Chapter 3 - Orbit Geometries

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Introduction to Chapter 3

This chapter contains diagrams of various aspects of geometry for the G2 Orbit.

The figure on page 3 is a North Trajectory Pole View of the G2 Orbit from apoapsis to apoapsis.

The figure on page 4 is a North Trajectory Pole View of the G2 Orbit from +/- 5 days of Ganymede closest approach.

The figure on page 5 is a North Trajectory Pole View of the G2 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 North Trajectory Pole View of the G2 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).

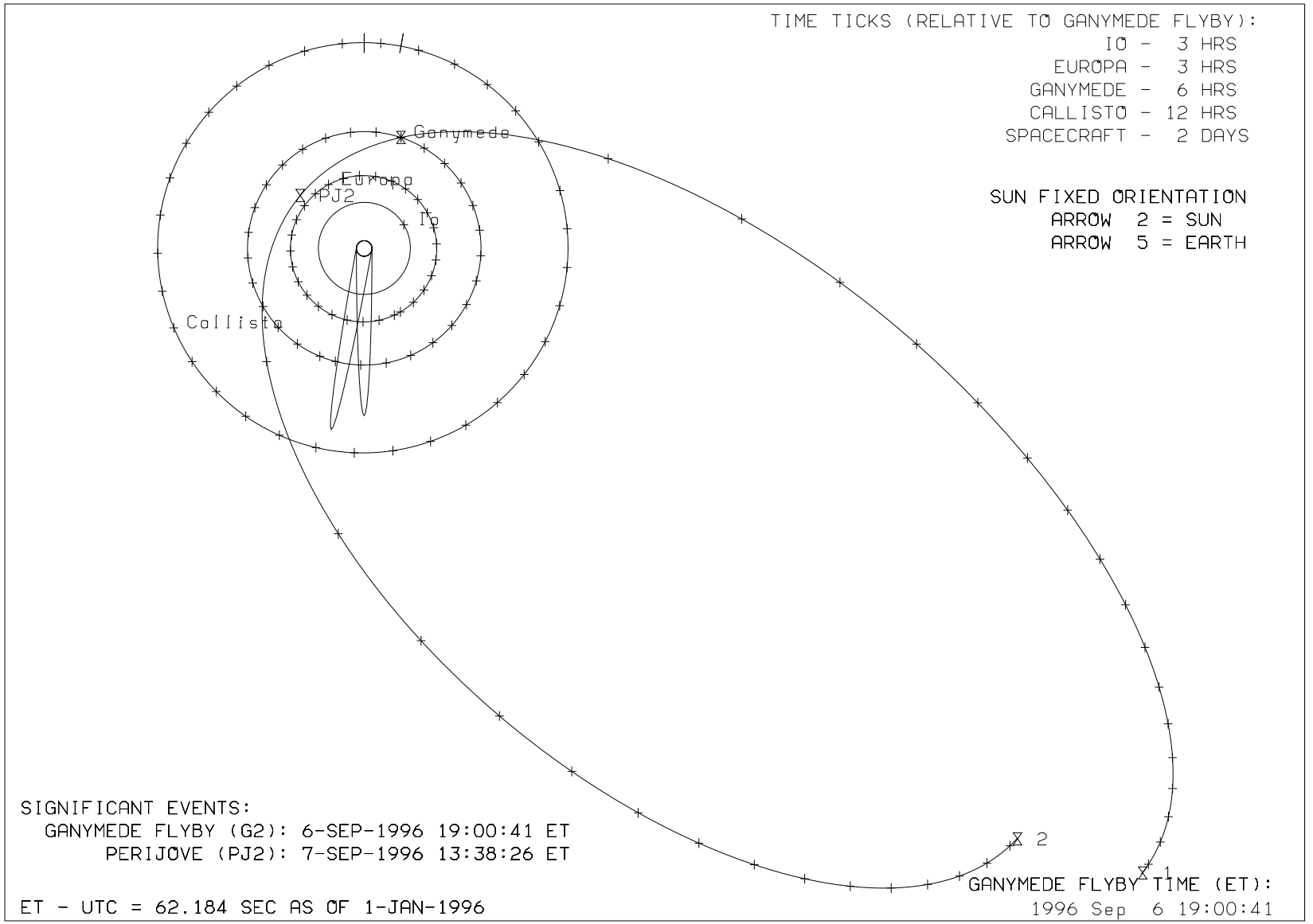
The figure on page 11 shows the Sun-Ganymede-S/C Angle (deg).

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

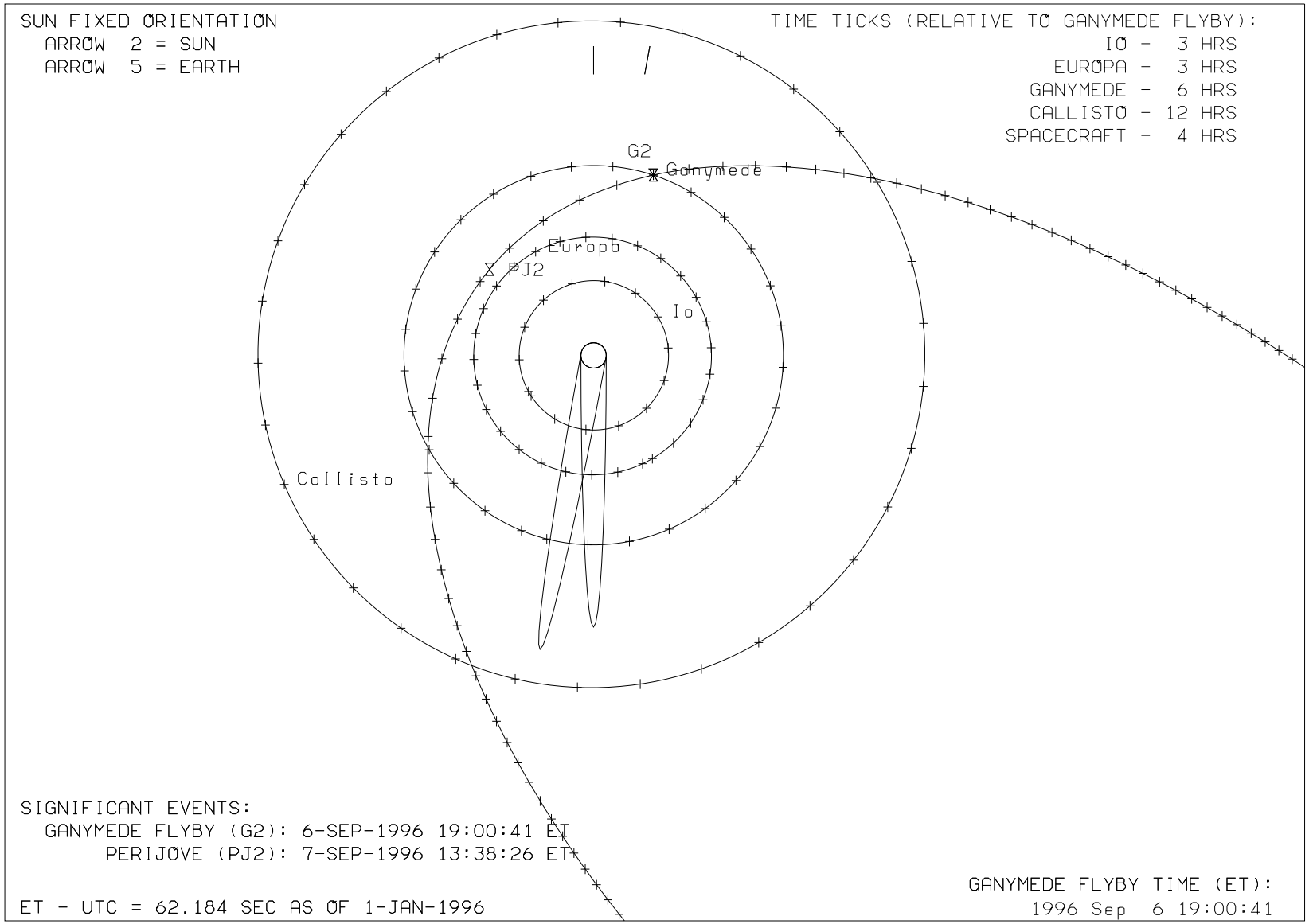
The figure on page 13 shows the cone angle of Jupiter (Earth - S/C - Jupiter, deg).

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

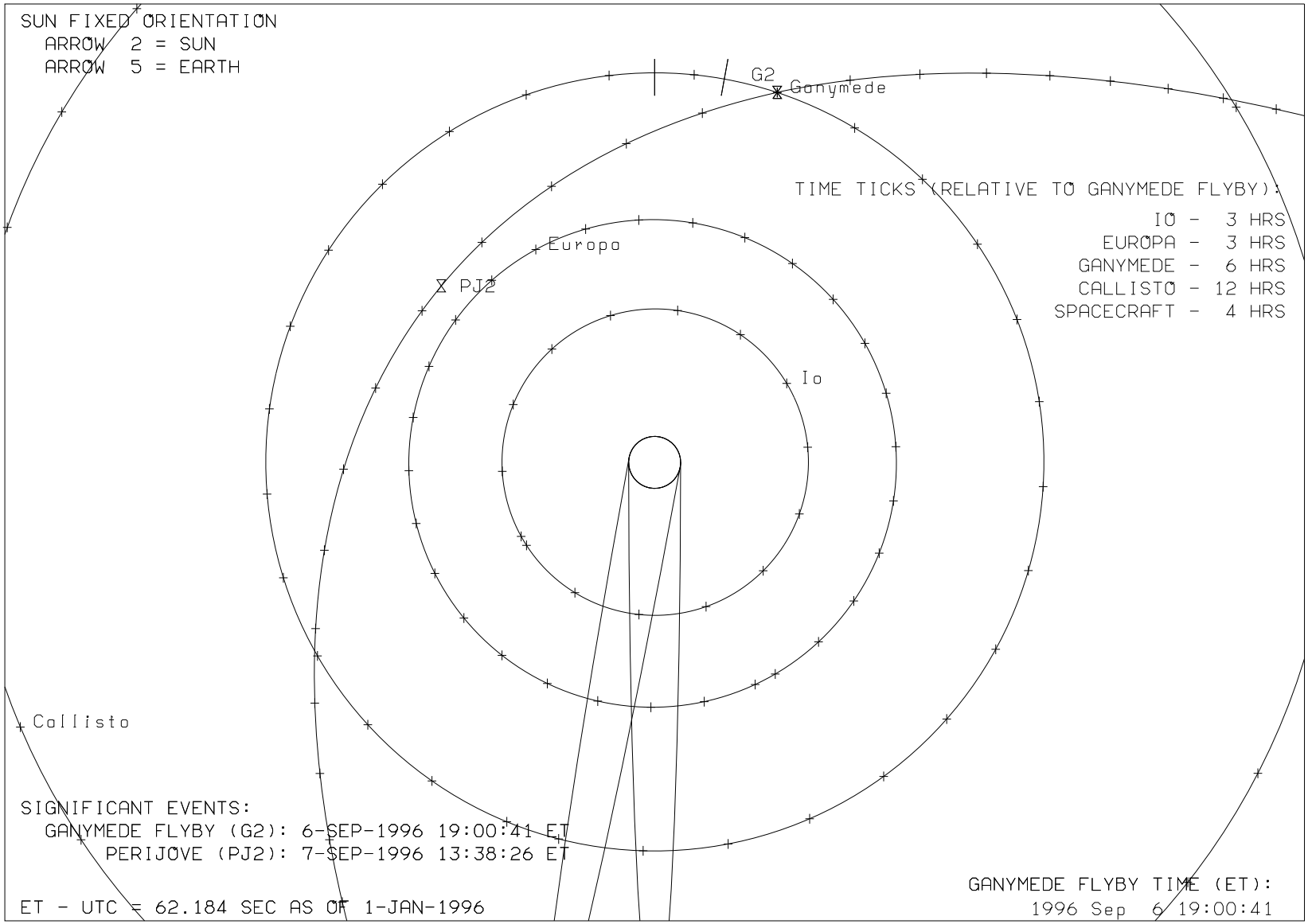
Jupiter 2: North Trajectory Pole View (G2 Apo to Apo)



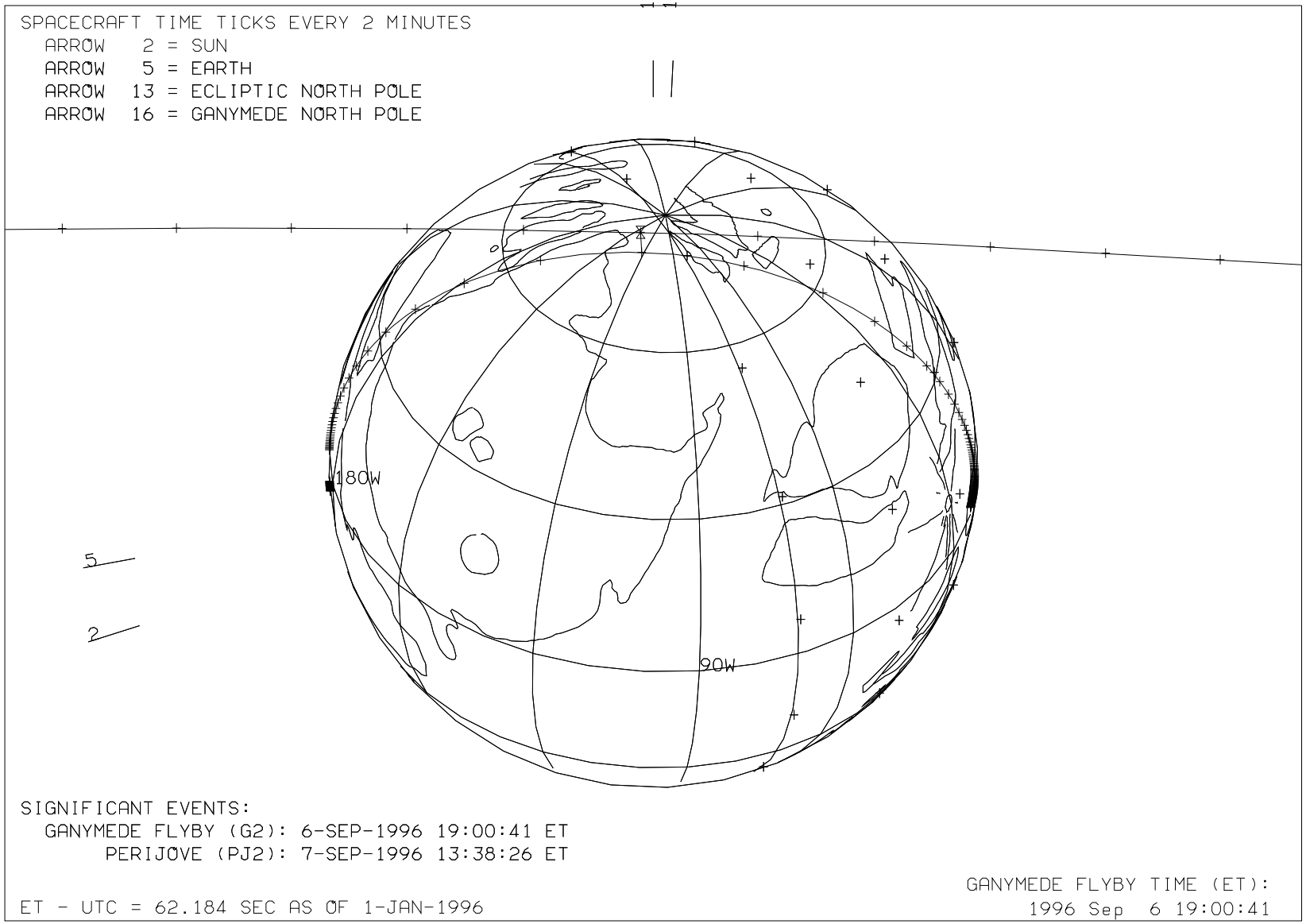
Jupiter 2: North Trajectory Pole View (G2 +/- 5 days)



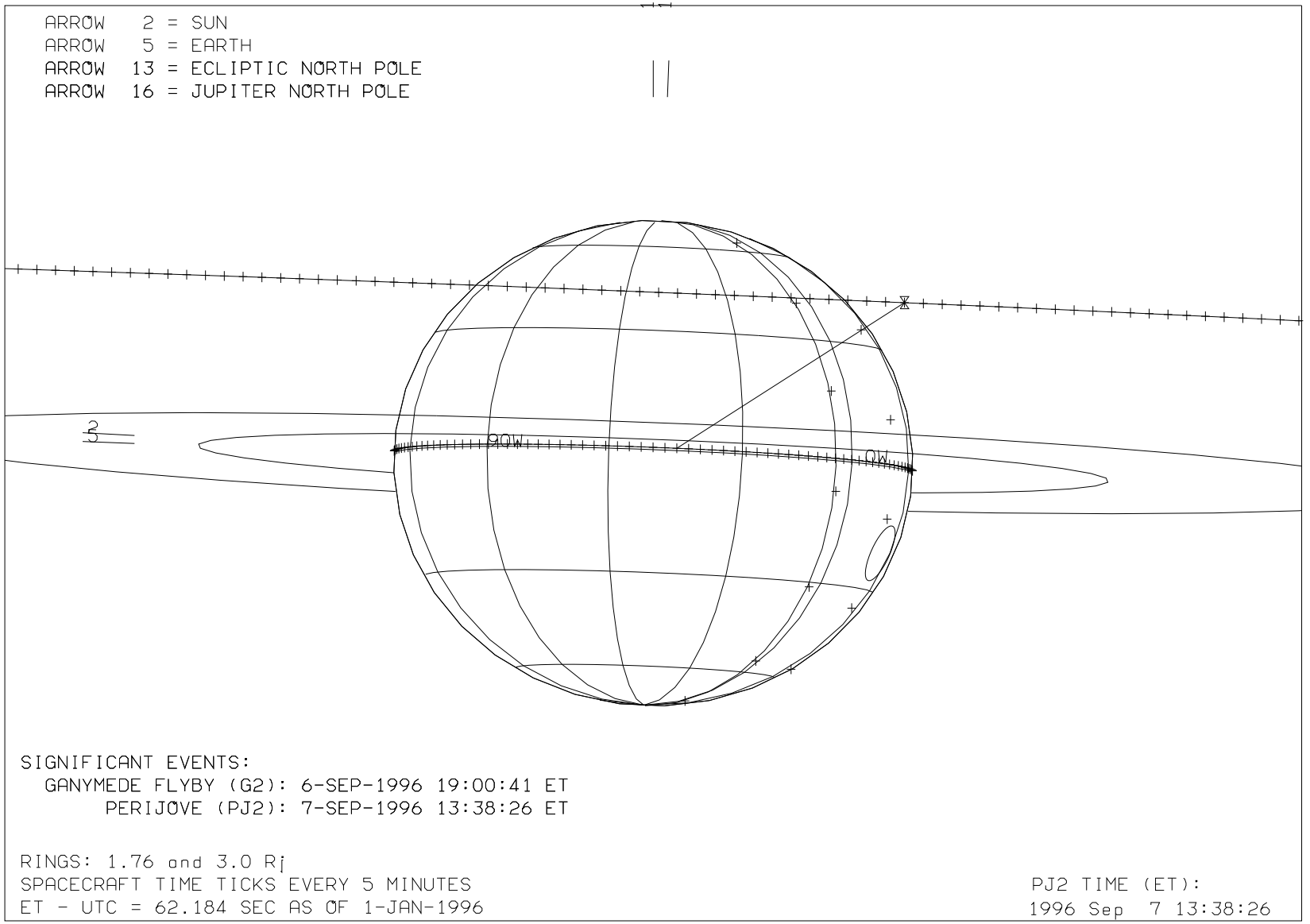
Jupiter 2: North Trajectory Pole View (G2 +/- 1 day)



GANYMEDE 2: GROUNDTRACK AT CLOSEST APPROACH



JUPITER 2: GROUNDTRACK AT CLOSEST APPROACH

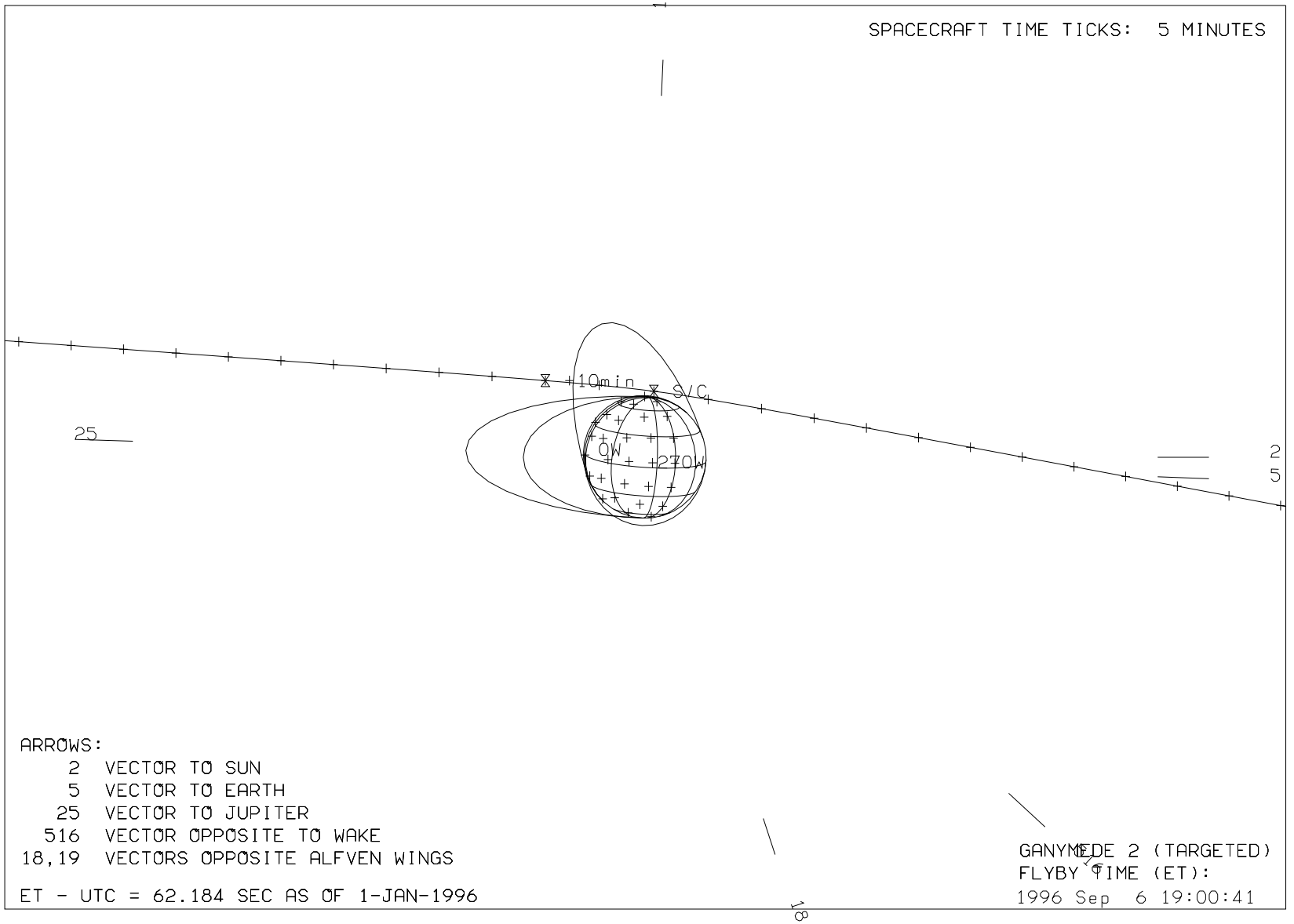


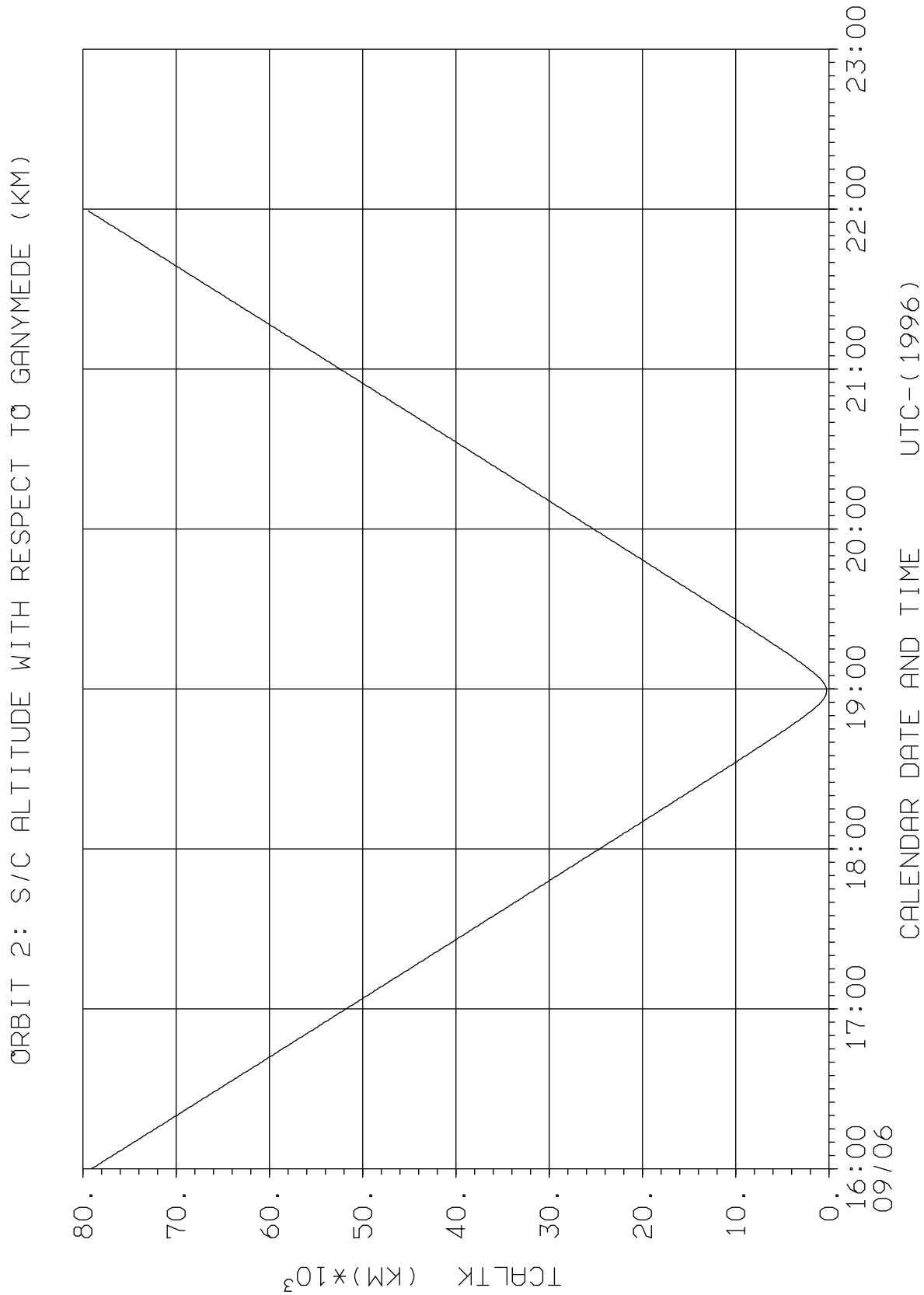
SIGNIFICANT EVENTS:
GANYMEDE FLYBY (G2): 6-SEP-1996 19:00:41 ET
PERIJOVE (PJ2): 7-SEP-1996 13:38:26 ET

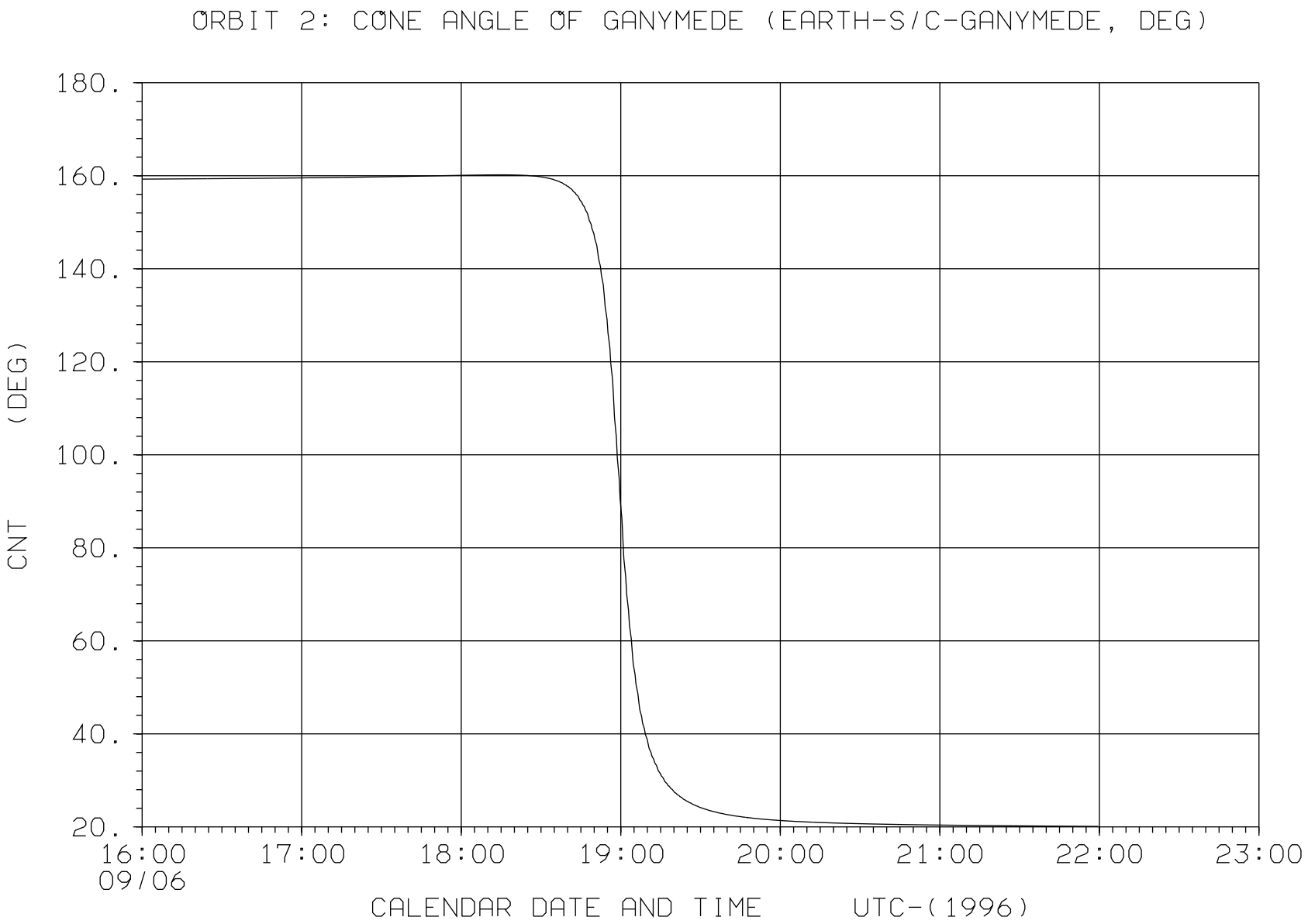
RINGS: 1.76 and 3.0 Rj
SPACECRAFT TIME TICKS EVERY 5 MINUTES
ET - UTC = 62.184 SEC AS OF 1-JAN-1996

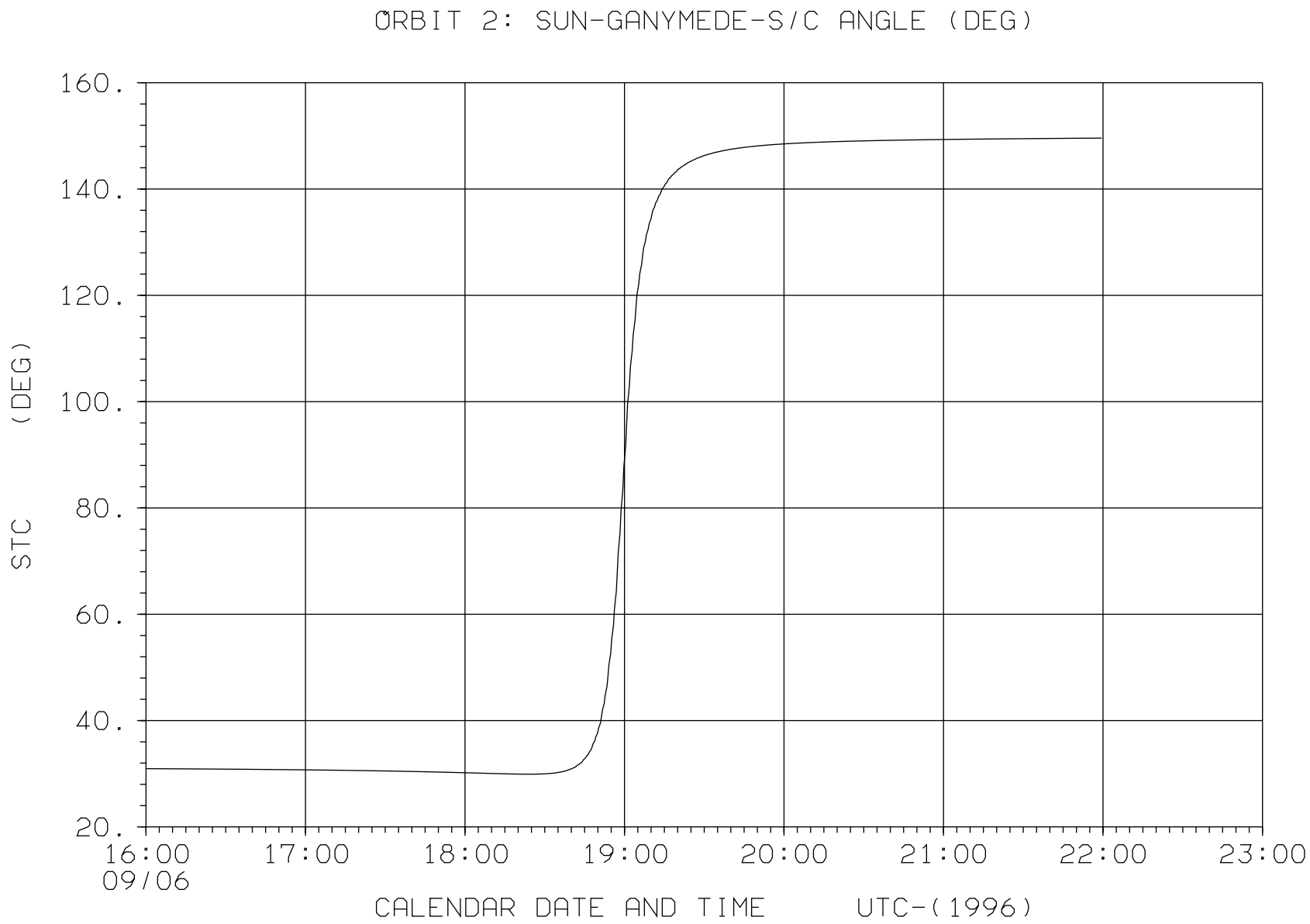
PJ2 TIME (ET):
1996 Sep 7 13:38:26

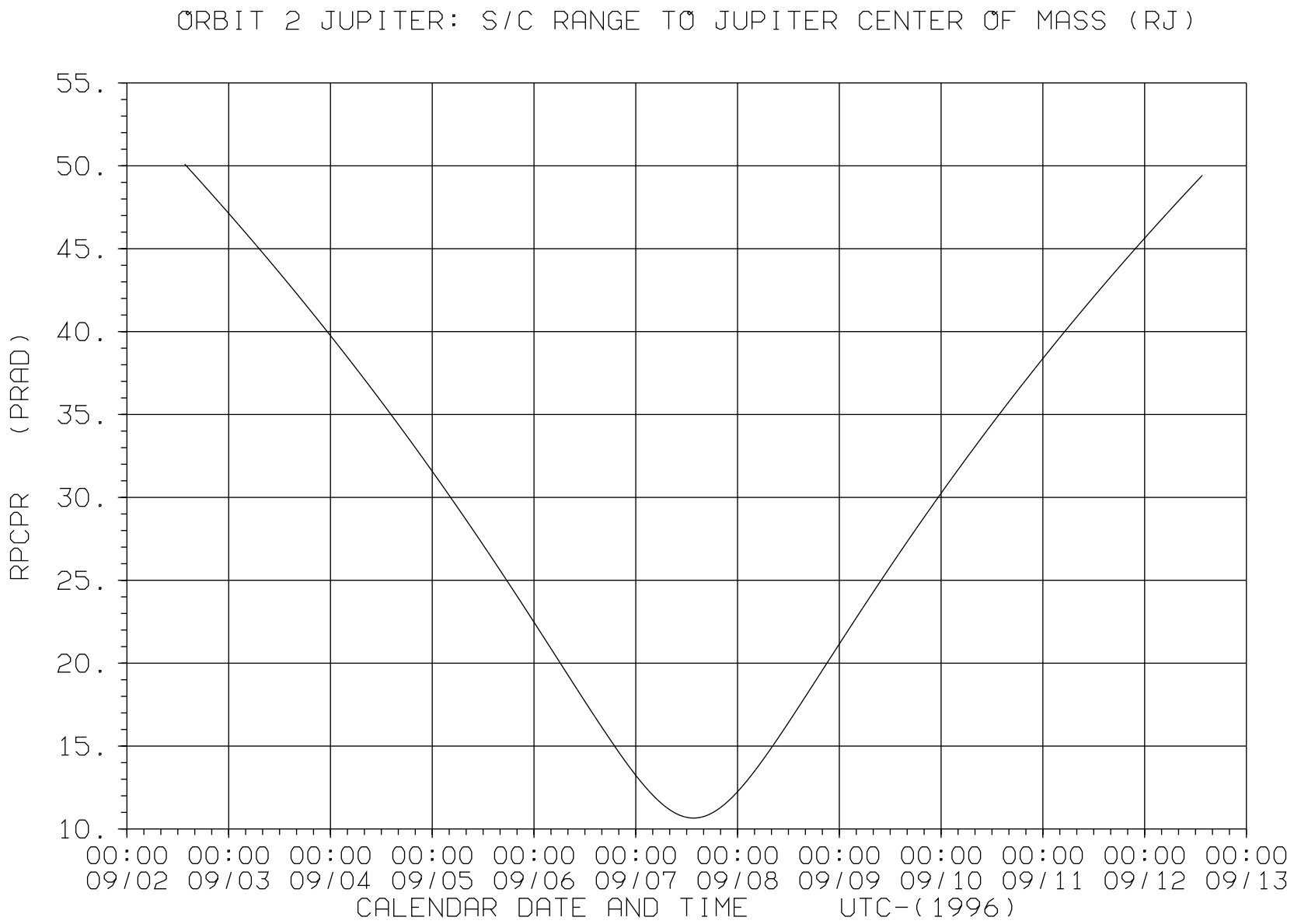
GANYMEDE 2: CLOSEST APPROACH (NORTH TRAJECTORY POLE VIEW)

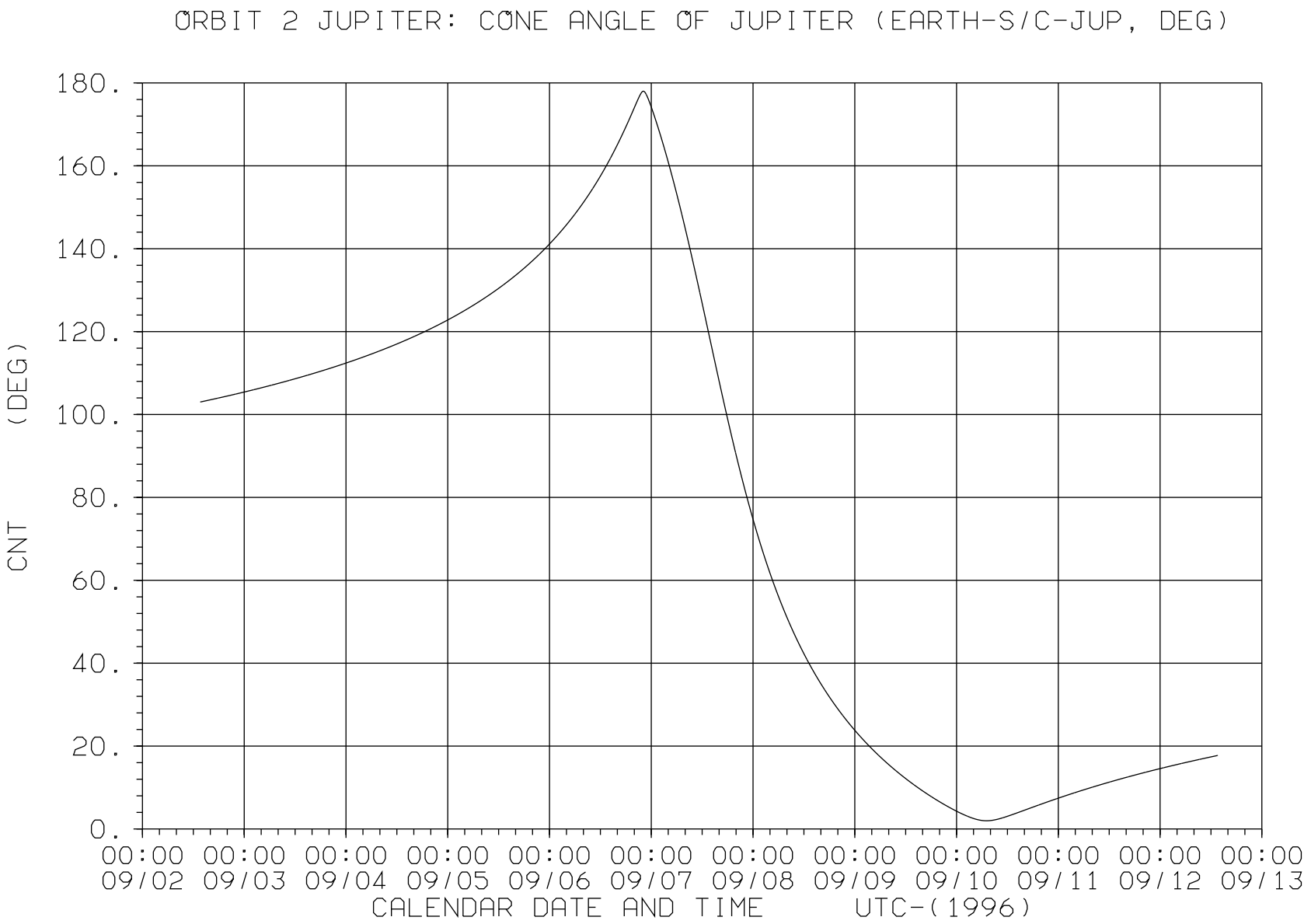


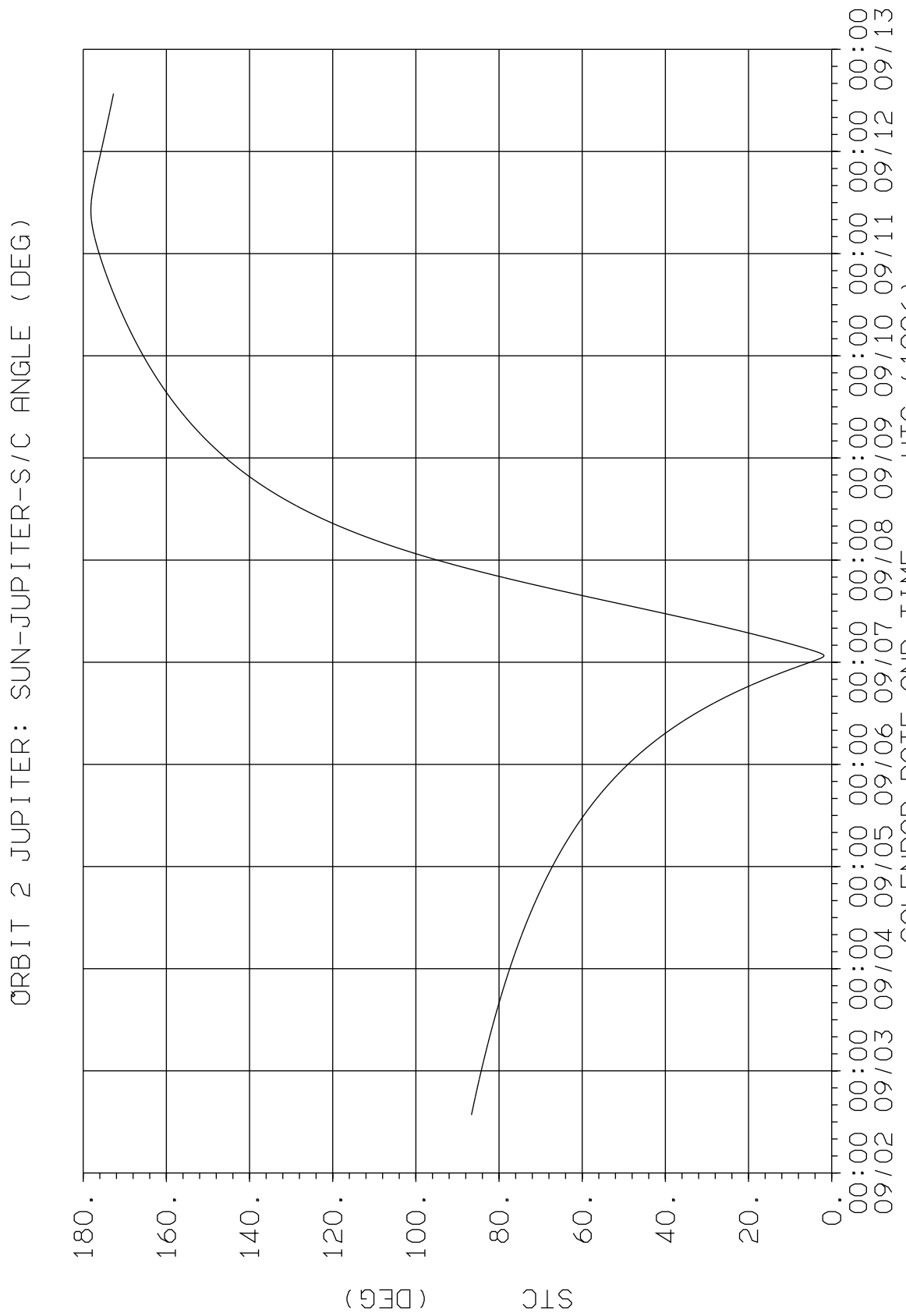

ORBIT 2: S/C ALTITUDE WITH RESPECT TO GANYMEDE (KM)
TCALTK (KM)*10³
80.
70.
60.
50.
40.
30.
20.
10.
0.
16:00
09/06
17:00
18:00
19:00
20:00
21:00
22:00
23:00
CALENDAR DATE AND TIME
UTC-(1996)


ORBIT 2: CONE ANGLE OF GANYMEDE (EARTH-S/C-GANYMEDE, DEG)
180.
160.
140.
120.
100.
80.
60.
40.
20.
CNT (DEG)
16:00
09/06
17:00
18:00
19:00
20:00
21:00
22:00
23:00
CALENDAR DATE AND TIME UTC-(1996)


ORBIT 2: SUN-GANYMEDE-S/C ANGLE (DEG)
160.
140.
120.
100.
80.
60.
40.
20.
STC (DEG)
16:00
09/06
17:00
18:00
19:00
20:00
21:00
22:00
23:00
CALENDAR DATE AND TIME UTC-(1996)


ORBIT 2 JUPITER: S/C RANGE TO JUPITER CENTER OF MASS (RJ)
RPCPR (PRAD)
55.
50.
45.
40.
35.
30.
25.
20.
15.
10.
00:00 09/02
00:00 09/03
00:00 09/04
00:00 09/05
00:00 09/06
00:00 09/07
00:00 09/08
00:00 09/09
00:00 09/10
00:00 09/11
00:00 09/12
00:00 09/13
CALENDAR DATE AND TIME UTC-(1996)


ORBIT 2 JUPITER: CONE ANGLE OF JUPITER (EARTH-S/C-JUP, DEG)
CNT (DEG)
180.
160.
140.
120.
100.
80.
60.
40.
20.
0.
00:00 09/02
00:00 09/03
00:00 09/04
00:00 09/05
00:00 09/06
00:00 09/07
00:00 09/08
00:00 09/09
00:00 09/10
00:00 09/11
00:00 09/12
00:00 09/13
CALENDAR DATE AND TIME UTC-(1996)


ORBIT 2 JUPITER: SUN-JUPITER-S/C ANGLE (DEG)
STC (DEG)
180.
160.
140.
120.
100.
80.
60.
40.
20.
0.
00:00 00:00 00:00 00:00 00:00 00:00 00:00 00:00 00:00 00:00 00:00
09/02 09/03 09/04 09/05 09/06 09/07 09/08 09/09 09/10 09/11 09/12 09/13
CALENDAR DATE AND TIME
UTC-(1996)