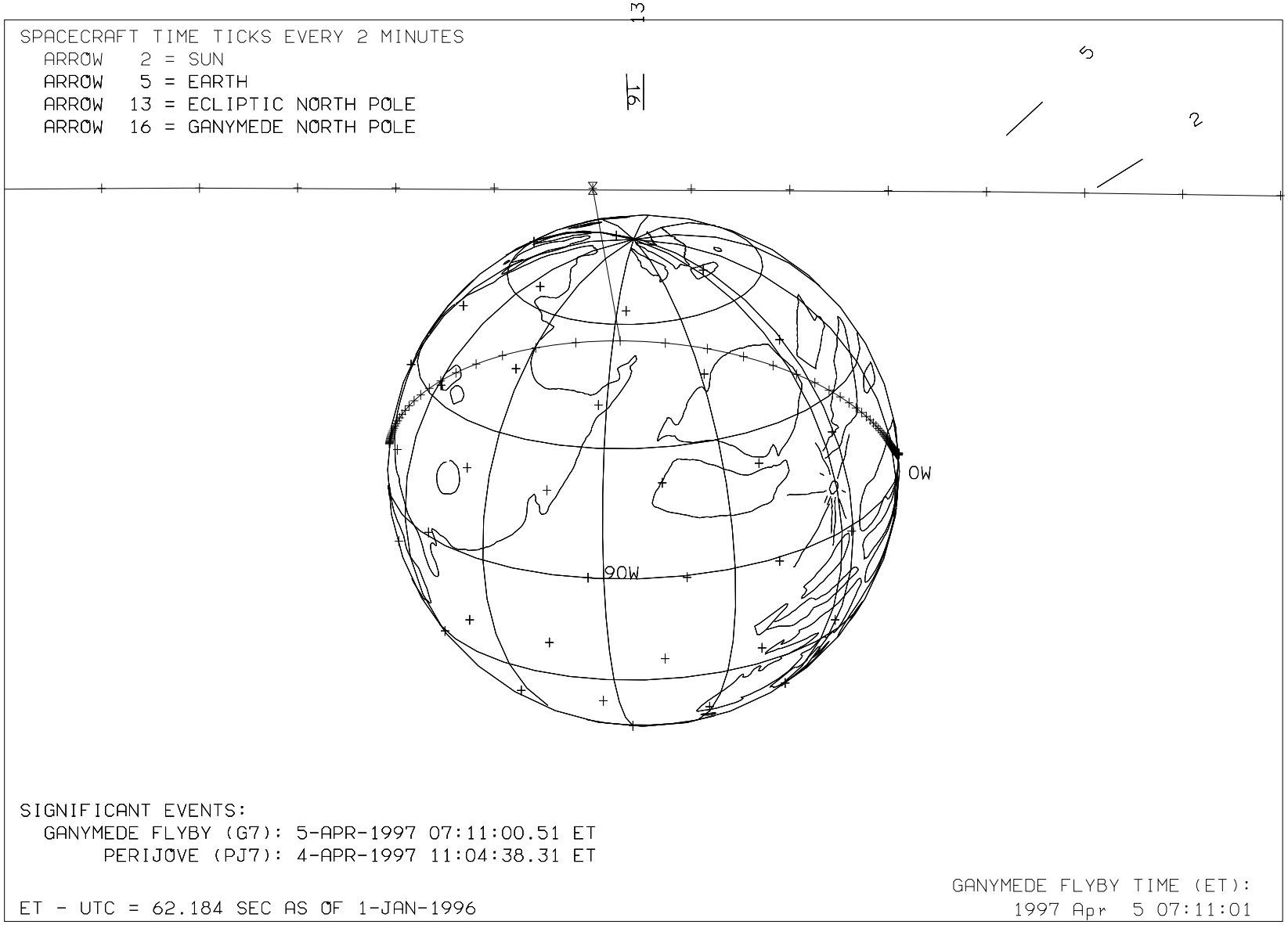
JLB 2/22/97

Jupiter 7: North Traj Pole View (G7 +/- 1 day)



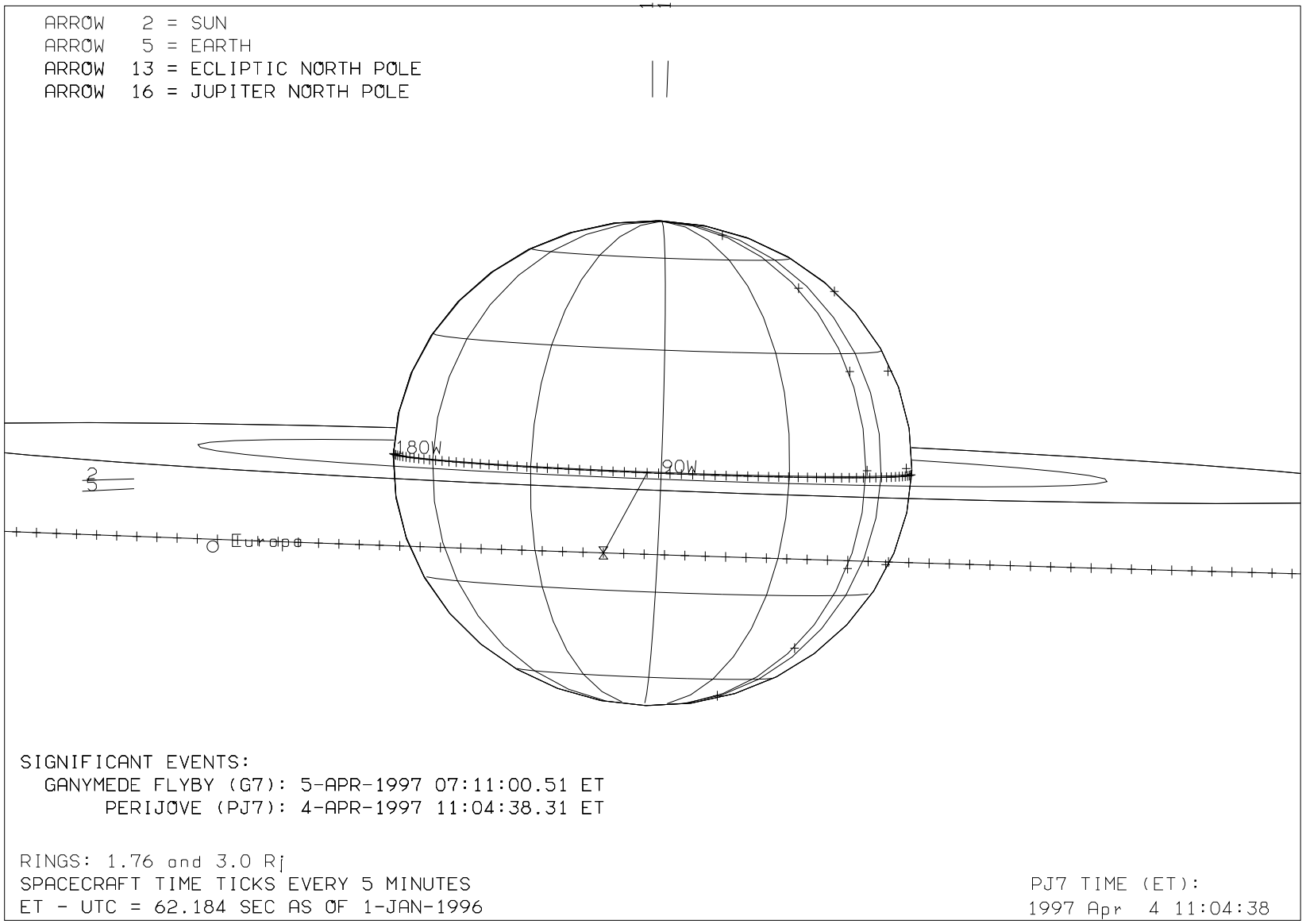
JLB 2/22/97

GANYMEDE 7: GROUNDTRACK AT CLOSEST APPROACH



JLB 2/22/97

JUPITER 7: GROUNDTRACK AT CLOSEST APPROACH



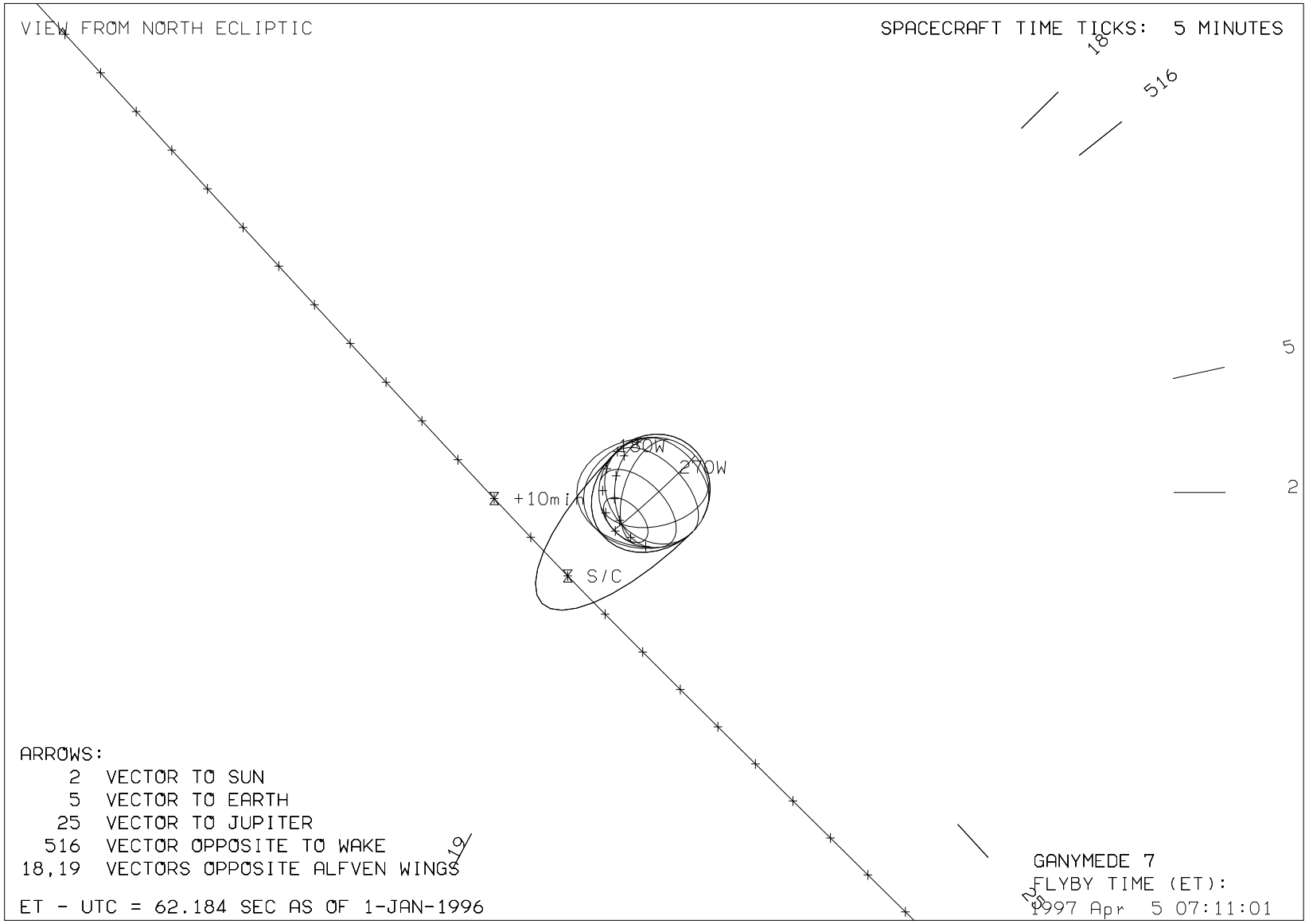
SIGNIFICANT EVENTS:
GANYMEDE FLYBY (G7): 5-APR-1997 07:11:00.51 ET
PERIJOVE (PJ7): 4-APR-1997 11:04:38.31 ET

RINGS: 1.76 and 3.0 Rj
SPACECRAFT TIME TICKS EVERY 5 MINUTES
ET - UTC = 62.184 SEC AS OF 1-JAN-1996

PJ7 TIME (ET):
1997 Apr 4 11:04:38

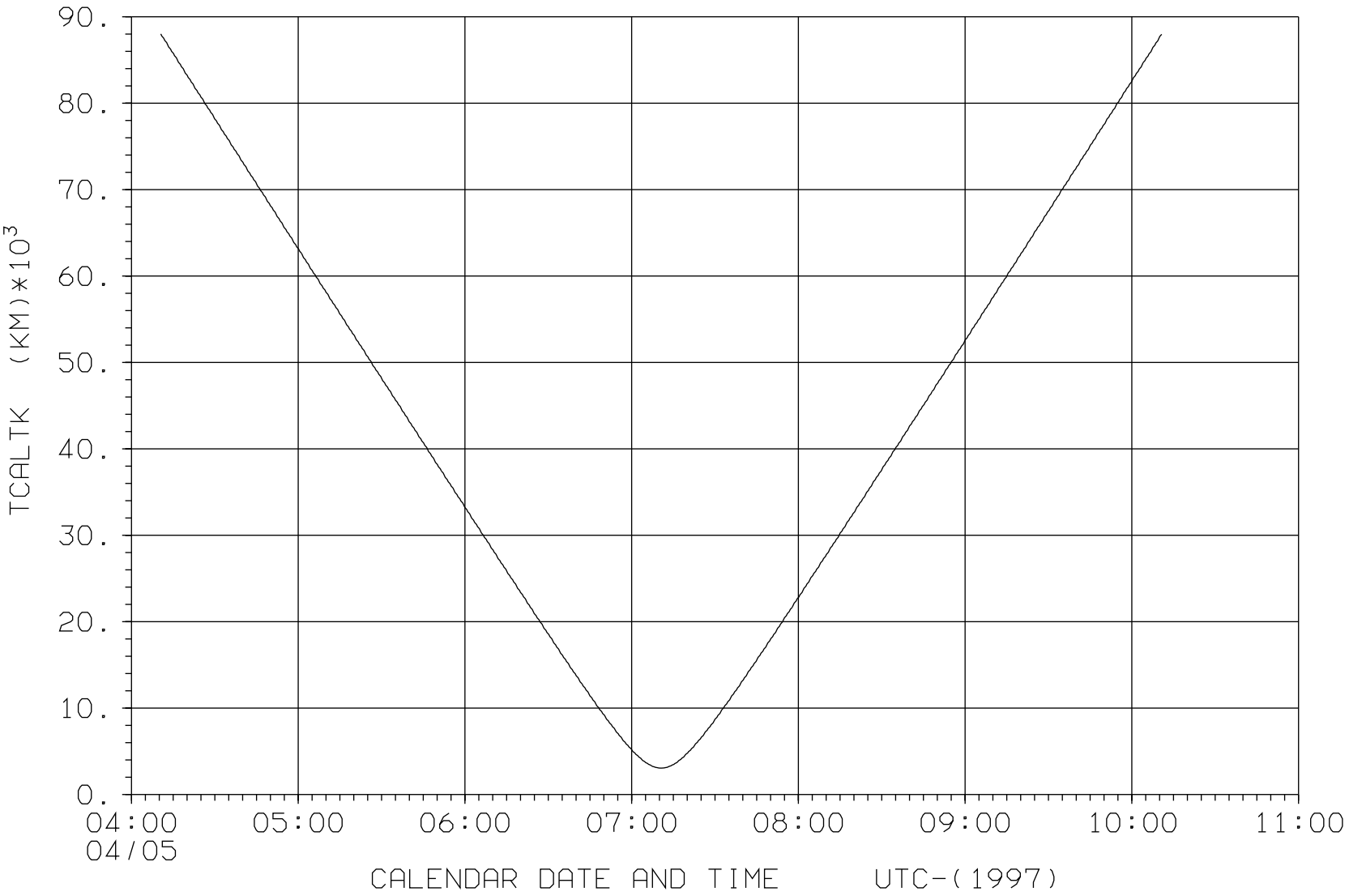
JLB 2/22/97

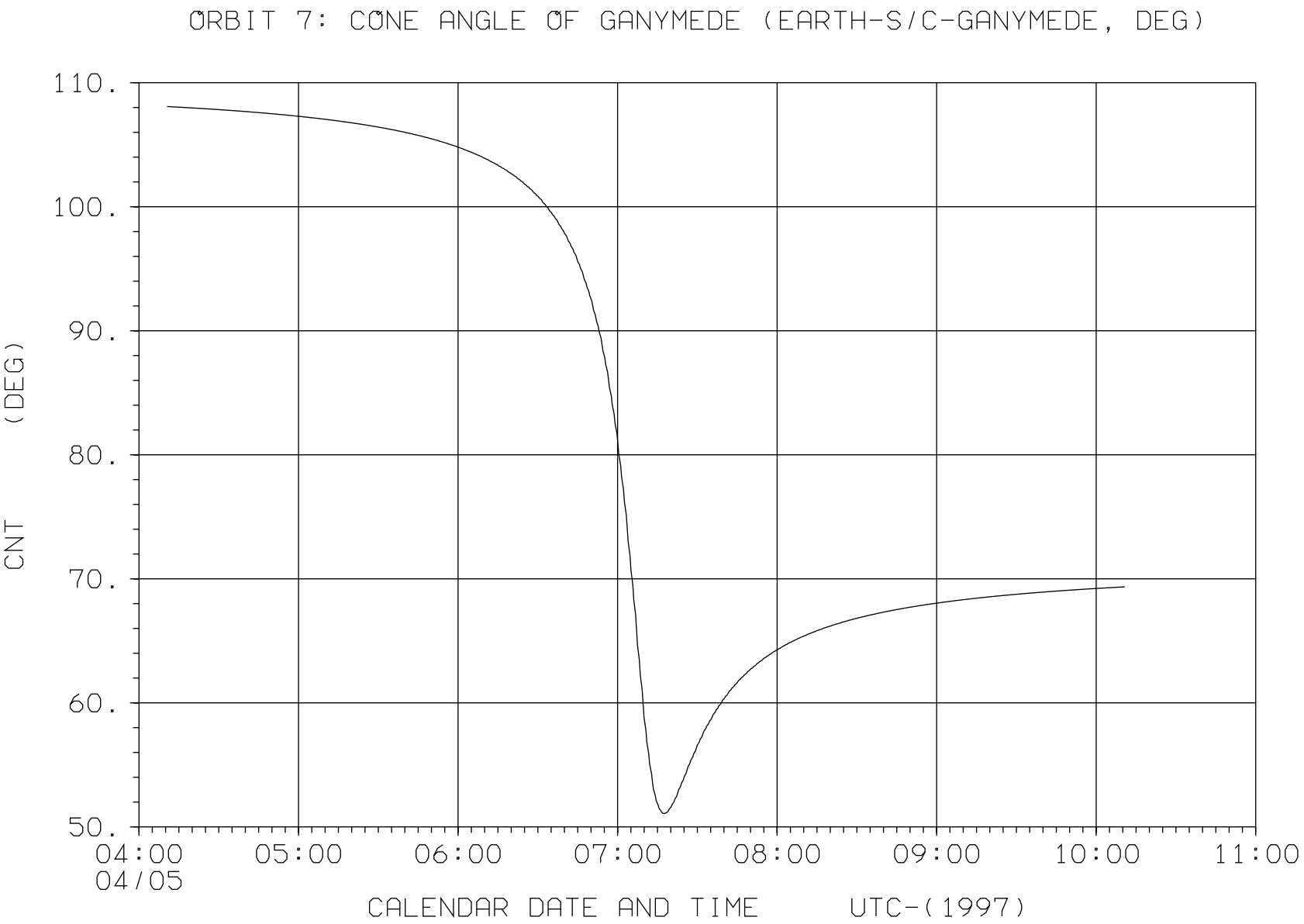
GANYMEDE 7: CLOSEST APPROACH (SOUTH TRAJ POLE VIEW)

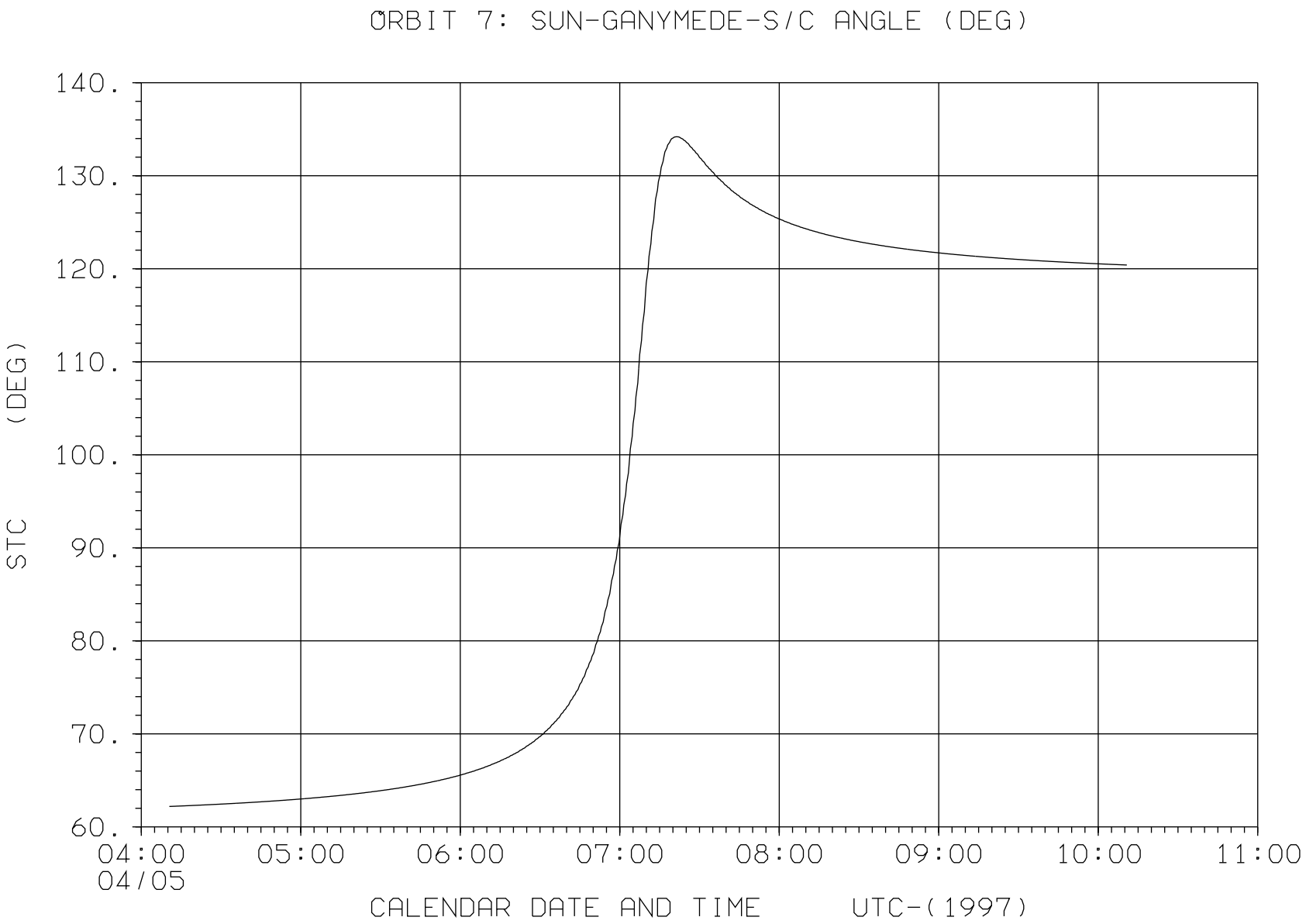


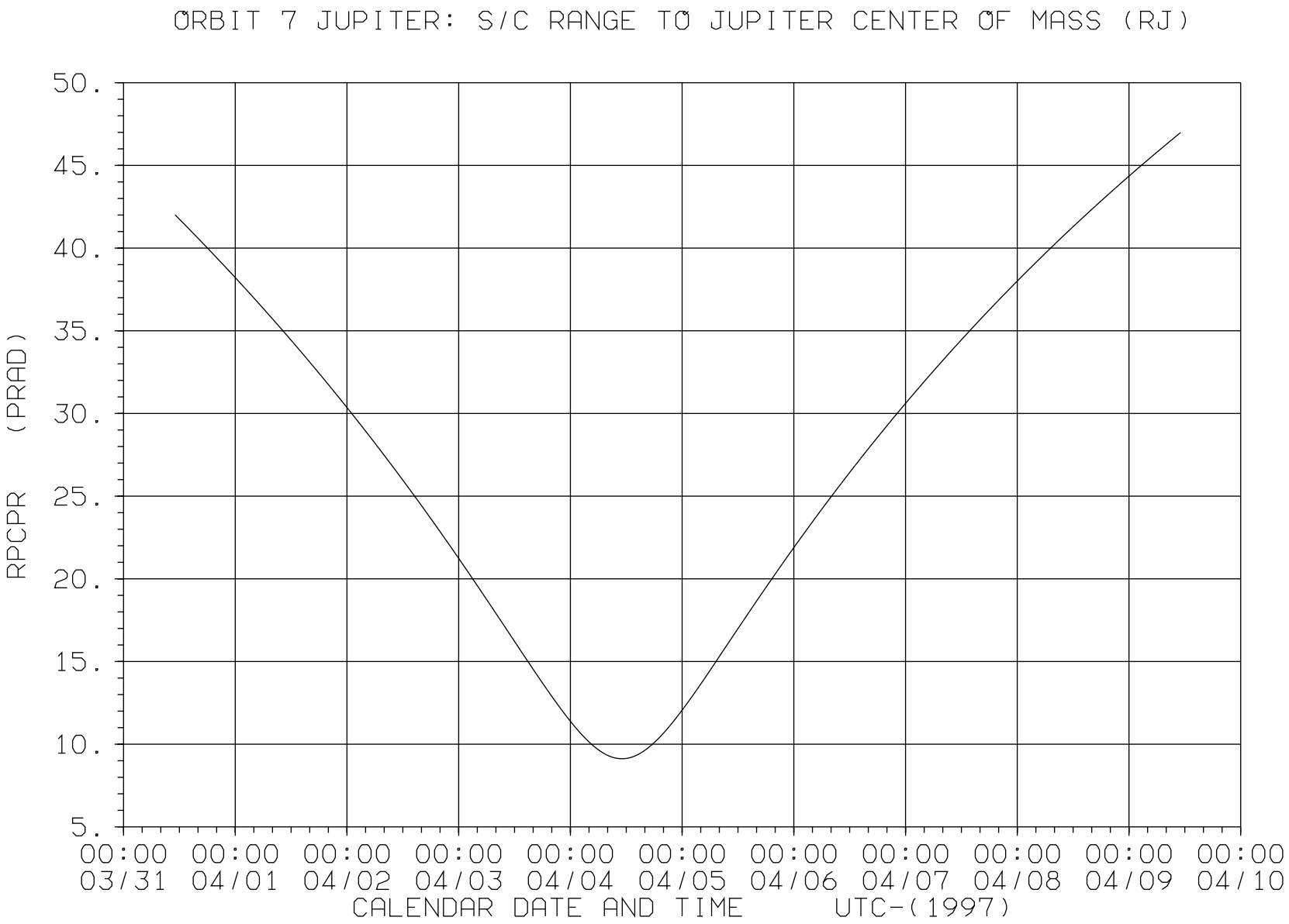
JLB 2/22/97

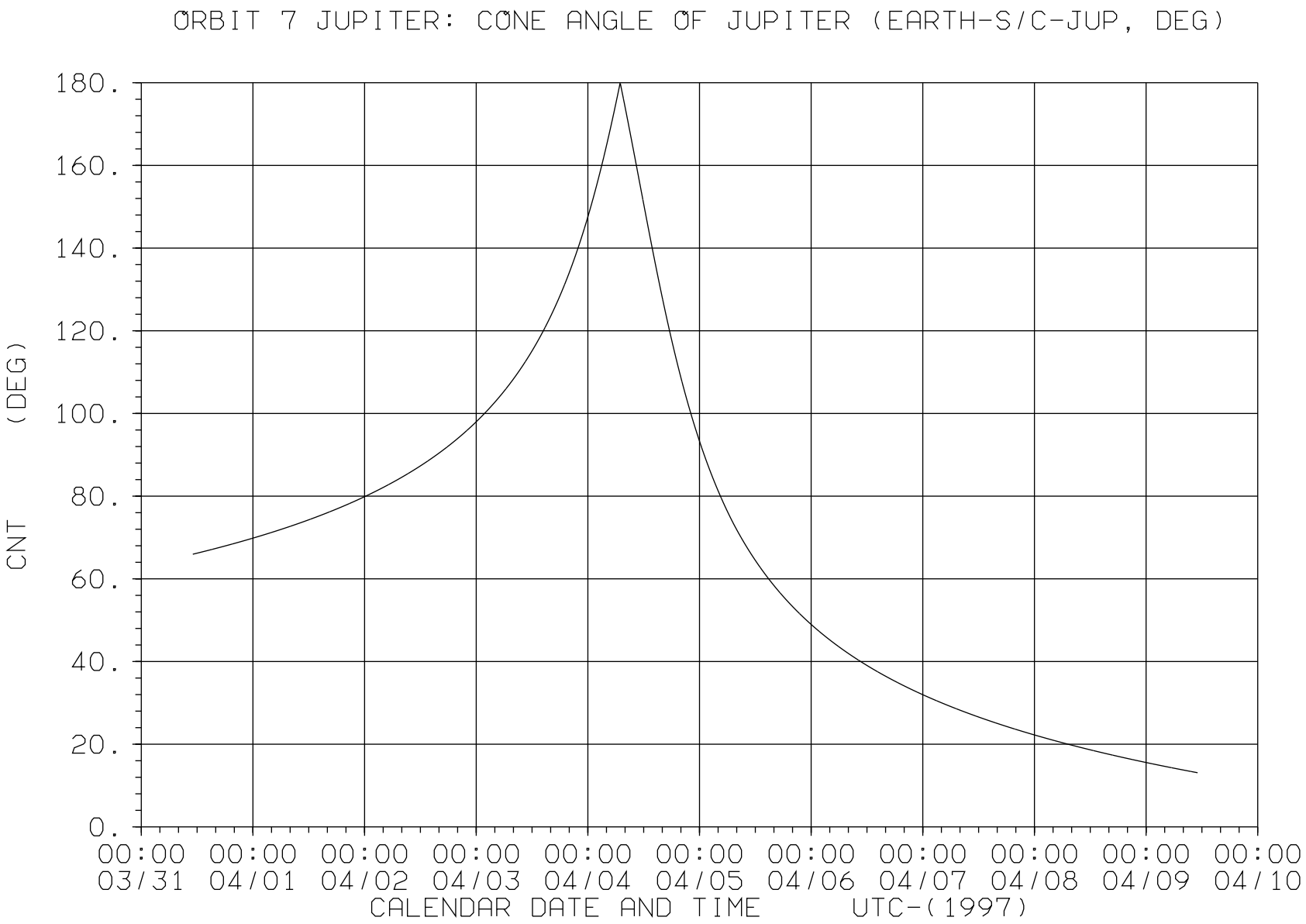
ORBIT 7: S/C ALTITUDE WITH RESPECT TO GANYMEDE (KM)

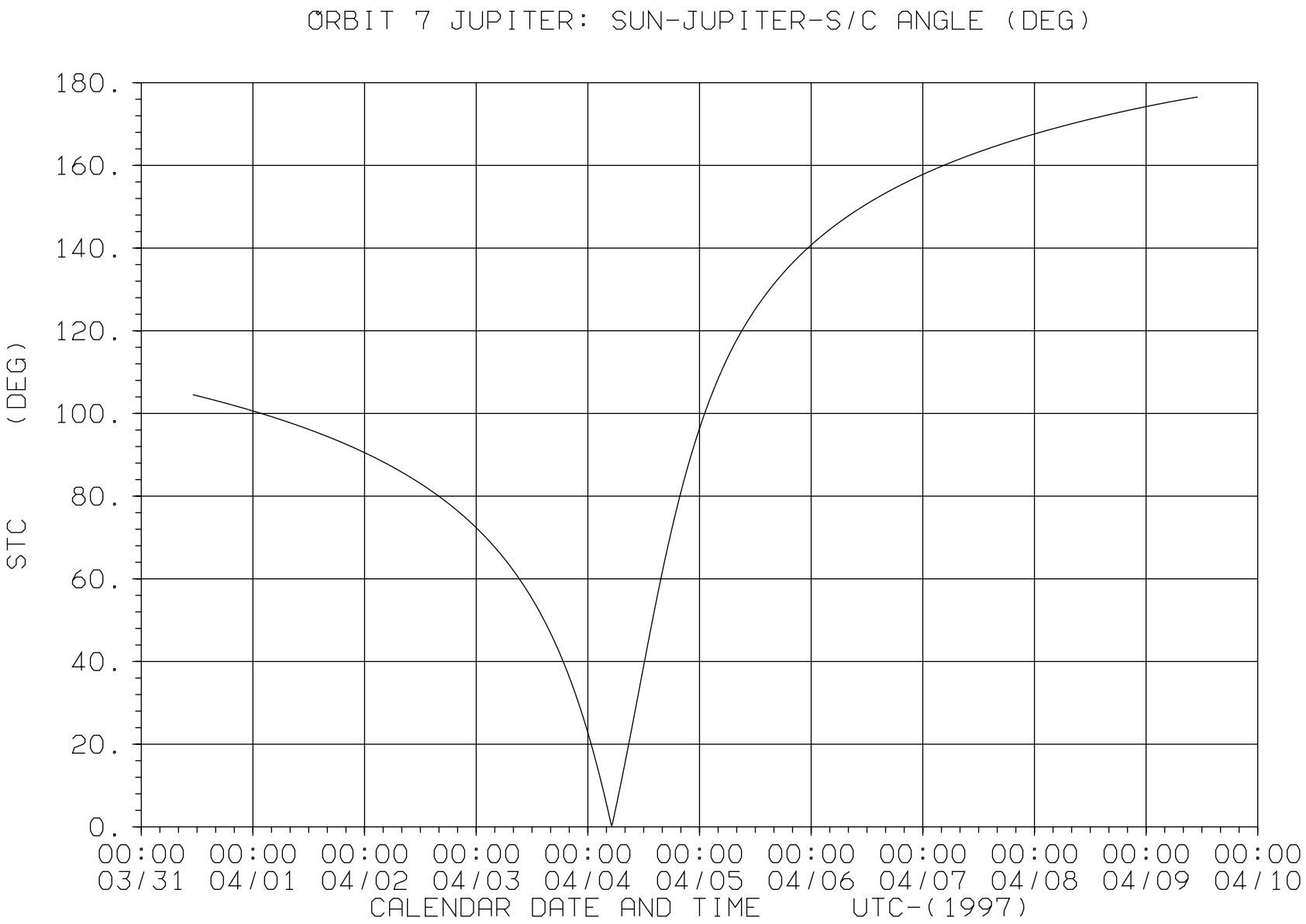



ORBIT 7: CONE ANGLE OF GANYMEDE (EARTH-S/C-GANYMEDE, DEG)
110.
100.
90.
80.
70.
60.
50.
CNT (DEG)
04:00
04/05
05:00
06:00
07:00
08:00
09:00
10:00
11:00
CALENDAR DATE AND TIME UTC-(1997)


ORBIT 7: SUN-GANYMEDE-S/C ANGLE (DEG)
STC (DEG)
140.
130.
120.
110.
100.
90.
80.
70.
60.
04:00
04/05
05:00
06:00
07:00
08:00
09:00
10:00
11:00
CALENDAR DATE AND TIME UTC-(1997)


ORBIT 7 JUPITER: S/C RANGE TO JUPITER CENTER OF MASS (RJ)
RPCPR (PRAD)
50.
45.
40.
35.
30.
25.
20.
15.
10.
5.
00:00 03/31
00:00 04/01
00:00 04/02
00:00 04/03
00:00 04/04
00:00 04/05
00:00 04/06
00:00 04/07
00:00 04/08
00:00 04/09
00:00 04/10
CALENDAR DATE AND TIME UTC-(1997)


ORBIT 7 JUPITER: CONE ANGLE OF JUPITER (EARTH-S/C-JUP, DEG)
CNT (DEG)
180.
160.
140.
120.
100.
80.
60.
40.
20.
0.
00:00 03/31
00:00 04/01
00:00 04/02
00:00 04/03
00:00 04/04
00:00 04/05
00:00 04/06
00:00 04/07
00:00 04/08
00:00 04/09
00:00 04/10
CALENDAR DATE AND TIME UTC-(1997)


ORBIT 7 JUPITER: SUN-JUPITER-S/C ANGLE (DEG)
STC (DEG)
180.
160.
140.
120.
100.
80.
60.
40.
20.
0.
00:00 03/31
00:00 04/01
00:00 04/02
00:00 04/03
00:00 04/04
00:00 04/05
00:00 04/06
00:00 04/07
00:00 04/08
00:00 04/09
00:00 04/10
CALENDAR DATE AND TIME UTC-(1997)