Chapter 3 - Orbit Geometries

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Introduction to Chapter 3

This chapter contains diagrams of various aspects of geometry for the G8 Orbit.

The figure on page 3 is a North Trajectory Pole View of the G8 Orbit from apoapsis to apoapsis.

The figure on page 4 is a North Trajectory Pole View of the G8 Orbit from +/- 5 days of Ganymede closest approach.

The figure on page 5 is a North Trajectory Pole View of the G8 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 G8 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).

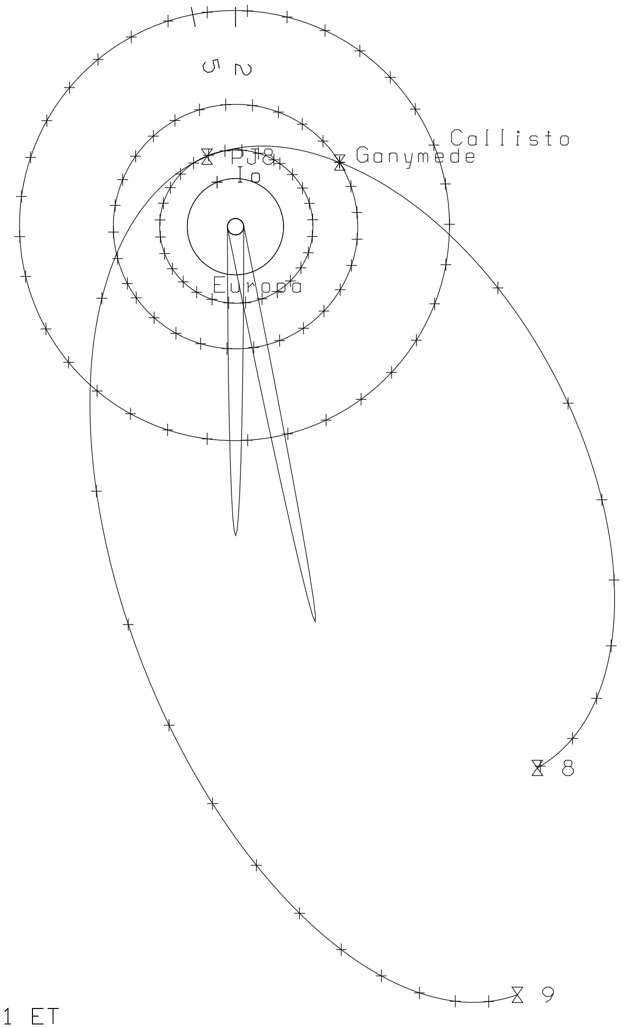
The figure on page 12 shows spacecraft range to Jupiter's center of mass (Rj).

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 8: North Traj Pole View (G8 Apo to Apo)

SUN FIXED ORIENTATION
ARROW 2 = SUN
ARROW 5 = EARTH



TIME TICKS (RELATIVE TO GANYMEDE FLYBY):
IO - 3 HRS
EUROPA - 3 HRS
GANYMEDE - 6 HRS
CALLISTO - 12 HRS
SPACECRAFT - 2 DAYS

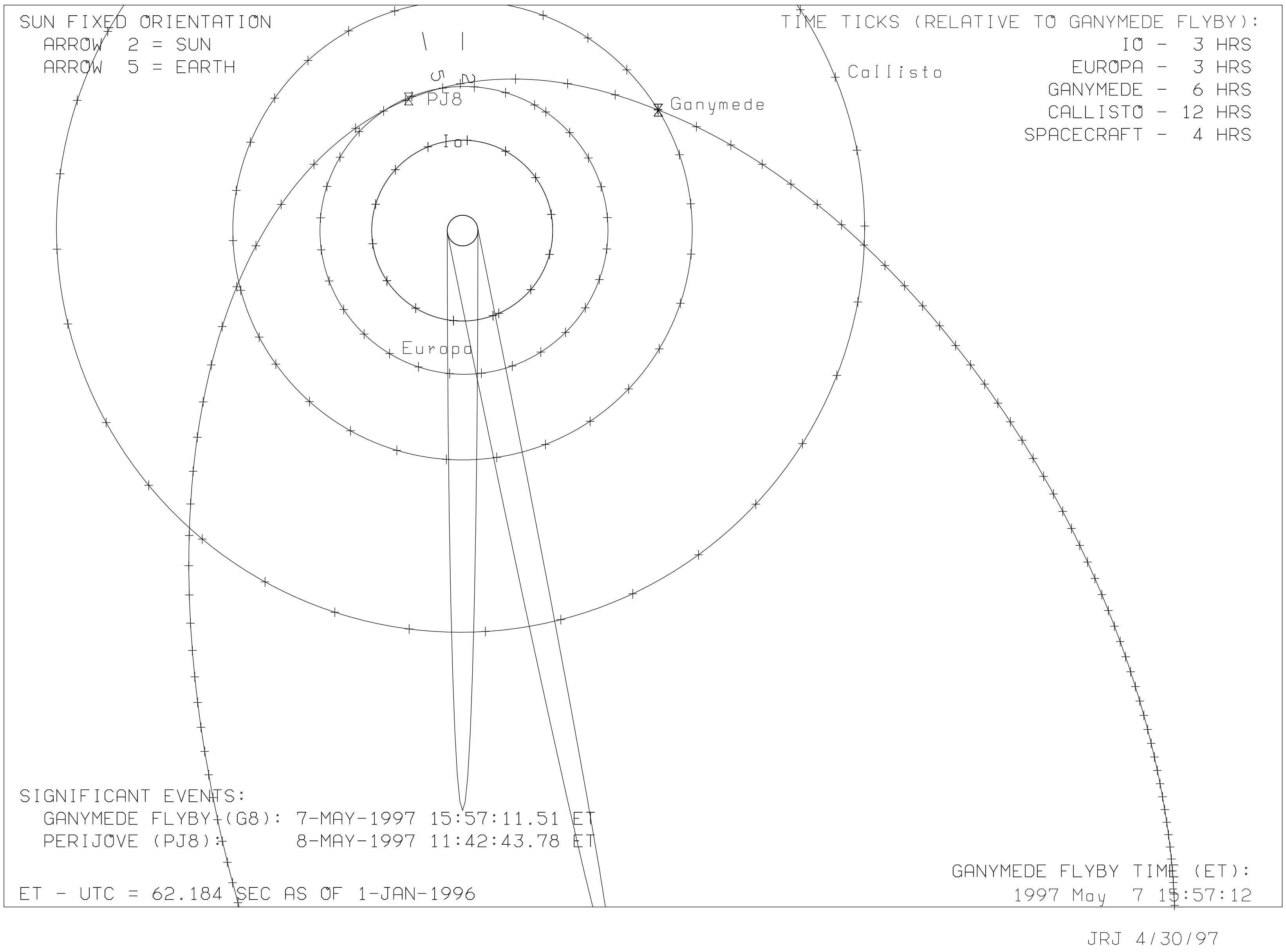
SIGNIFICANT EVENTS:
GANYMEDE FLYBY (G8): 7-MAY-1997 15:57:11.51 ET
PERIJOVE (PJ8): 8-MAY-1997 11:42:43.78 ET

ET - UTC = 62.184 SEC AS OF 1-JAN-1996

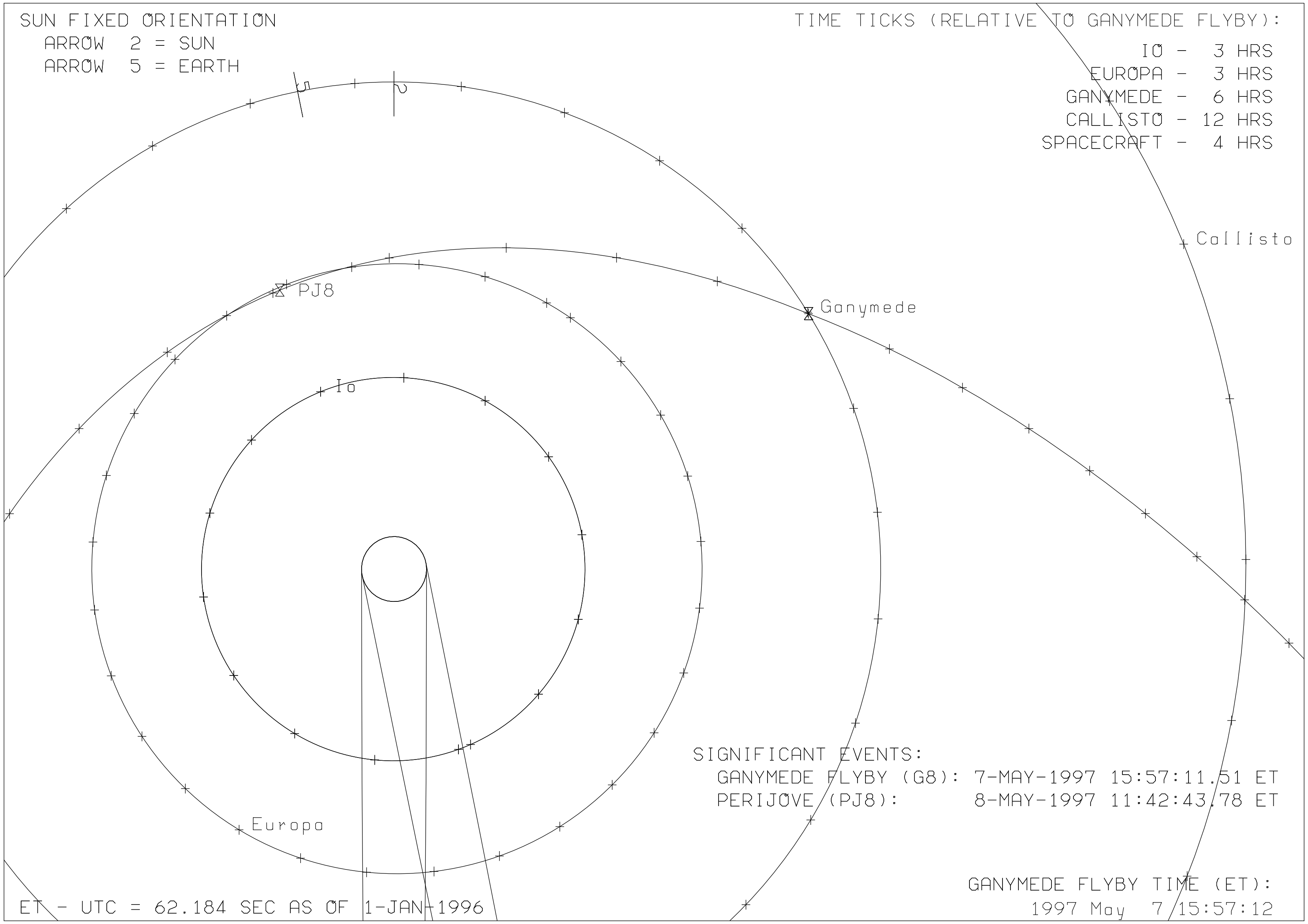
GANYMEDE FLYBY TIME (ET):
1997 May 7 15:57:12

JRJ 4/30/97

Jupiter 8: North Traj Pole View (G8 +/- 5 days)



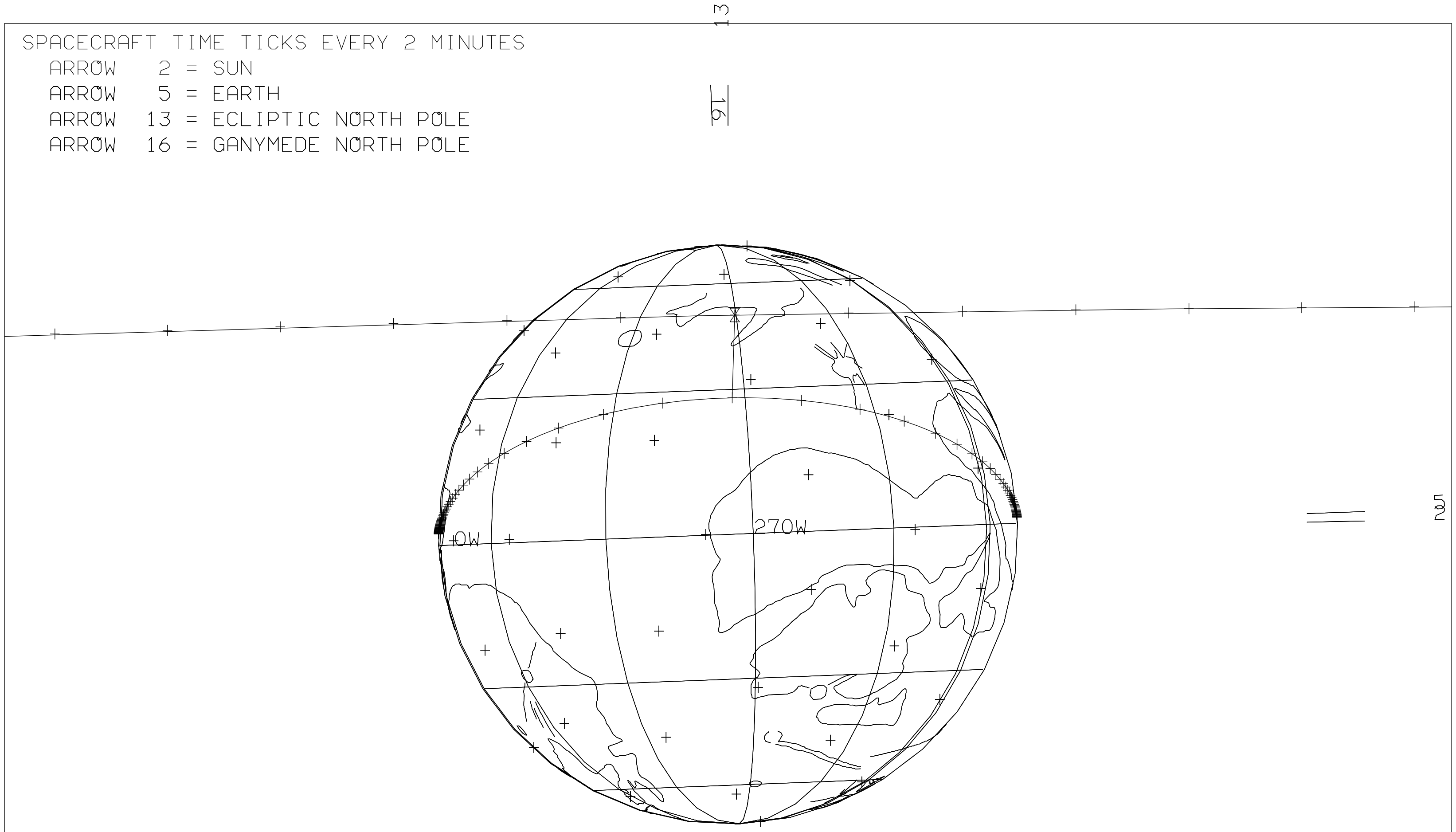
Jupiter 8: North Traj Pole View (G8 +/- 1 day)



JRJ 4/30/97

GANYMEDE 8: GROUNDTRACK AT CLOSEST APPROACH

SPACECRAFT TIME TICKS EVERY 2 MINUTES
ARROW 2 = SUN
ARROW 5 = EARTH
ARROW 13 = ECLIPTIC NORTH POLE
ARROW 16 = GANYMEDE NORTH POLE



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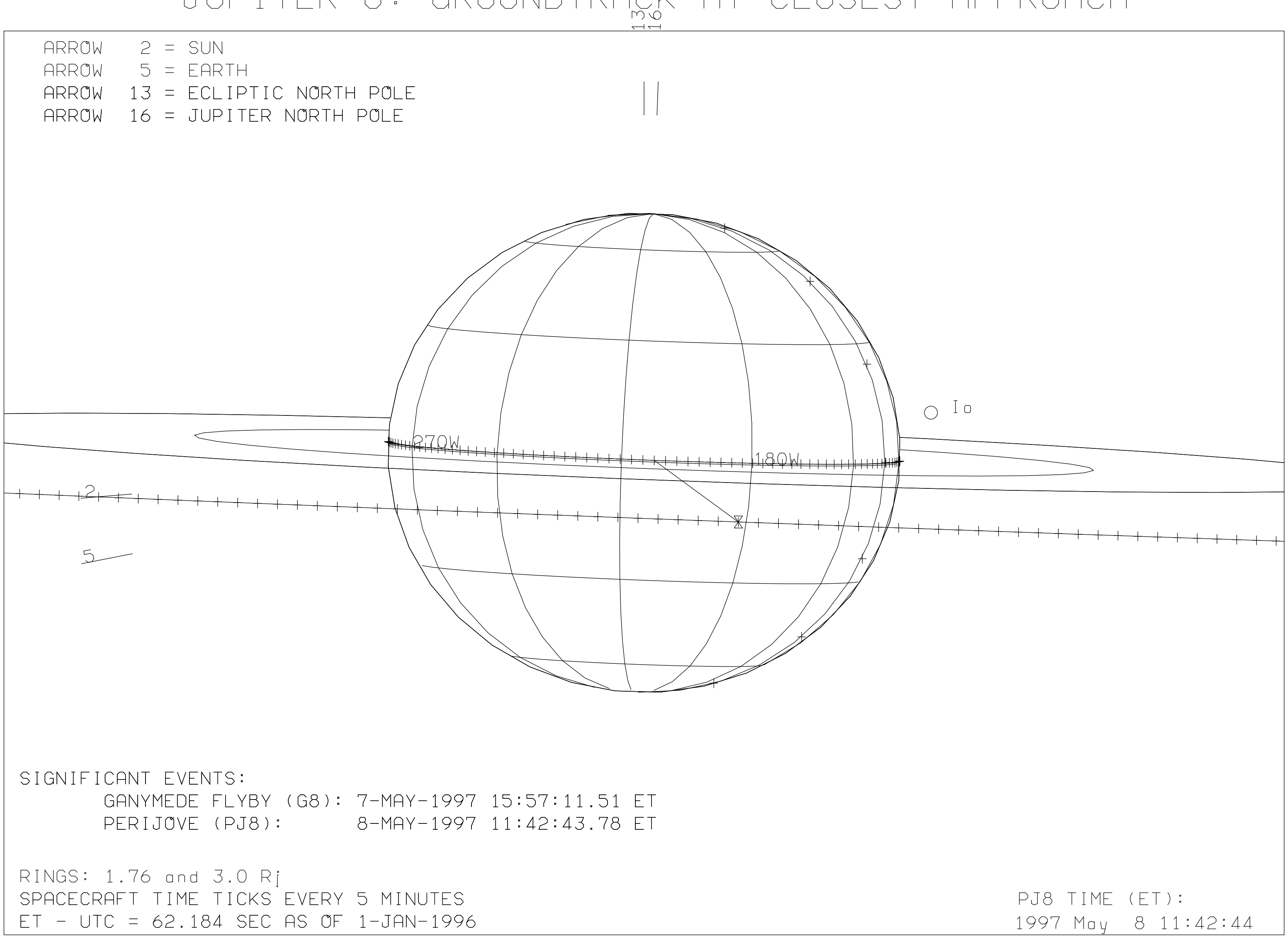
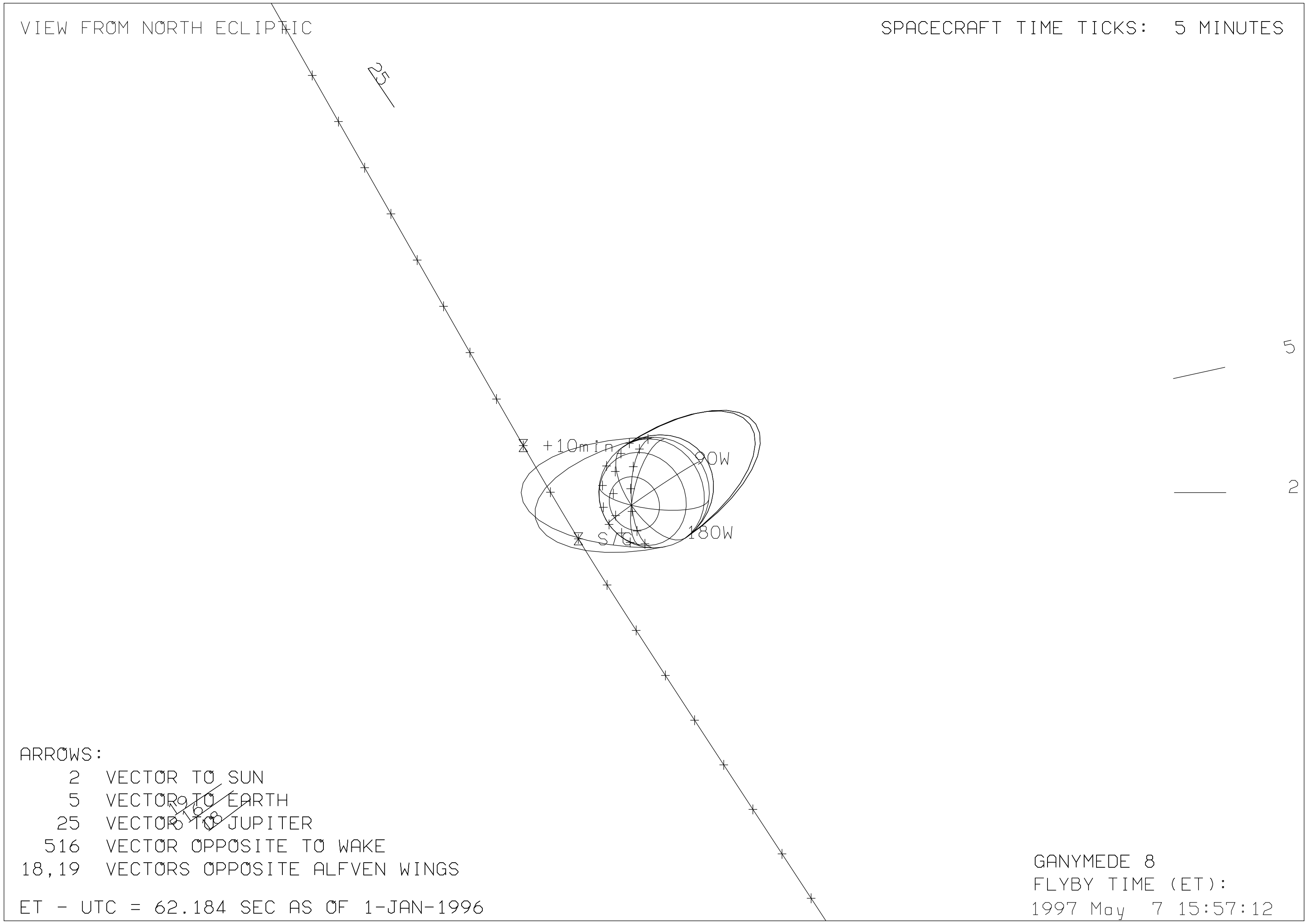
JRJ 4/30/97

JUPITER 8: GROUNDTRACK AT CLOSEST APPROACH

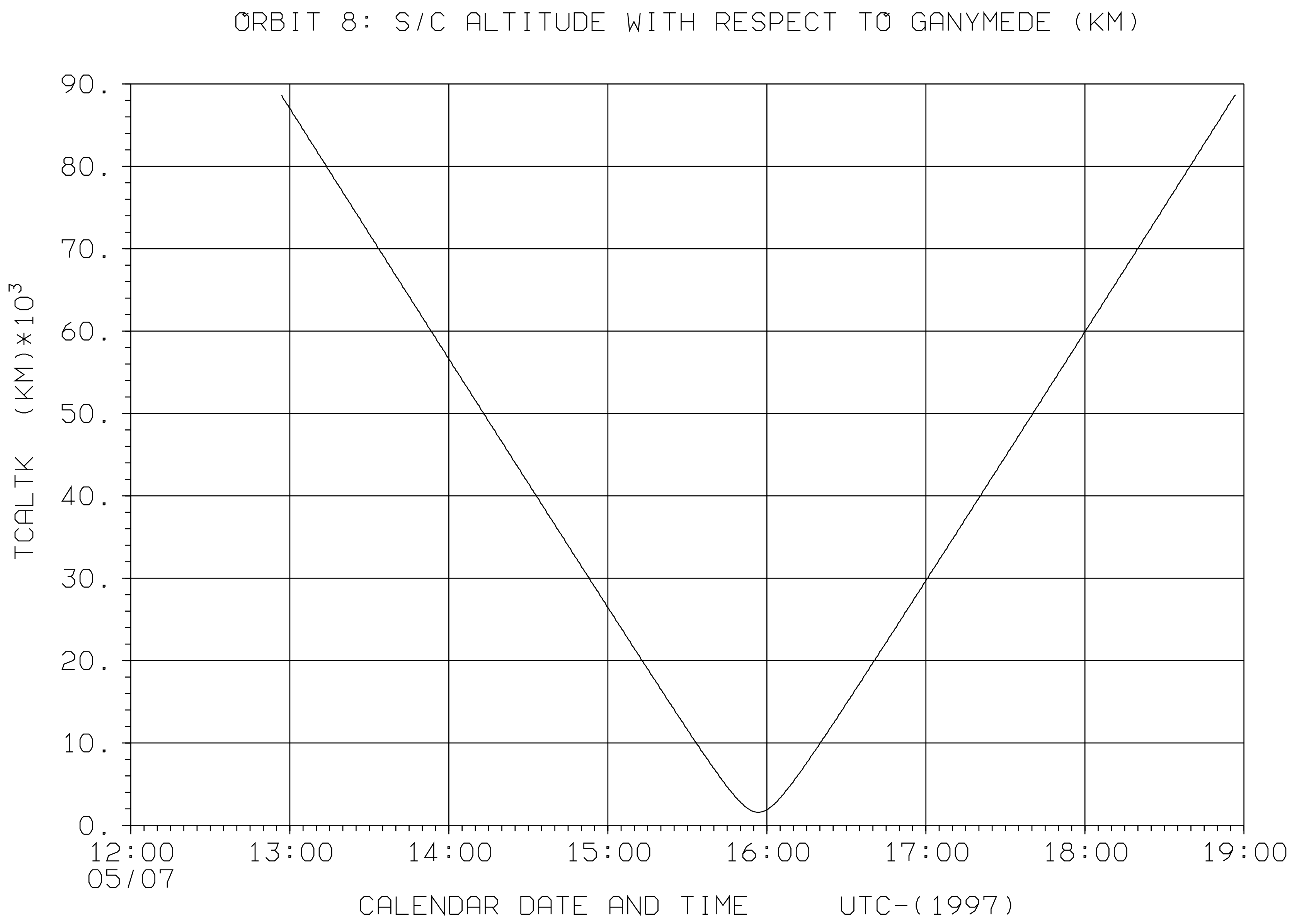


JRJ 4/30/97

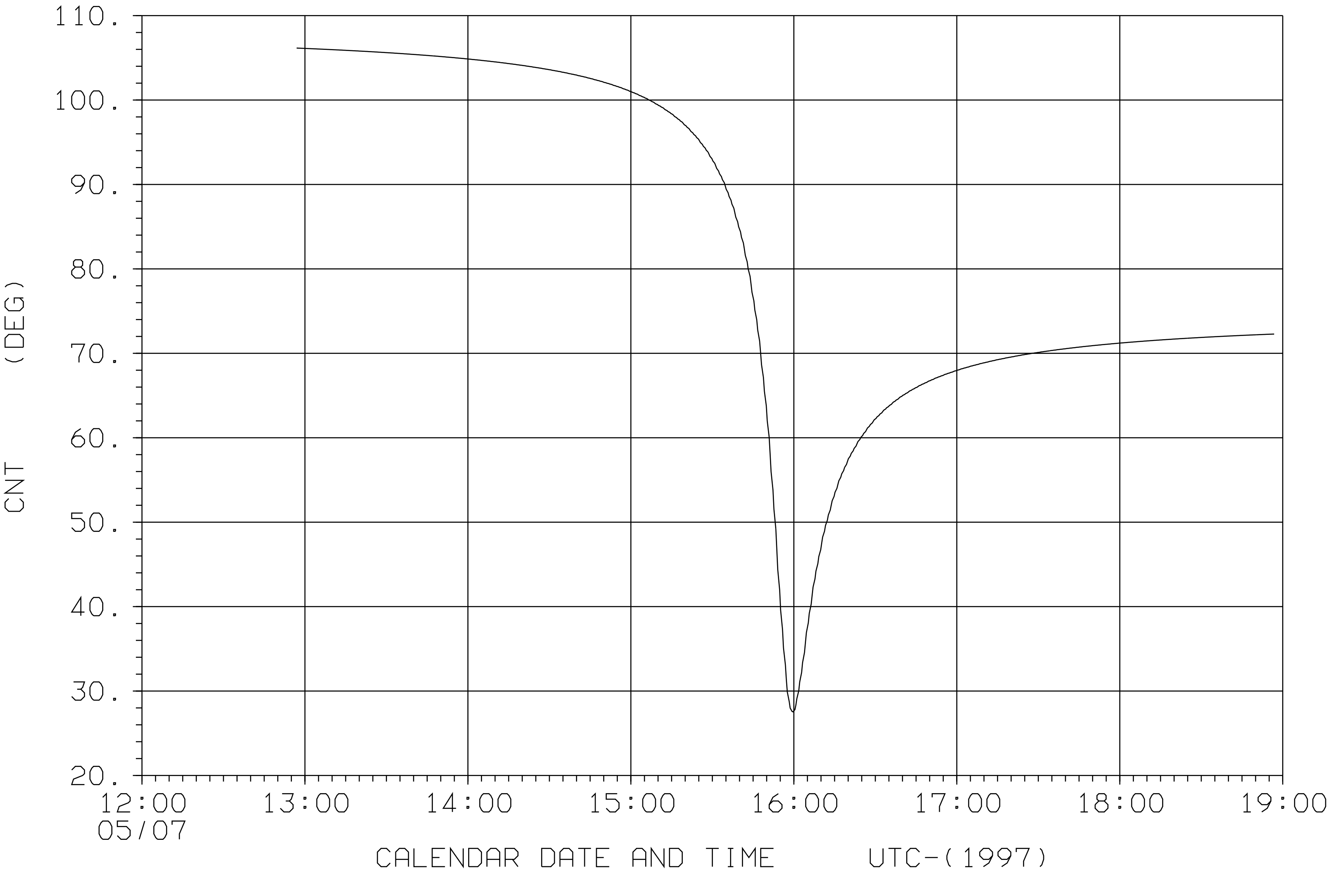
GANYMEDE 8: CLOSEST APPROACH (SOUTH TRAJ POLE VIEW)

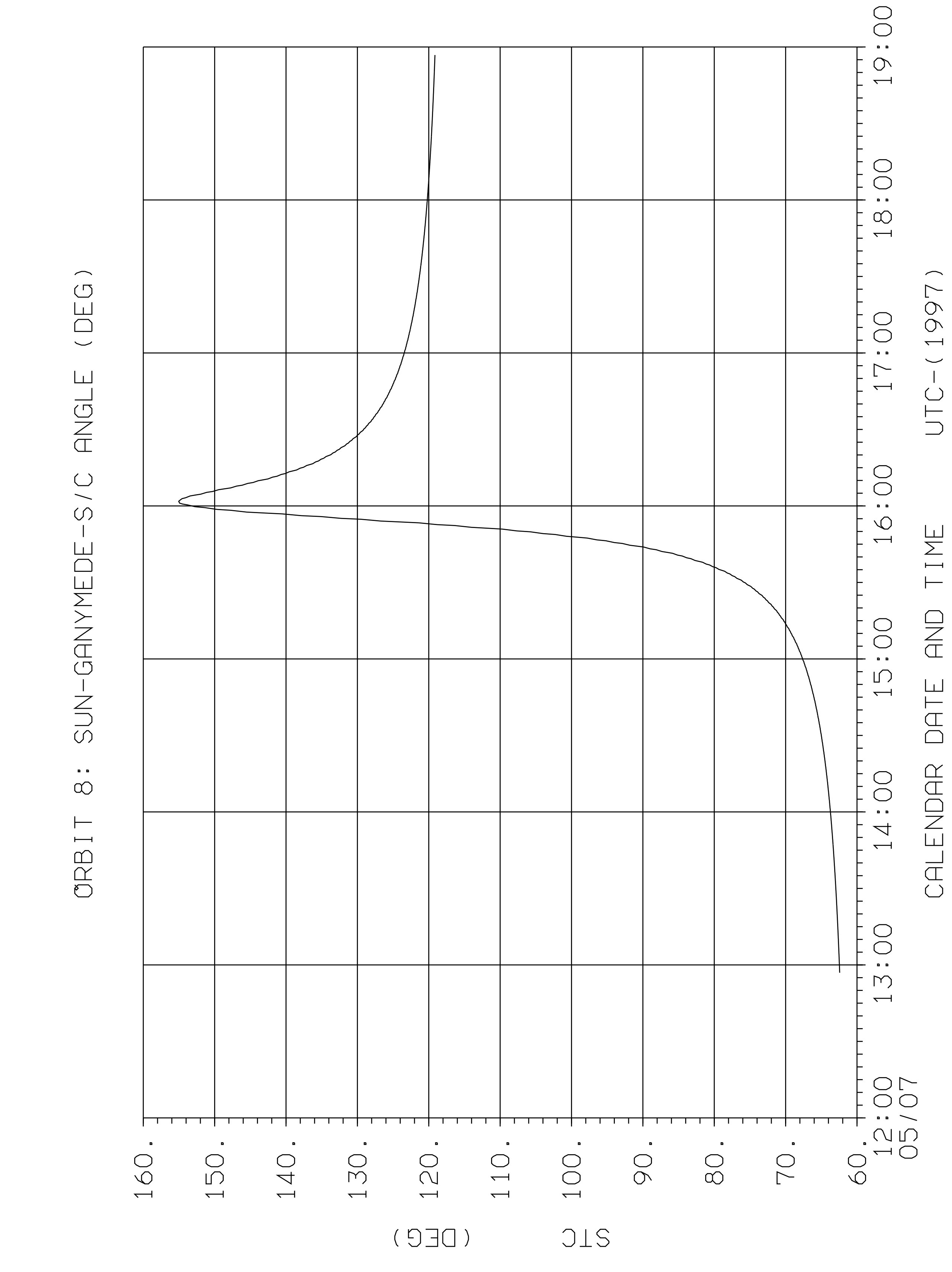


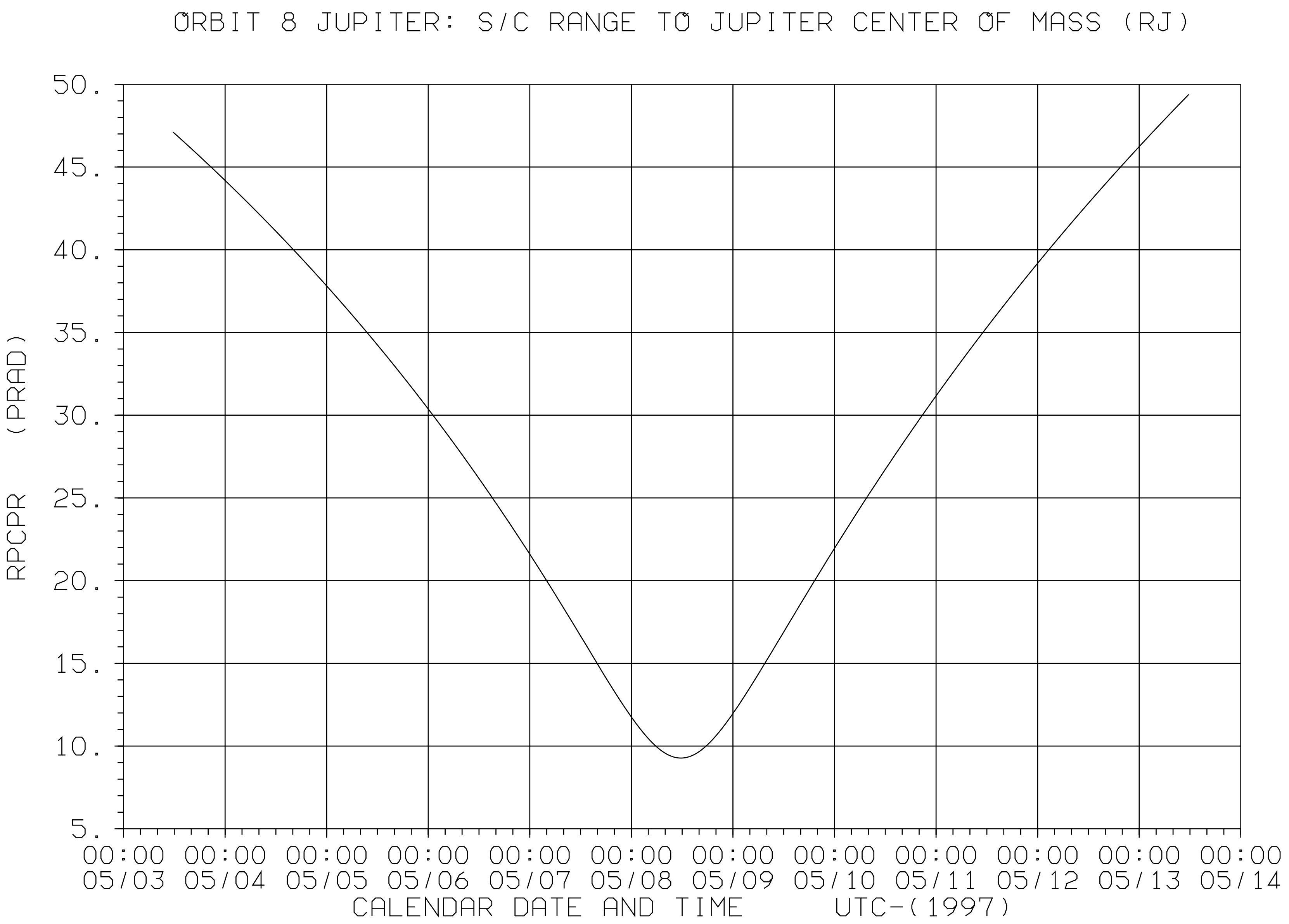
JRJ 4/30/97


ORBIT 8: S/C ALTITUDE WITH RESPECT TO GANYMEDE (KM)
TCALTK (KM)*10³
90.
80.
70.
60.
50.
40.
30.
20.
10.
0.
12:00
05/07
13:00
14:00
15:00
16:00
17:00
18:00
19:00
CALENDAR DATE AND TIME UTC-(1997)

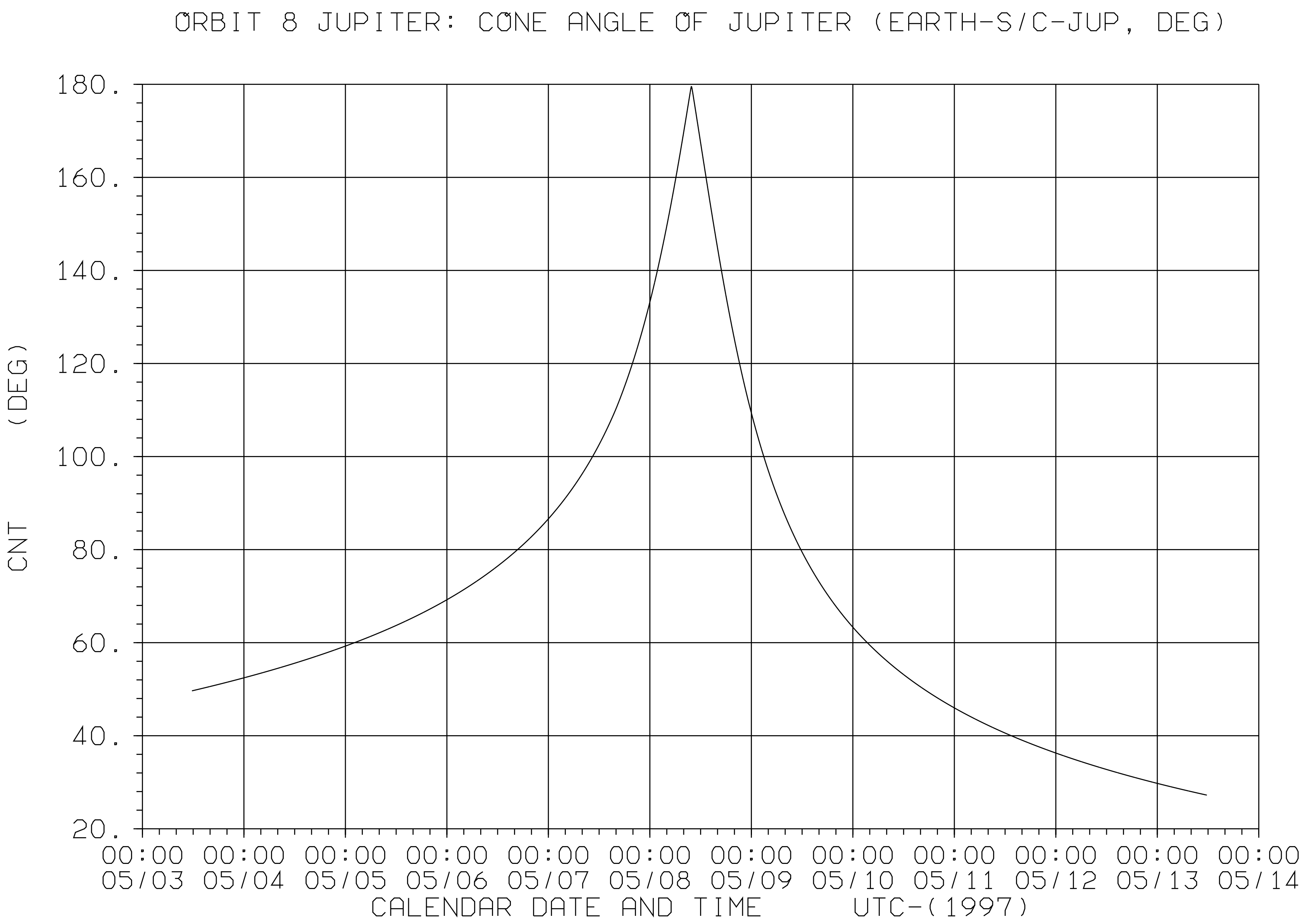
ORBIT 8: CONE ANGLE OF GANYMEDE (EARTH-S/C-GANYMEDE, DEG)




ØRBIT 8: SUN-GANYMEDE-S/C ANGLE (DEG)
STC (DEG)
160.
150.
140.
130.
120.
110.
100.
90.
80.
70.
60.
12:00
05/07
13:00
14:00
15:00
16:00
17:00
18:00
19:00
CALENDAR DATE AND TIME UTC-(1997)



ORBIT 8 JUPITER: S/C RANGE TO JUPITER CENTER OF MASS (RJ)
RPCPR (PRAD)
50.
45.
40.
35.
30.
25.
20.
15.
10.
5.
00:00 05/03
00:00 05/04
00:00 05/05
00:00 05/06
00:00 05/07
00:00 05/08
00:00 05/09
00:00 05/10
00:00 05/11
00:00 05/12
00:00 05/13
00:00 05/14
CALENDAR DATE AND TIME UTC-(1997)


ORBIT 8 JUPITER: CONE ANGLE OF JUPITER (EARTH-S/C-JUP, DEG)
CNT (DEG)
180.
160.
140.
120.
100.
80.
60.
40.
20.
00:00 05/03
00:00 05/04
00:00 05/05
00:00 05/06
00:00 05/07
00:00 05/08
00:00 05/09
00:00 05/10
00:00 05/11
00:00 05/12
00:00 05/13
00:00 05/14
CALENDAR DATE AND TIME UTC-(1997)

ORBIT 8 JUPITER: SUN-JUPITER-S/C ANGLE (DEG)