

target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2032-12-07T12:44:25.420
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 3376835268169204992
 2Mass ID (if available) : 06200057+2223186

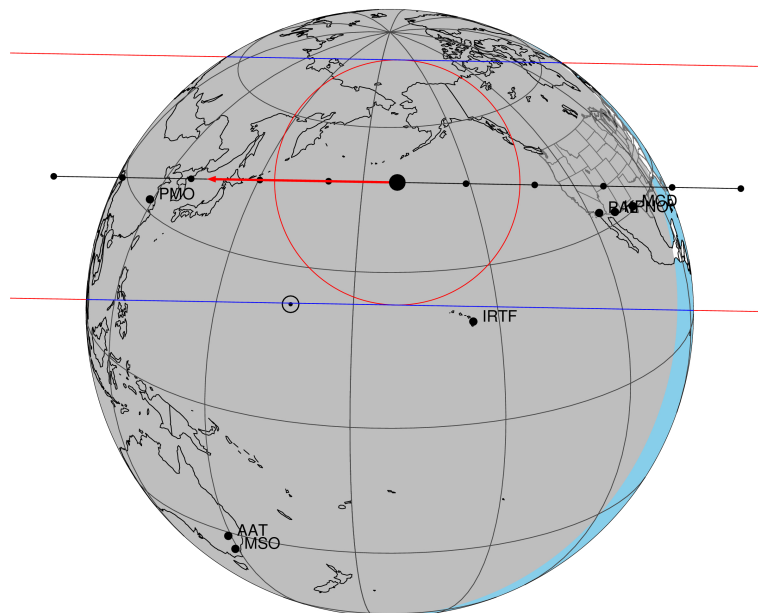
ICRS Star Coord at Epoch: 06h 20m 00.57488s +22:23:18.63379s
 RUWE (>1.4 is poor) : 1.14
 K magnitude : 10.762
 G magnitude : 14.331
 RP magnitude : 13.328
 BP magnitude : 15.368
 DUPflag : 0
 Distance (au) : 8.071
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -24.04
 Sun-Target sep (deg) : 160.86
 Sun-Moon sep (deg) : 138.81
 B (ring opening deg) : -25.99
 PA of pole (deg) : -6.03
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.467
 C/A sky separation (km) : 2736.4
 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	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	DEC 07 12:39 - DEC 07 12:43	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	DEC 07 12:46 - DEC 07 12:49	Pie
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	DEC 07 12:39 - DEC 07 12:42	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	DEC 07 12:39 - DEC 07 12:42	Pie
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
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

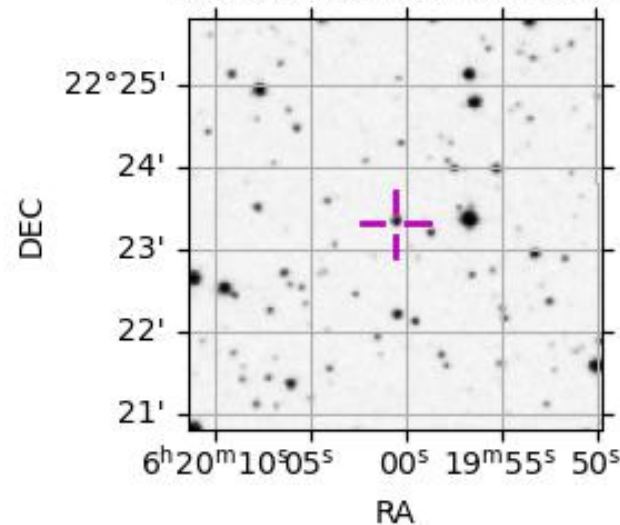
Titan 2032-12-07T12:44:25 K10.76 G14.33 dots 60.0 sec
Pt



2032-12-07T12:44:25.4200 α: 06 20 00.5749 δ: +22 23 18.634 C/A 0.468" PA 1.03 deg v_sky -24.05 km/s D 08.07 AU

Credit: Styled after SORA/Lucky Star

3376835268169204992



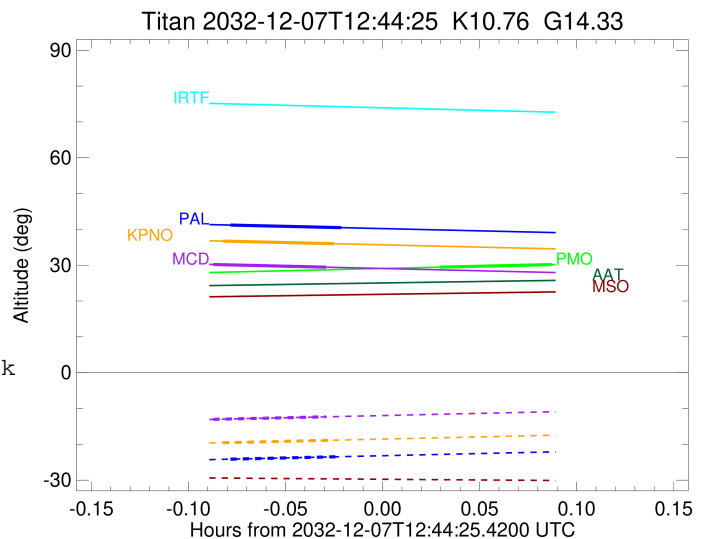
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2032-12-07T12:41:26.050
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : PAL
Location             : Palomar Mt (200")
Latitude (deg)       : 33.35622
E. Longitude (deg)   : 243.13601
Altitude (km)        : 1.706
Gaia source ID       : 3376835268169204992
2Mass ID (if available) : 06200057+2223186
ICRS Star Coord at Epoch: 06h 20m 00.57488s +22:23:18.63379s
RUWE (>1.4 is poor) : 1.14
K magnitude          : 10.762
G magnitude          : 14.331
RP magnitude         : 13.328
BP magnitude         : 15.368
DUPflag             : 0
Distance (au)        : 8.071
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -24.04
Sun-Target sep (deg) : 160.86
Sun-Moon sep (deg)   : 138.76
B (ring opening deg) : -25.99
PA of pole (deg)     : -6.03
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.100
C/A sky separation (km): 587.2
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	2032-12-07T12:39:42.743	41.20	-24.15	2575.2	-5.77	-5.77
Titan	E	2032-12-07T12:43:09.375	40.48	-23.44	2575.1	-17.84	-17.85



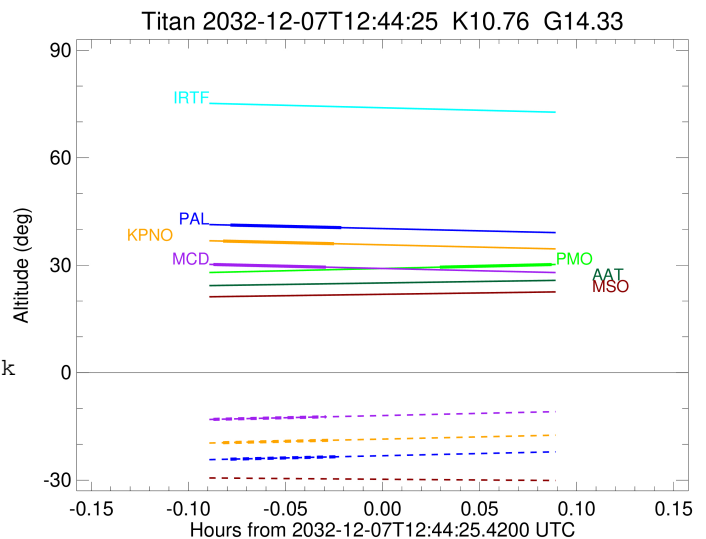
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2032-12-07T12:47:55.710
Event type          : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code       : PMO
Location            : Purple Mtn Obs. Nanking
Latitude (deg)      : 32.06667
E. Longitude (deg)  : 118.82089
Altitude (km)       : 0.364
Gaia source ID      : 3376835268169204992
2Mass ID (if available) : 06200057+2223186
ICRS Star Coord at Epoch: 06h 20m 00.57488s +22:23:18.63379s
RUWE (>1.4 is poor) : 1.14
K magnitude         : 10.762
G magnitude         : 14.331
RP magnitude        : 13.328
BP magnitude        : 15.368
DUPflag            : 0
Distance (au)       : 8.071
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -24.04
Sun-Target sep (deg) : 160.86
Sun-Moon sep (deg)  : 139.75
B (ring opening deg) : -25.99
PA of pole (deg)    : -6.03
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.087
C/A sky separation (km) : 506.8
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

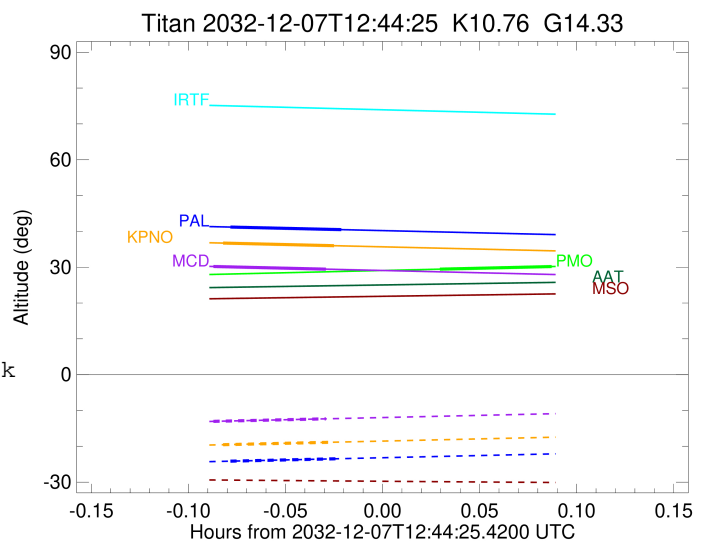
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2032-12-07T12:46:11.369	29.45	-47.10	2575.2	-3.58	-3.58
Titan	E	2032-12-07T12:49:40.030	30.18	-47.84	2575.1	-16.76	-16.77



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2032-12-07T12:41:12.220
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Observer code : KPNO
 Location : Kitt Peak Natl Obs
 Latitude (deg) : 31.96333
 E. Longitude (deg) : 248.40000
 Altitude (km) : 2.120
 Gaia source ID : 3376835268169204992
 2Mass ID (if available) : 06200057+2223186
 ICRS Star Coord at Epoch: 06h 20m 00.57488s +22:23:18.63379s
 RUWE (>1.4 is poor) : 1.14
 K magnitude : 10.762
 G magnitude : 14.331
 RP magnitude : 13.328
 BP magnitude : 15.368
 DUPflag : 0
 Distance (au) : 8.071
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -24.04
 Sun-Target sep (deg) : 160.86
 Sun-Moon sep (deg) : 138.68
 B (ring opening deg) : -25.99
 PA of pole (deg) : -6.03
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.096
 C/A sky separation (km) : 560.5
 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	2032-12-07T12:39:28.542	36.73	-19.55	2575.1	-5.24	-5.24
Titan	E	2032-12-07T12:42:55.905	36.00	-18.85	2575.1	-17.29	-17.30



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2032-12-07T12:40:56.410
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Observer code : MCD
 Location : McDonald Obs. 2.7m
 Latitude (deg) : 30.67158
 E. Longitude (deg) : 255.97844
 Altitude (km) : 2.075
 Gaia source ID : 3376835268169204992
 2Mass ID (if available) : 06200057+2223186
 ICRS Star Coord at Epoch: 06h 20m 00.57488s +22:23:18.63379s
 RUWE (>1.4 is poor) : 1.14
 K magnitude : 10.762
 G magnitude : 14.331
 RP magnitude : 13.328
 BP magnitude : 15.368
 DUPflag : 0
 Distance (au) : 8.071
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -24.04
 Sun-Target sep (deg) : 160.86
 Sun-Moon sep (deg) : 138.58
 B (ring opening deg) : -25.99
 PA of pole (deg) : -6.03
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.074
 C/A sky separation (km) : 434.1
 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	2032-12-07T12:39:11.518	30.19	-13.03	2575.2	-2.68	-2.68
Titan	E	2032-12-07T12:42:41.321	29.45	-12.32	2575.1	-14.71	-14.72

