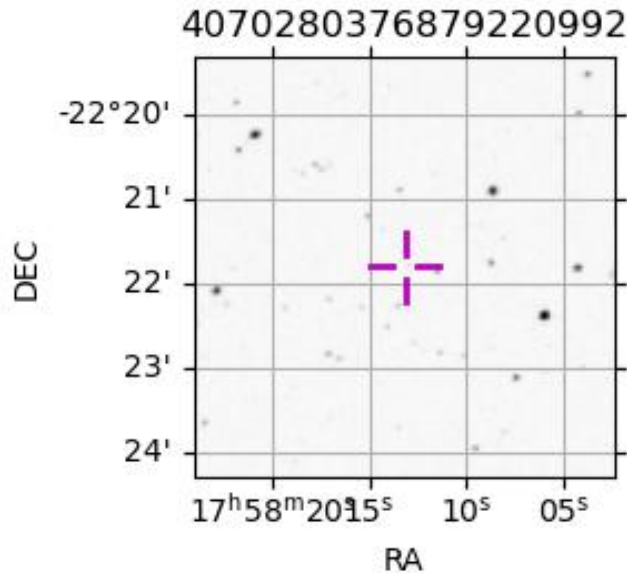
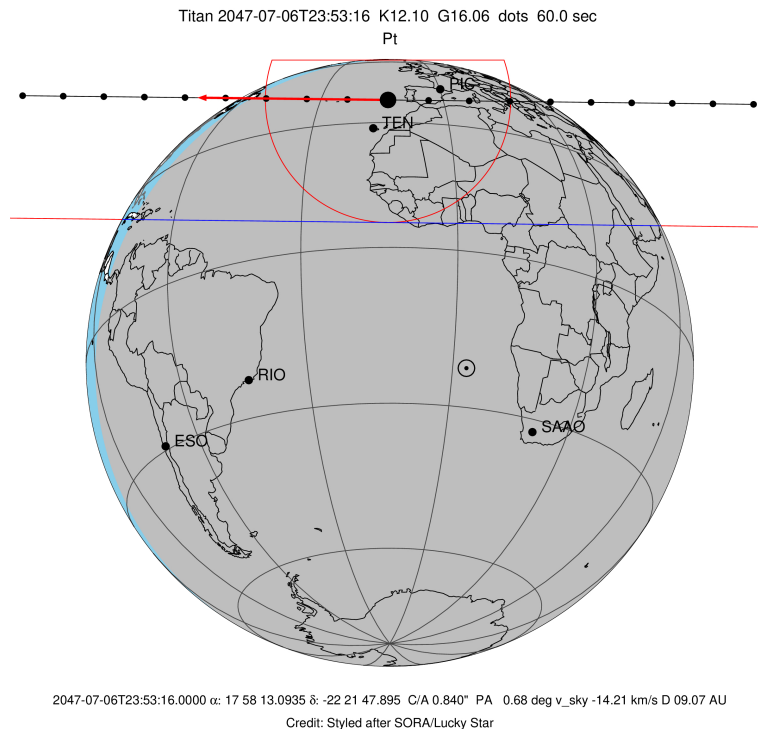


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-07-06T23:53:16.000
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4070280376879220992
 2Mass ID (if available) : 17581310-2221476

ICRS Star Coord at Epoch: 17h 58m 13.09348s -22:21:47.89526s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 12.096
 G magnitude : 16.061
 RP magnitude : 14.933
 BP magnitude : 17.332
 DUPflag : 0
 Distance (au) : 9.066
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -14.22
 Sun-Target sep (deg) : 165.36
 Sun-Moon sep (deg) : 8.91
 B (ring opening deg) : 26.48
 PA of pole (deg) : 5.63
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.840
 C/A sky separation (km) : 5523.3
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+ +	JUL 06 23:49 - JUL 06 23:55	Pie
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5	+ +	JUL 06 23:50 - JUL 06 23:56	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8			Pnn
ESO	European Southern Obs. (3.6m)	-29.3	289.3			Pnn
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



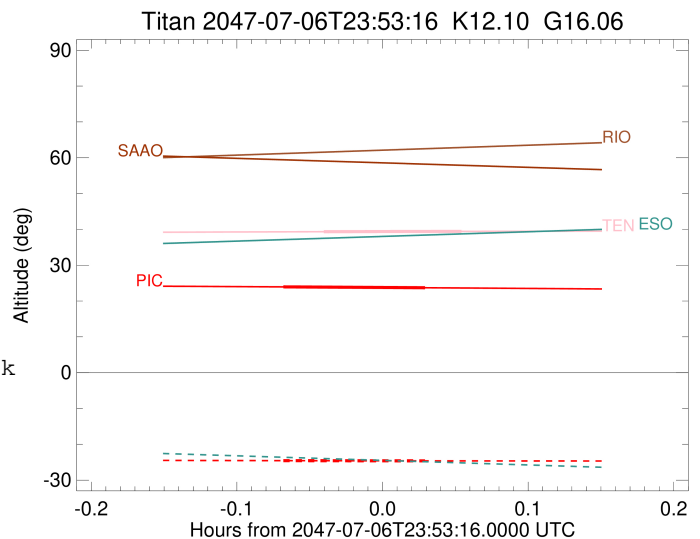
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-07-06T23:52:05.780
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : PIC
Location             : Pic du Midi
Latitude (deg)       : 42.93656
E. Longitude (deg)  : 0.14231
Altitude (km)       : 2.890
Gaia source ID      : 4070280376879220992
2Mass ID (if available) : 17581310-2221476
ICRS Star Coord at Epoch: 17h 58m 13.09348s -22:21:47.89526s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 12.096
G magnitude          : 16.061
RP magnitude         : 14.933
BP magnitude         : 17.332
DUPflag             : 0
Distance (au)       : 9.066
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -14.22
Sun-Target sep (deg) : 165.36
Sun-Moon sep (deg)  : 9.02
B (ring opening deg) : 26.48
PA of pole (deg)    : 5.63
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.033
C/A sky separation (km) : 218.7
NAIF SPICE kernels  : RAJobs_U111+rgf16.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
IAU_NEPTUNE_for_RINGFIT.tpc.BECAREFUL
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk

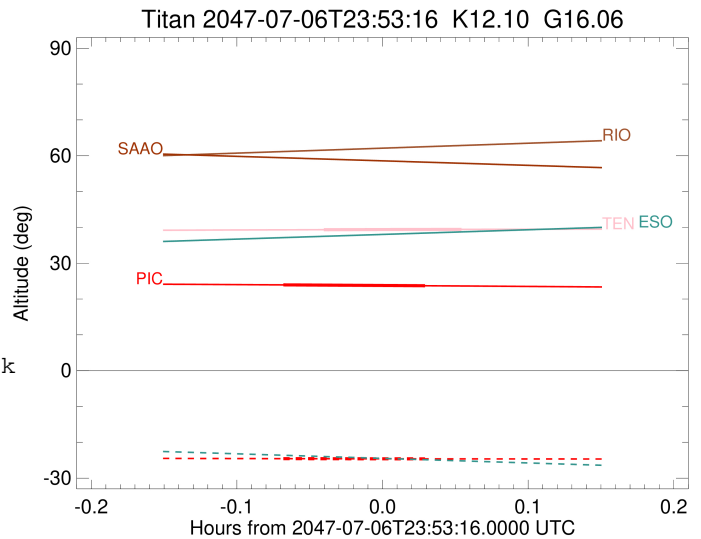
```

x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2047-07-06T23:49:09.383	23.95	-24.56	2575.2	0.03	0.03
Titan	E	2047-07-06T23:55:02.209	23.70	-24.62	2575.1	8.69	8.69



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-07-06T23:53:42.040
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Observer code : TEN
 Location : Teide Obs./Tenerife
 Latitude (deg) : 28.30050
 E. Longitude (deg) : 343.48909
 Altitude (km) : 2.395
 Gaia source ID : 4070280376879220992
 2Mass ID (if available) : 17581310-2221476
 ICRS Star Coord at Epoch: 17h 58m 13.09348s -22:21:47.89526s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 12.096
 G magnitude : 16.061
 RP magnitude : 14.933
 BP magnitude : 17.332
 DUPflag : 0
 Distance (au) : 9.066
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -14.22
 Sun-Target sep (deg) : 165.36
 Sun-Moon sep (deg) : 9.23
 B (ring opening deg) : 26.48
 PA of pole (deg) : 5.63
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.093
 C/A sky separation (km) : 610.3
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp
 de440.bsp
 earth_720101_070426.bpc
 jup365.bsp
 urall6.bsp
 IAU_SATURN_for_RINGFIT.tpc
 pck00010.tpc
 earth_200101_990628_predict.bpc
 IAU_NEPTUNE_for_RINGFIT.tpc.BECAREFUL
 uranus_ringframes_rfrench20220627_v1.tf
 neptune_ringframes_rfrench20220702a_v1.tf
 earth_flat_IAU.spk



x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2047-07-06T23:50:50.927	39.35	-35.72	2575.1	-16.68	-16.69
Titan	E	2047-07-06T23:56:33.179	39.44	-36.20	2575.1	-7.79	-7.79