Chapter 3 - Orbit Geometries

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Introduction to Chapter 3

This chapter contains diagrams of various aspects of geometry for the C3 Orbit.

The figure on page 3 is a North Trajectory Pole View of the C3 Orbit from apoapsis to apoapsis.

The figure on page 4 is a North Trajectory Pole View of the C3 Orbit from +/- 5 days of Callisto closest approach.

The figure on page 5 is a North Trajectory Pole View of the C3 Orbit from +/- 1 day of Callisto closest approach.

The figure on page 6 shows the spacecraft's groundtrack on Callisto at Callisto 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 C3 Orbit from +/- 1 hour of Callisto closest approach.

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

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

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

The figure on page 12 shows spacecraft altitude with respect to Europa (km).

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

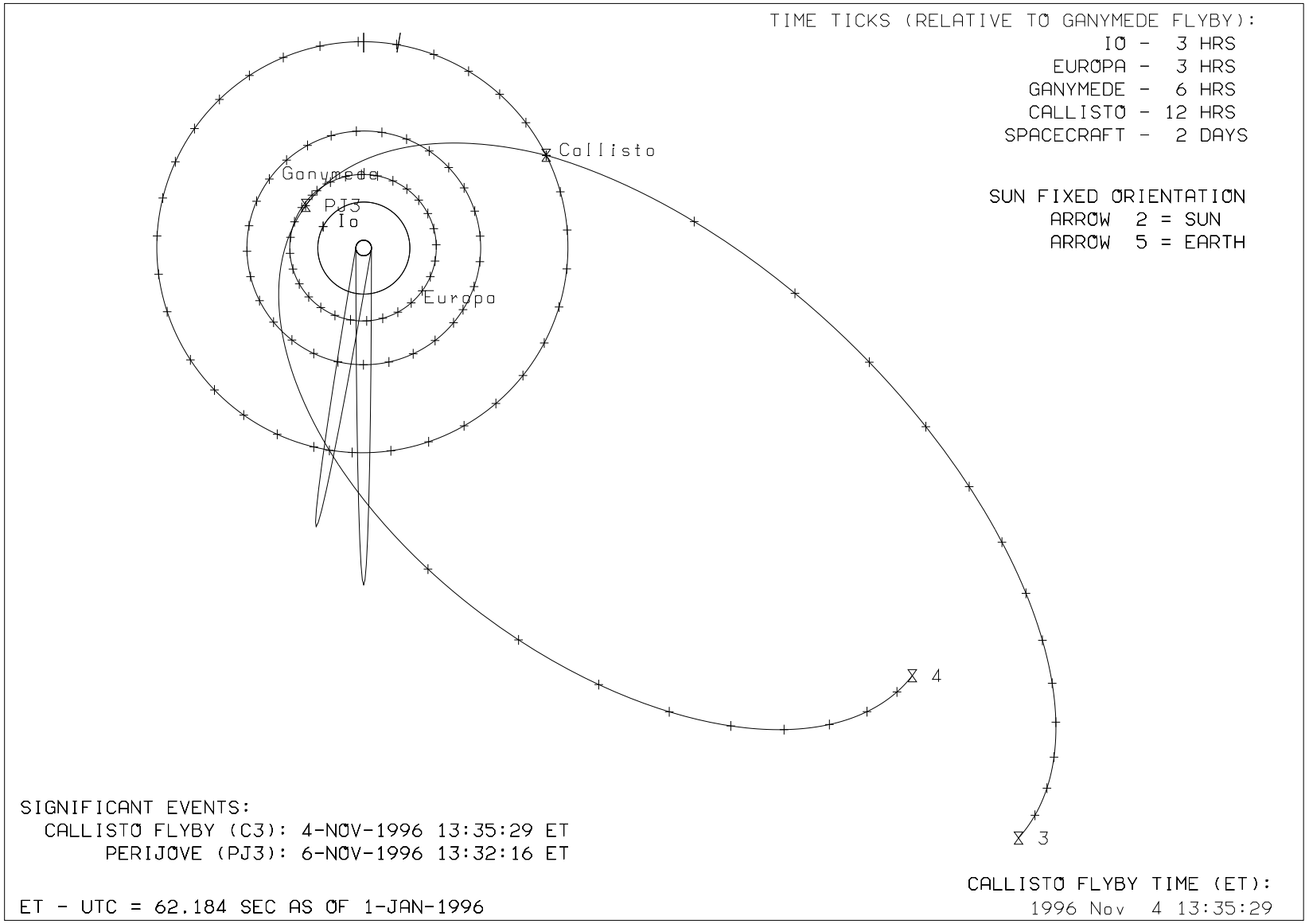
The figure on page 14 shows the Sun-Europa-S/C Angle (deg).

The figure on page 15 shows spacecraft range to Jupiter's center of mass (Rj).

The figure on page 16 shows the cone angle of Jupiter (Earth - S/C - Jupiter, deg).

The figure on page 17 shows the Sun-Jupiter-S/C Angle (deg).

Jupiter 3: North Trajectory Pole View (C3 Apo to Apo)



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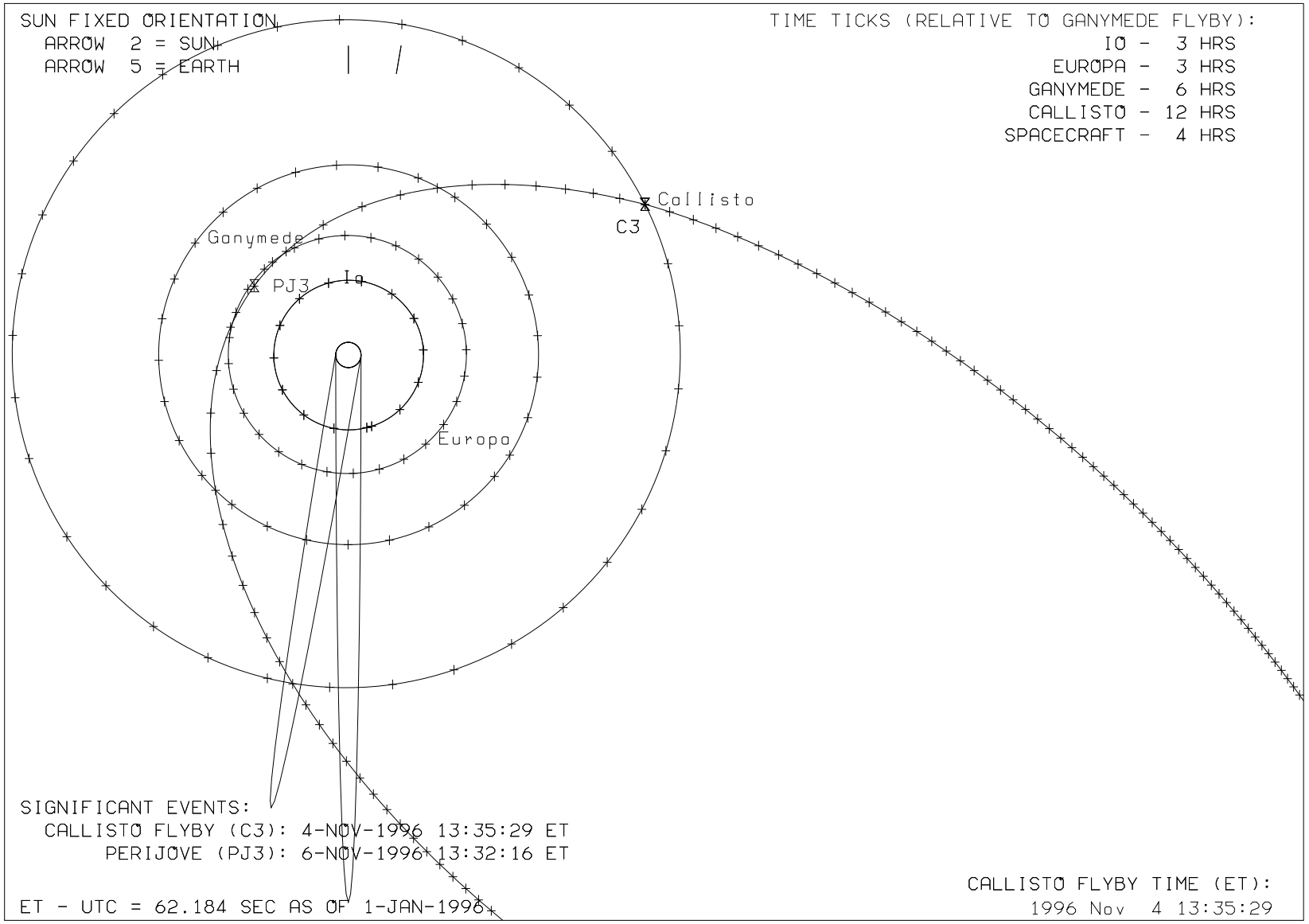
Jupiter 3: North Trajectory Pole View (C3 +/- 5 days)



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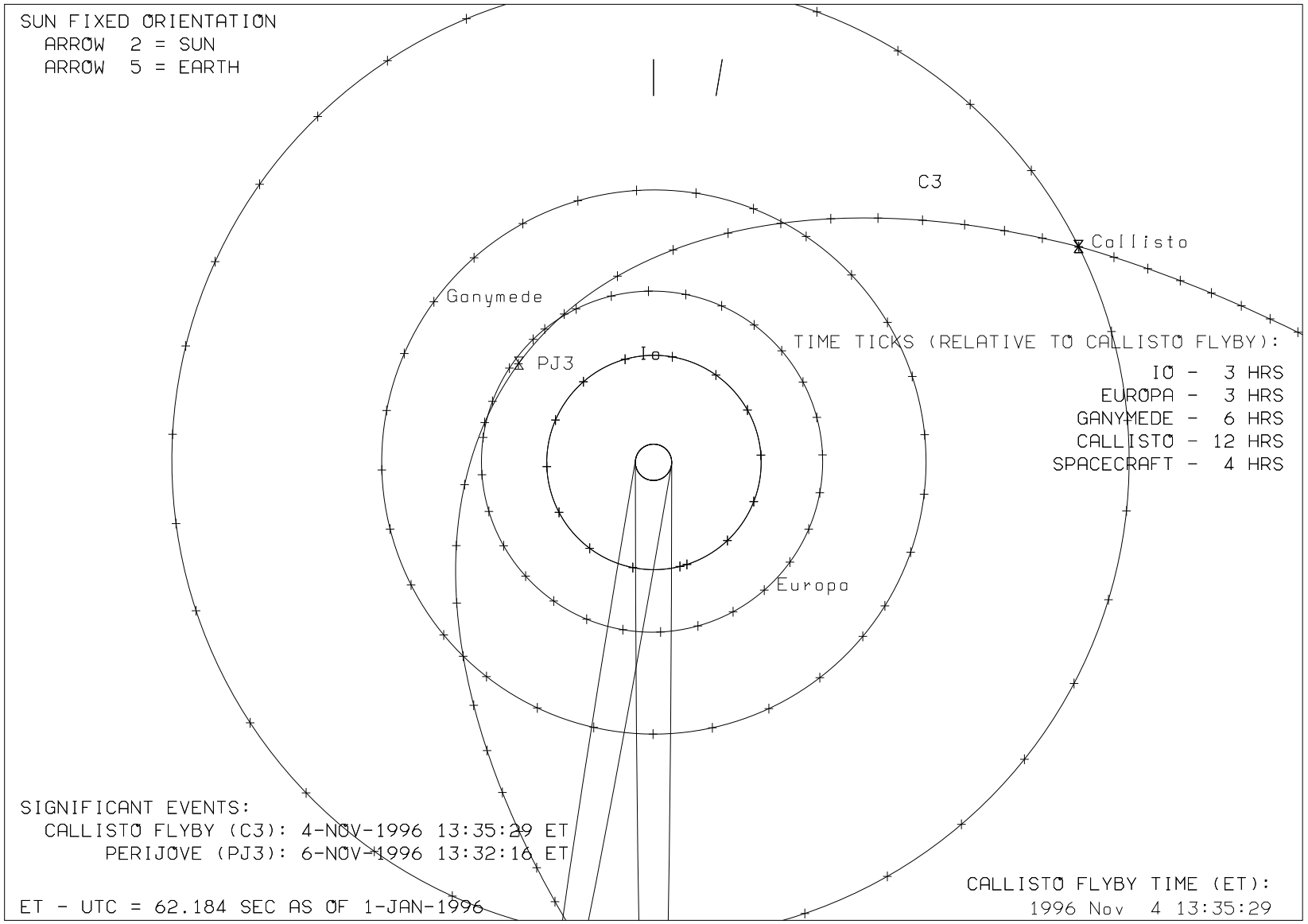
Jupiter 3: North Trajectory Pole View (C3 +/- 1 day)



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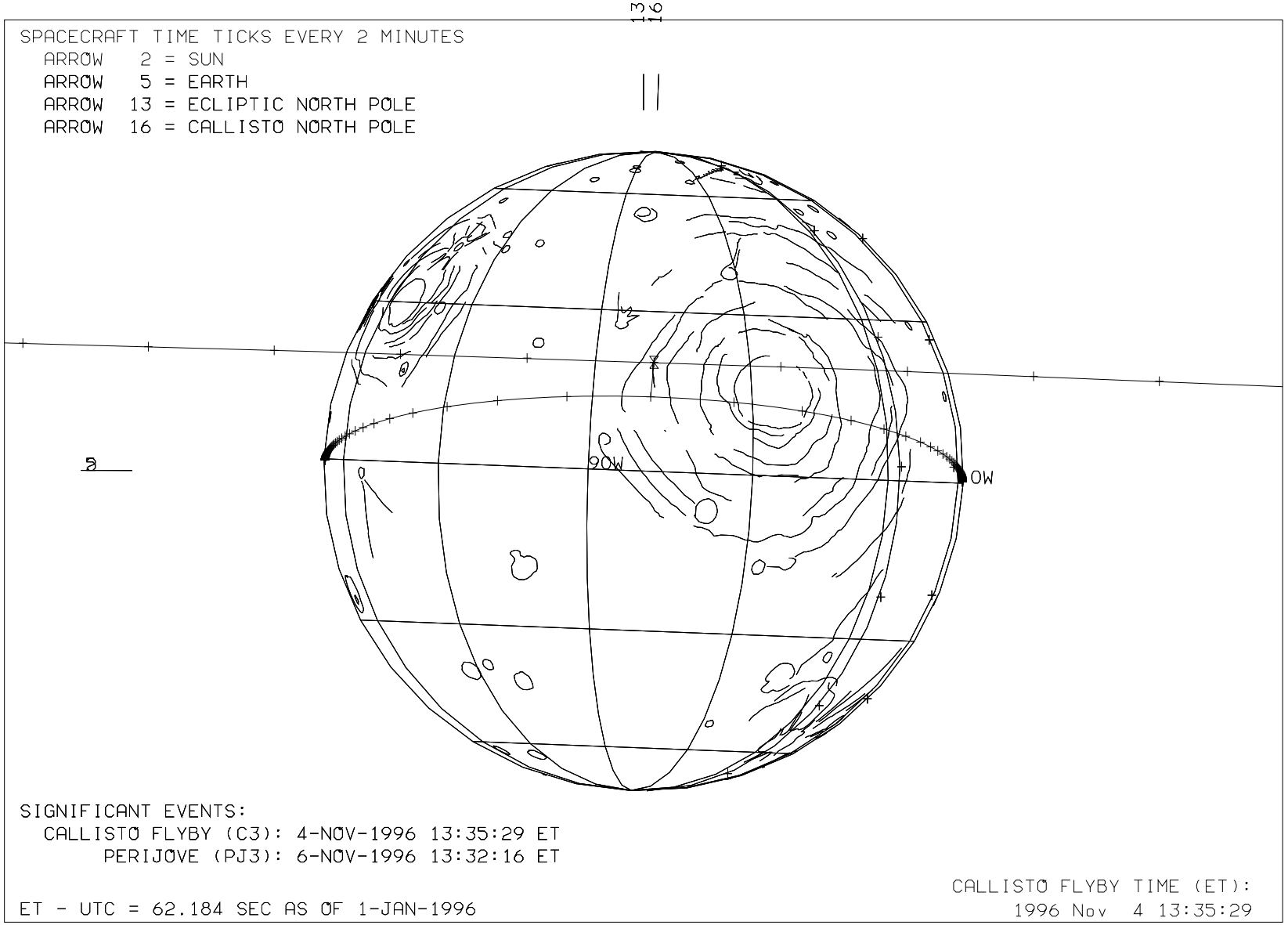
CALLISTO 3: GROUNDTRACK AT CLOSEST APPROACH



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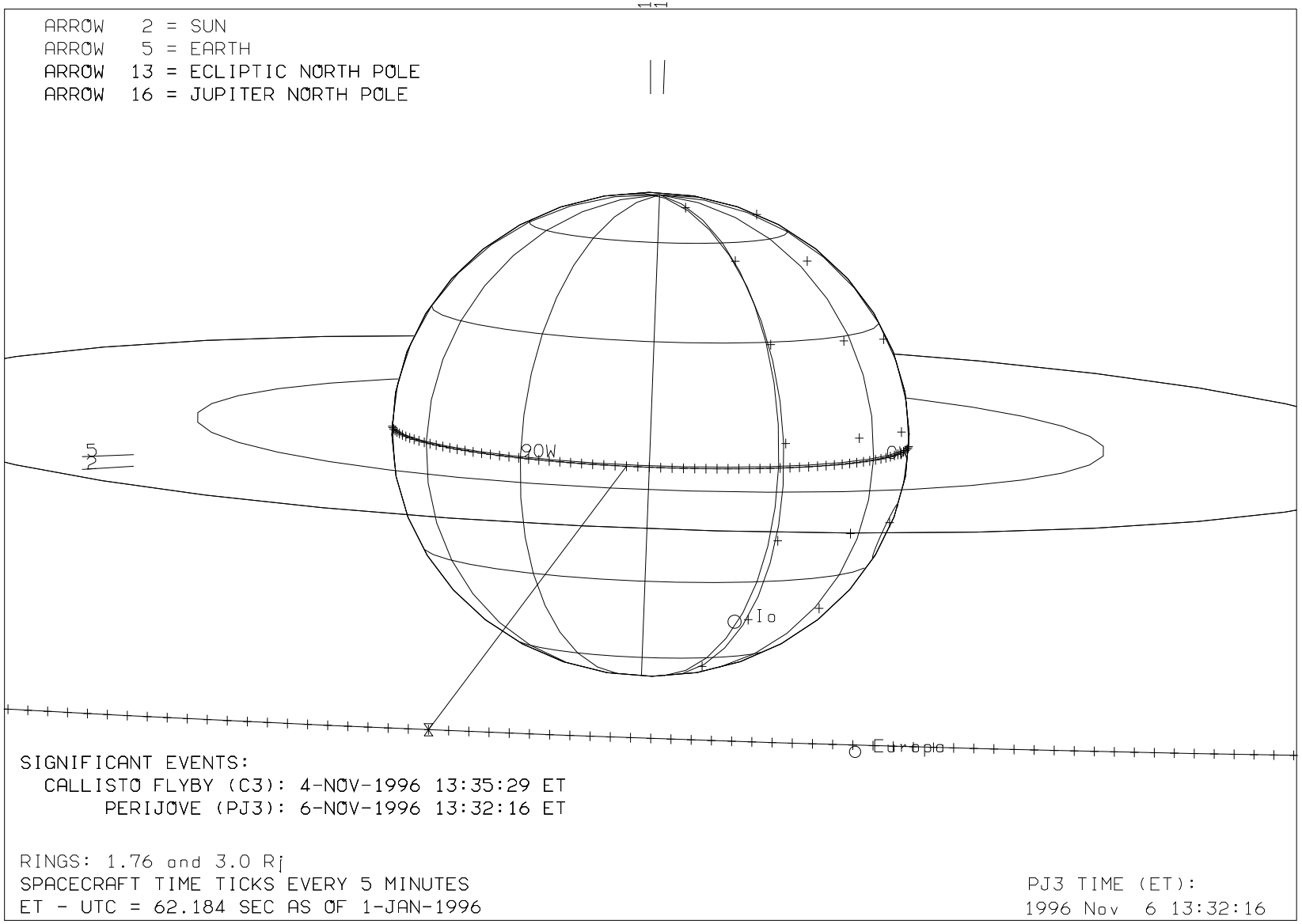
JUPITER 3: GROUNDTRACK AT CLOSEST APPROACH



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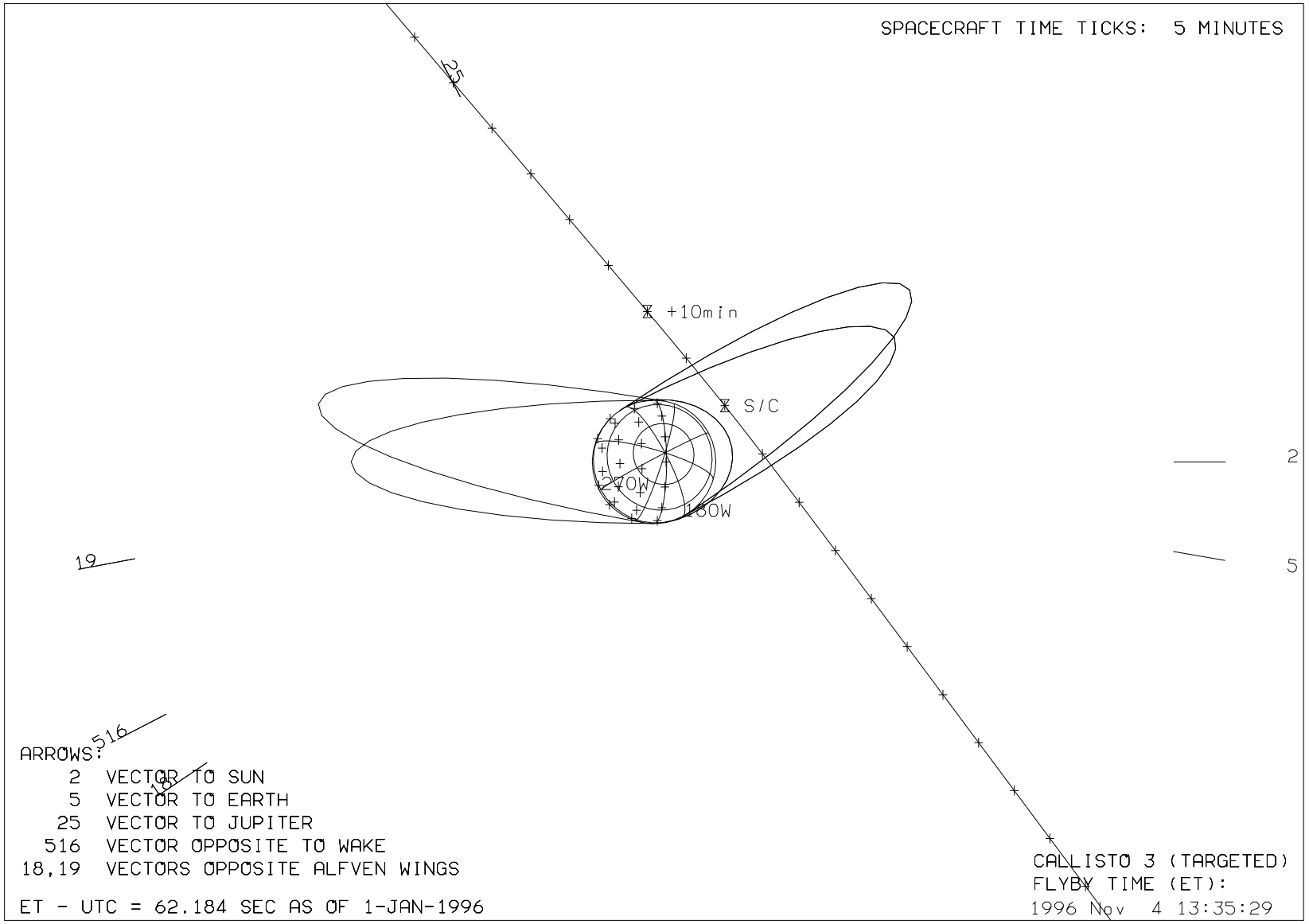
CALLISTO 3: CLOSEST APPROACH (NORTH TRAJECTORY POLE VIEW)



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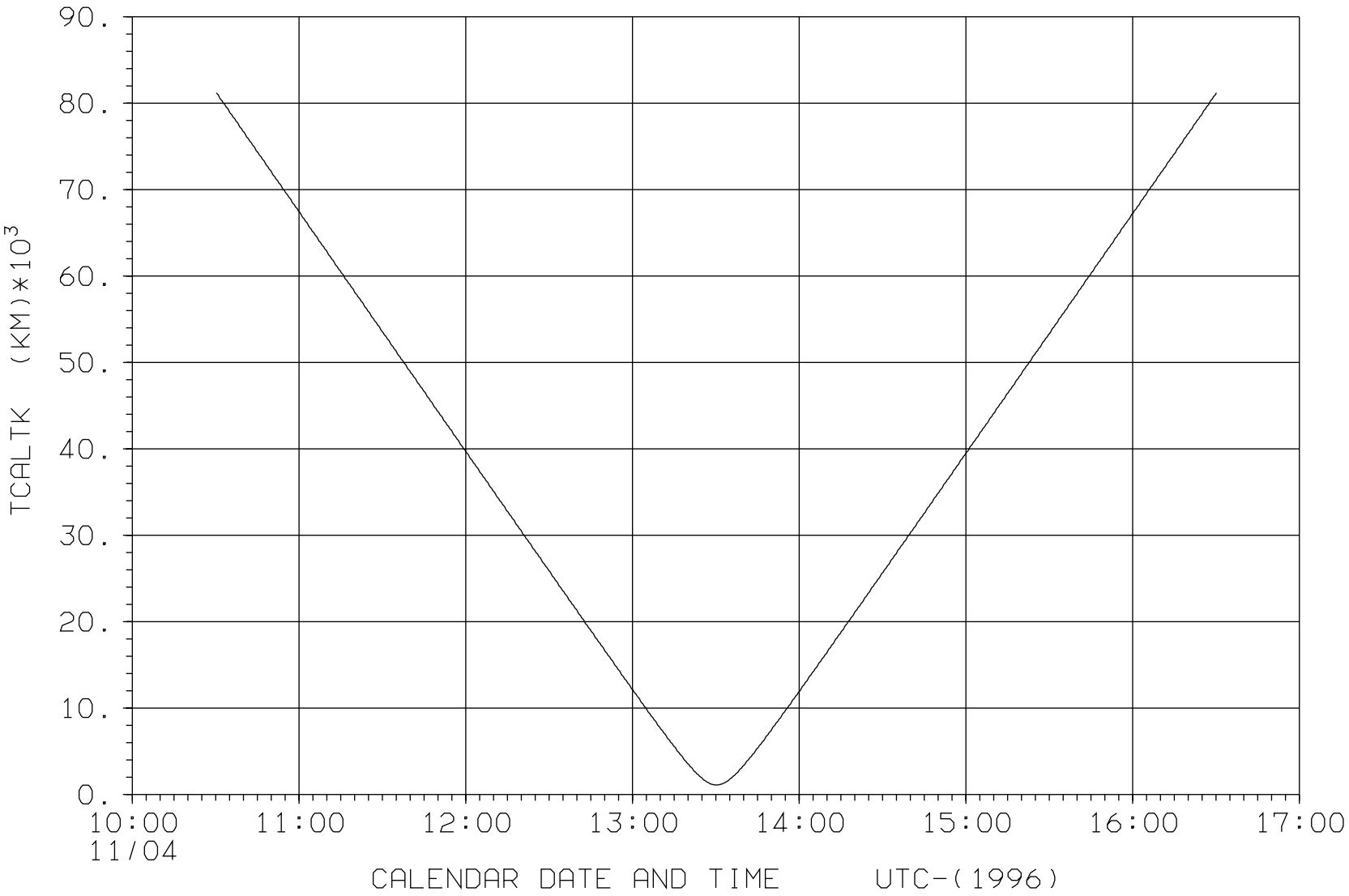
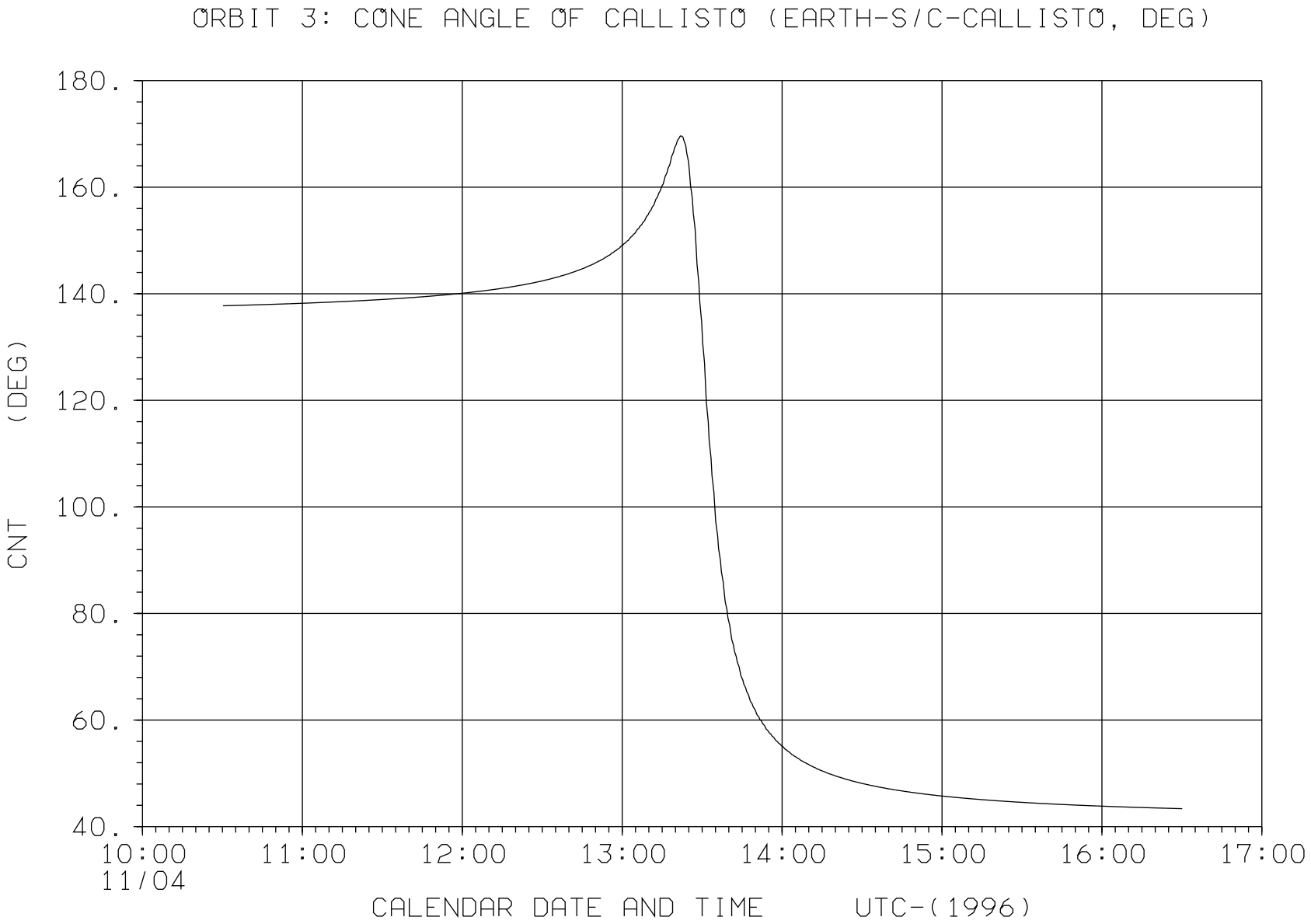
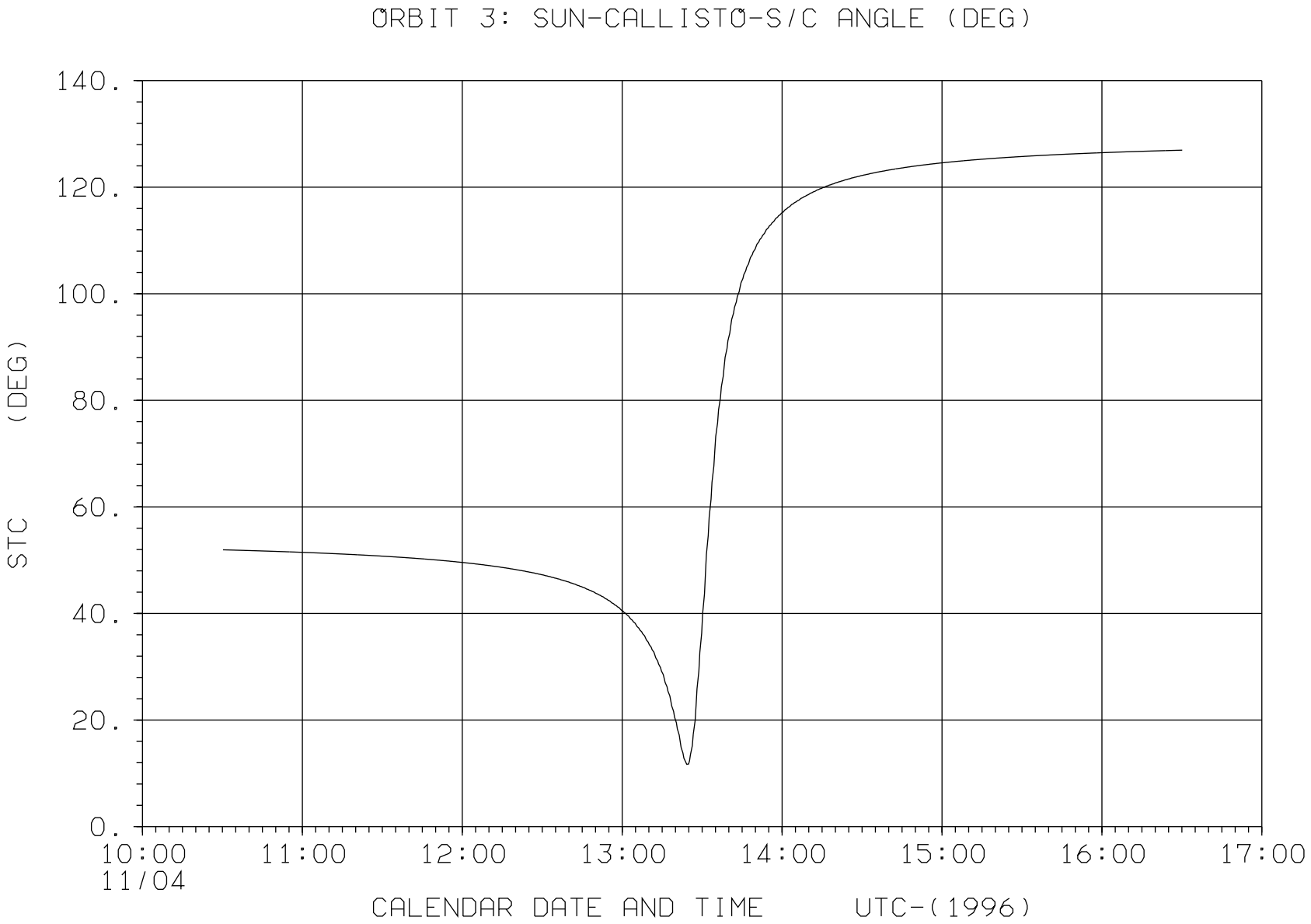
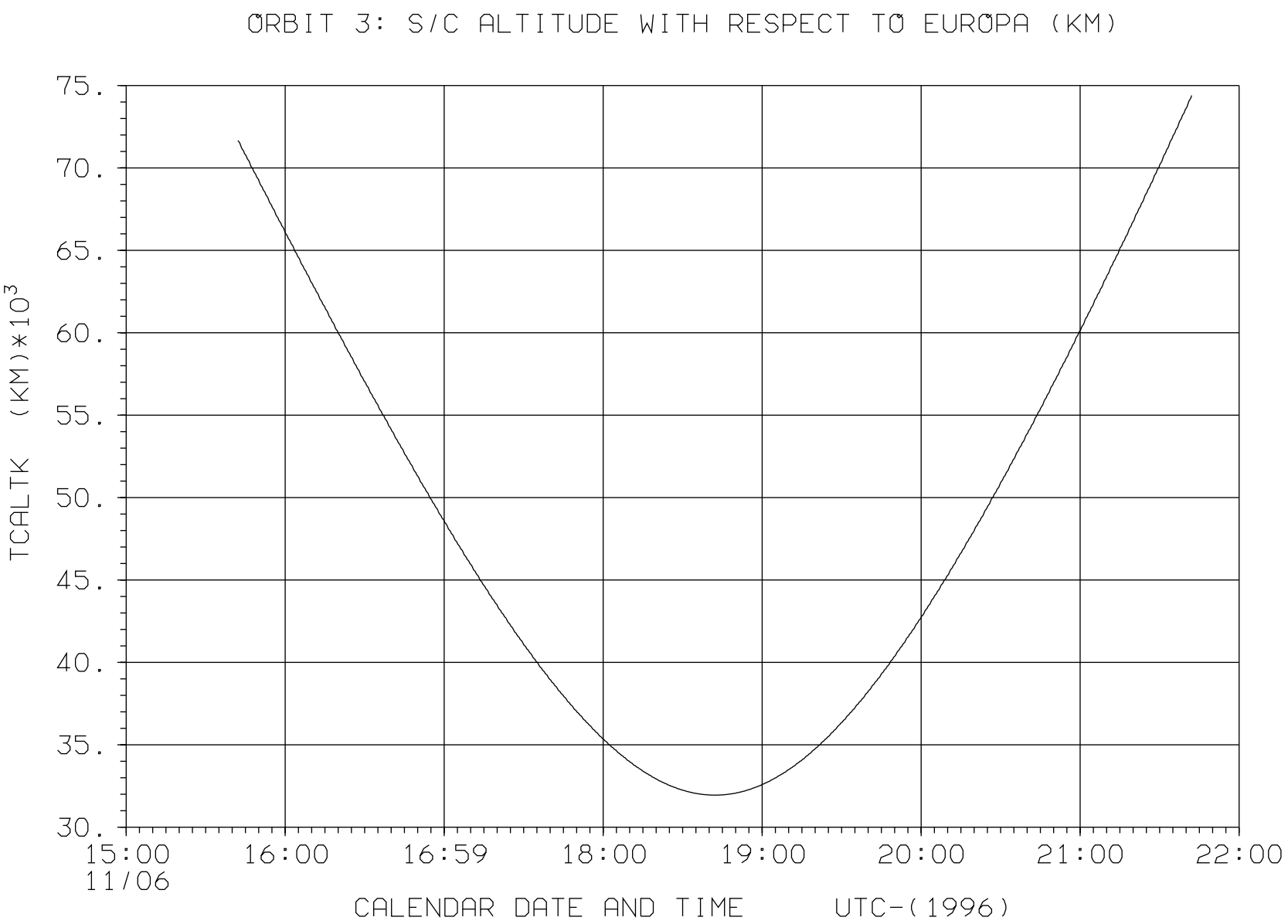
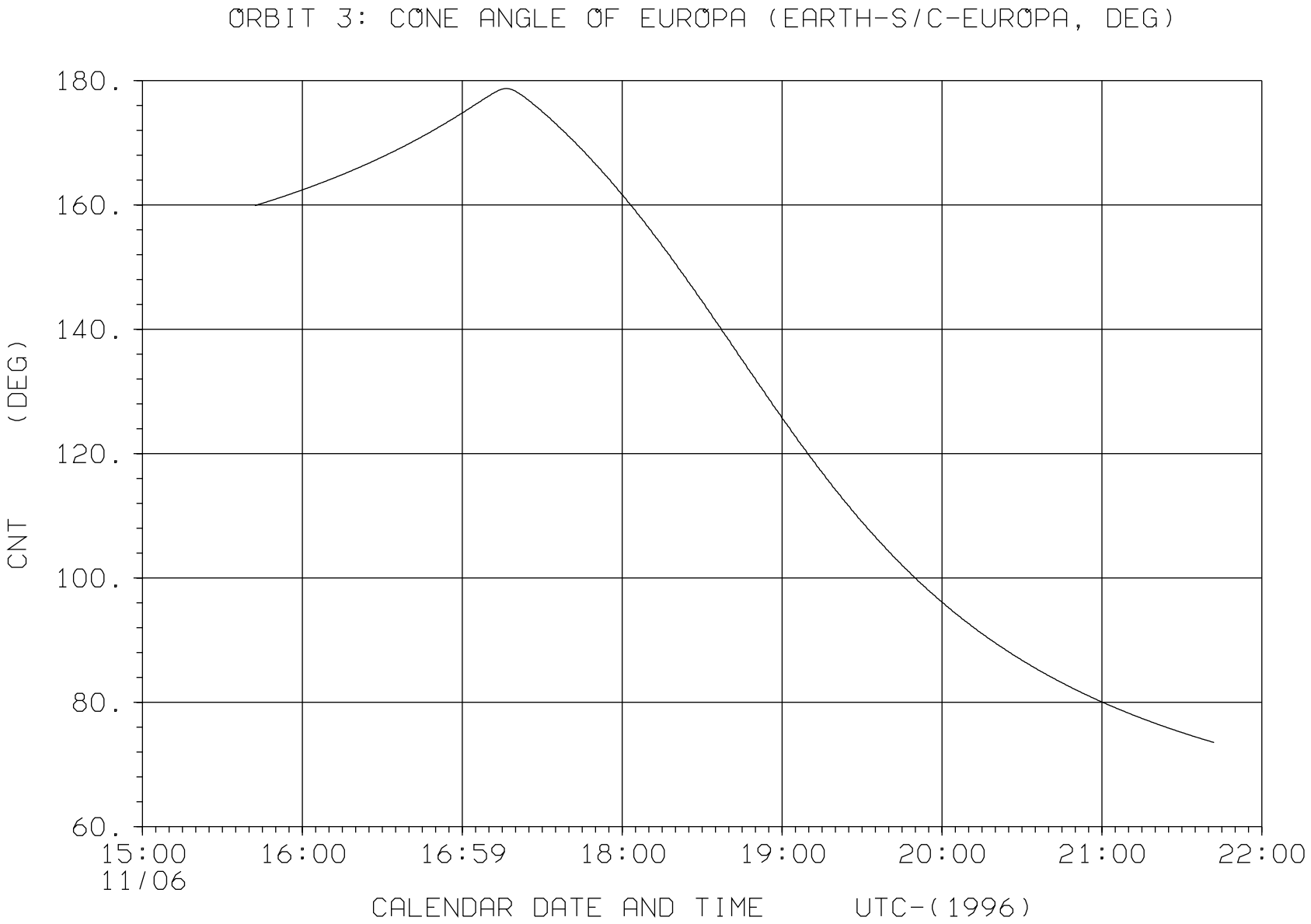
ORBIT 3: S/C ALTITUDE WITH RESPECT TO CALLISTO (KM)

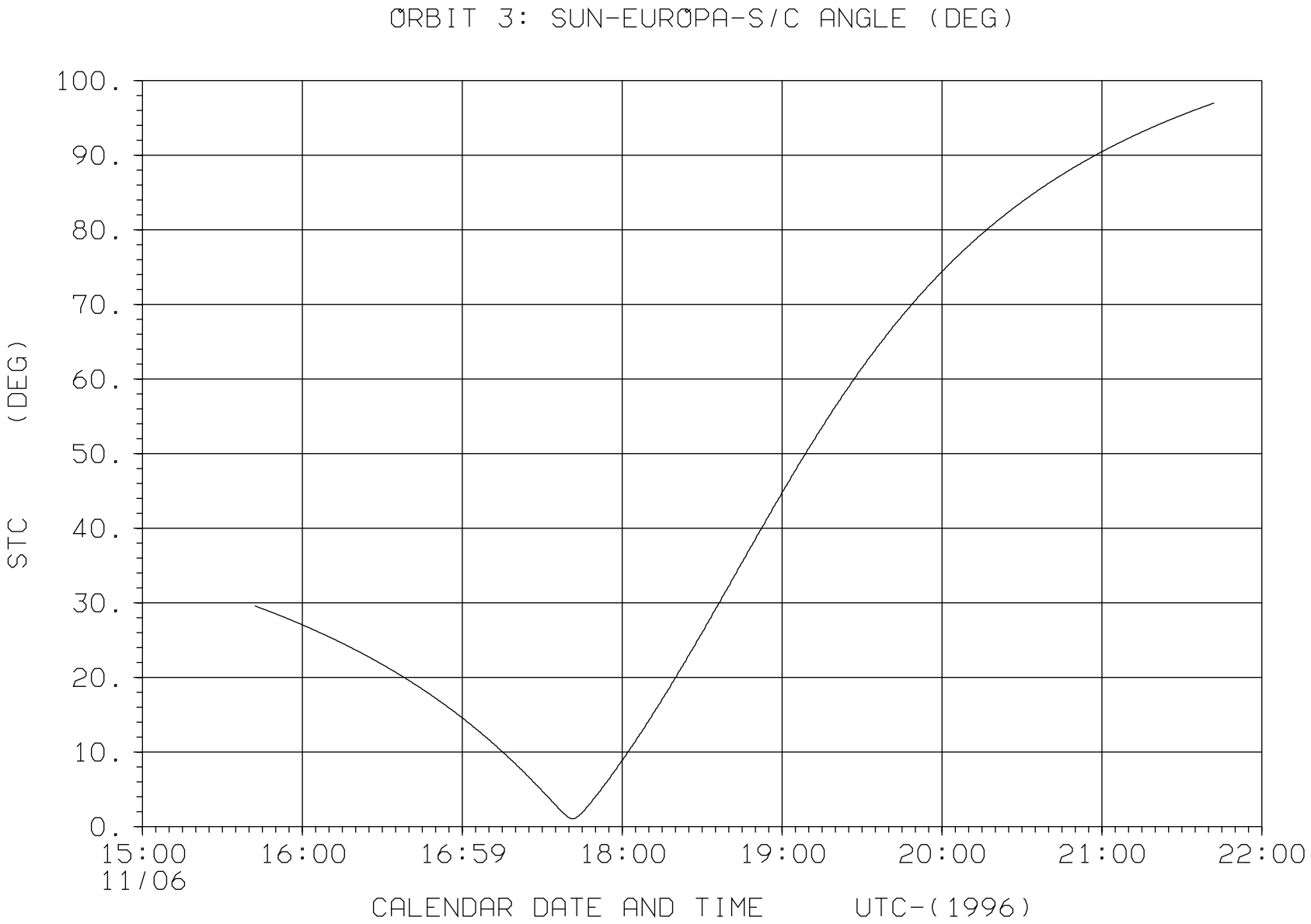


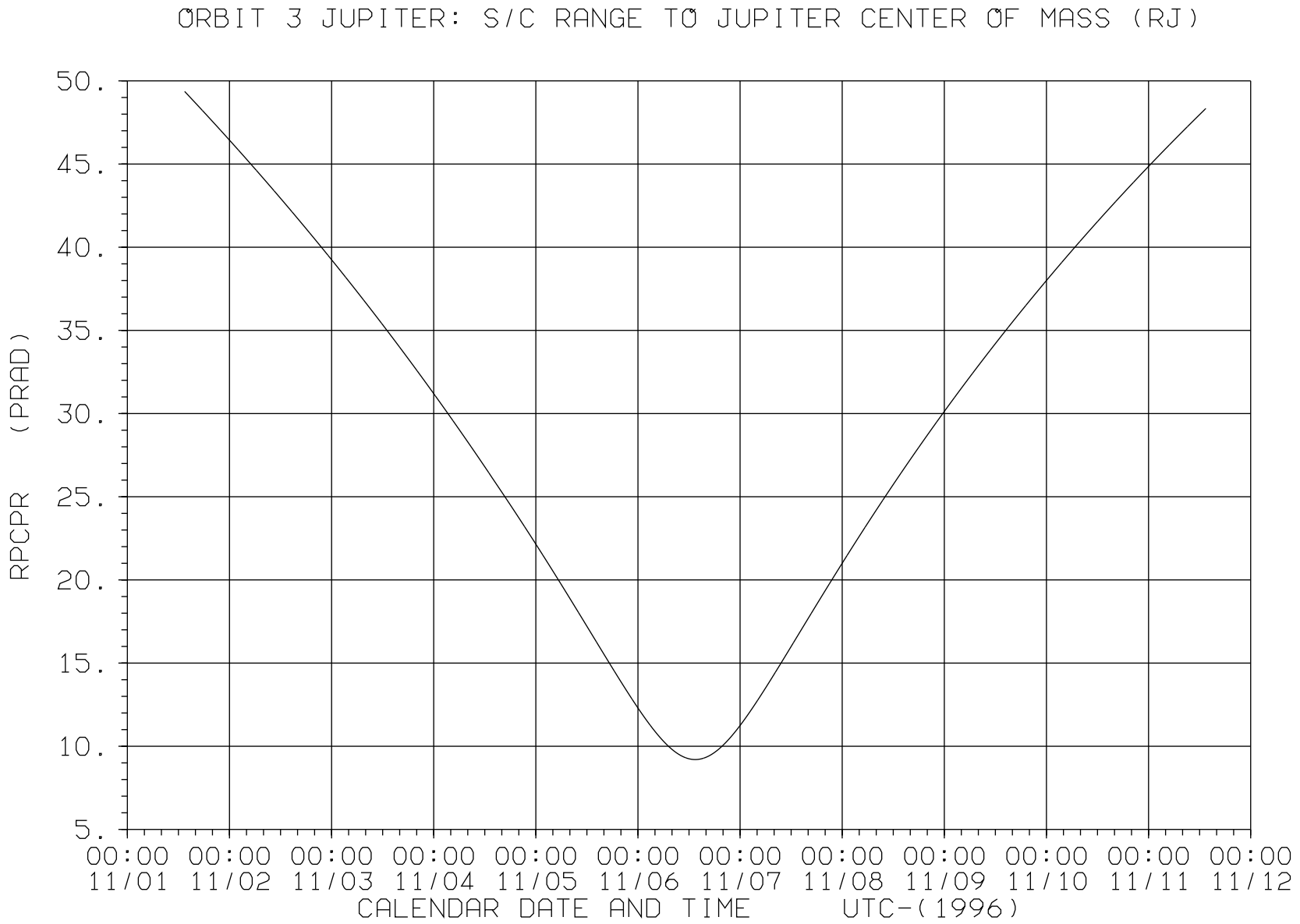

ORBIT 3: CONE ANGLE OF CALLISTO (EARTH-S/C-CALLISTO, DEG)
CNT (DEG)
180.
160.
140.
120.
100.
80.
60.
40.
10:00
11/04
11:00
12:00
13:00
14:00
15:00
16:00
17:00
CALENDAR DATE AND TIME UTC-(1996)

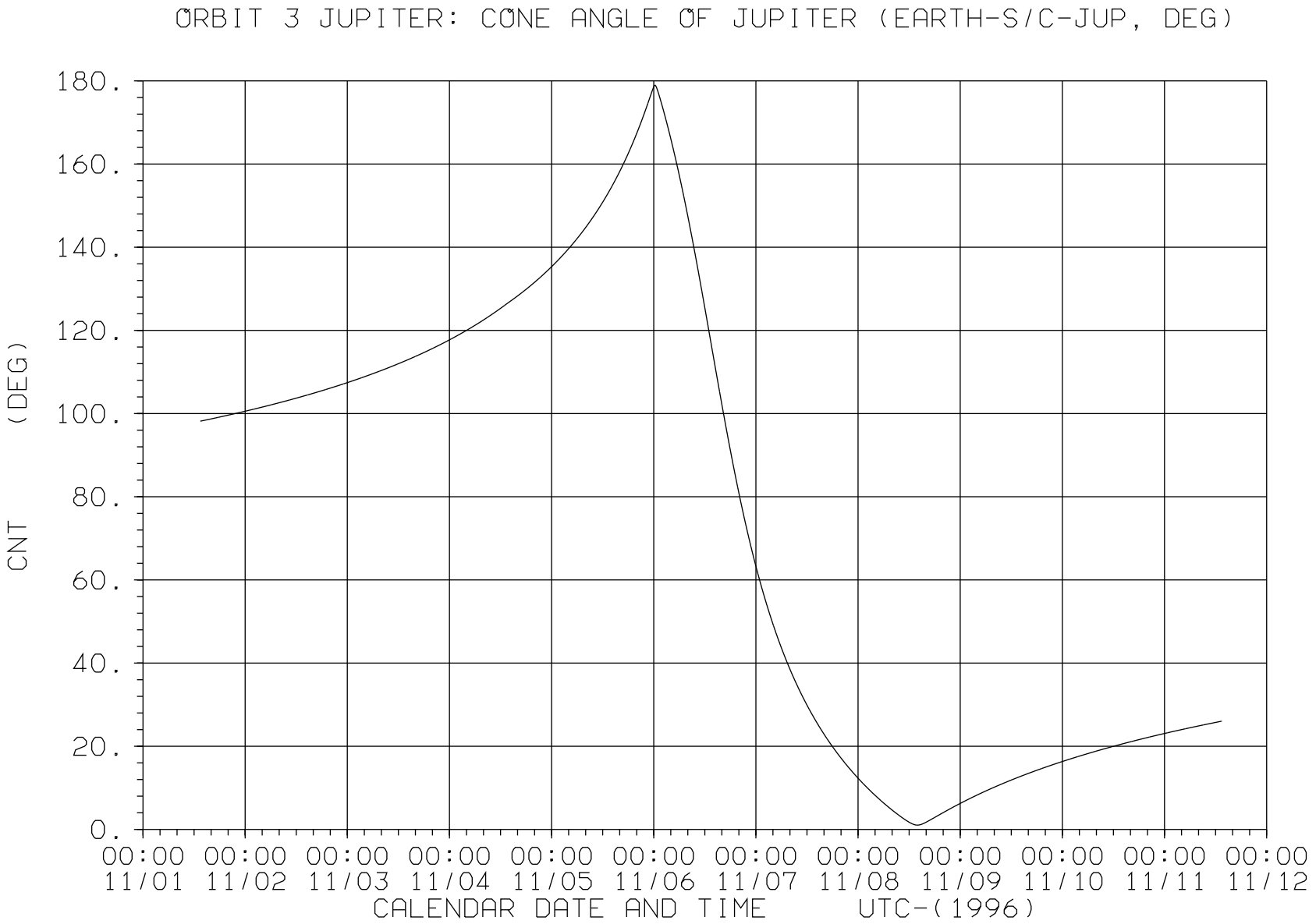

ORBIT 3: SUN-CALLISTO-S/C ANGLE (DEG)
STC (DEG)
140.
120.
100.
80.
60.
40.
20.
0.
10:00
11/04
11:00
12:00
13:00
14:00
15:00
16:00
17:00
CALENDAR DATE AND TIME UTC-(1996)

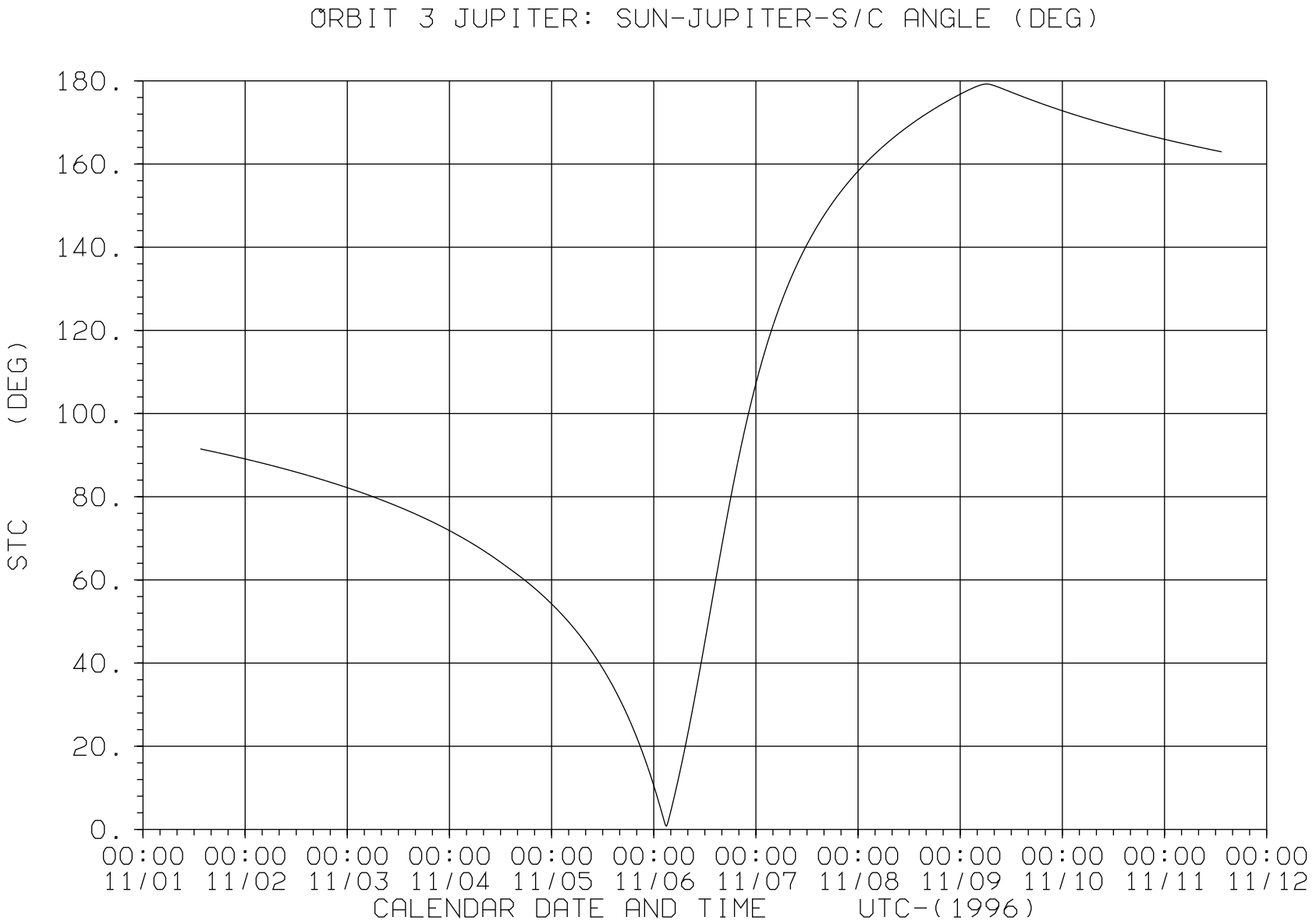

ORBIT 3: S/C ALTITUDE WITH RESPECT TO EUROPA (KM)
TCALTK (KM)*10^3
75.
70.
65.
60.
55.
50.
45.
40.
35.
30.
15:00
11/06
16:00
16:59
18:00
19:00
20:00
21:00
22:00
CALENDAR DATE AND TIME UTC-(1996)


ORBIT 3: CONE ANGLE OF EUROPA (EARTH-S/C-EUROPA, DEG)
180.
160.
140.
120.
100.
80.
60.
CNT (DEG)
15:00
11/06
16:00
16:59
18:00
19:00
20:00
21:00
22:00
CALENDAR DATE AND TIME UTC-(1996)


ORBIT 3: SUN-EUROPA-S/C ANGLE (DEG)
STC (DEG)
100.
90.
80.
70.
60.
50.
40.
30.
20.
10.
0.
15:00
11/06
16:00
16:59
18:00
19:00
20:00
21:00
22:00
CALENDAR DATE AND TIME UTC-(1996)


ORBIT 3 JUPITER: S/C RANGE TO JUPITER CENTER OF MASS (RJ)
RPCPR (PRAD)
50.
45.
40.
35.
30.
25.
20.
15.
10.
5.
00:00 11/01
00:00 11/02
00:00 11/03
00:00 11/04
00:00 11/05
00:00 11/06
00:00 11/07
00:00 11/08
00:00 11/09
00:00 11/10
00:00 11/11
00:00 11/12
CALENDAR DATE AND TIME UTC-(1996)


ORBIT 3 JUPITER: CONE ANGLE OF JUPITER (EARTH-S/C-JUP, DEG)
CNT (DEG)
180.
160.
140.
120.
100.
80.
60.
40.
20.
0.
00:00 11/01
00:00 11/02
00:00 11/03
00:00 11/04
00:00 11/05
00:00 11/06
00:00 11/07
00:00 11/08
00:00 11/09
00:00 11/10
00:00 11/11
00:00 11/12
CALENDAR DATE AND TIME UTC-(1996)


ORBIT 3 JUPITER: SUN-JUPITER-S/C ANGLE (DEG)
STC (DEG)
180.
160.
140.
120.
100.
80.
60.
40.
20.
0.
00:00 11/01
00:00 11/02
00:00 11/03
00:00 11/04
00:00 11/05
00:00 11/06
00:00 11/07
00:00 11/08
00:00 11/09
00:00 11/10
00:00 11/11
00:00 11/12
CALENDAR DATE AND TIME UTC-(1996)