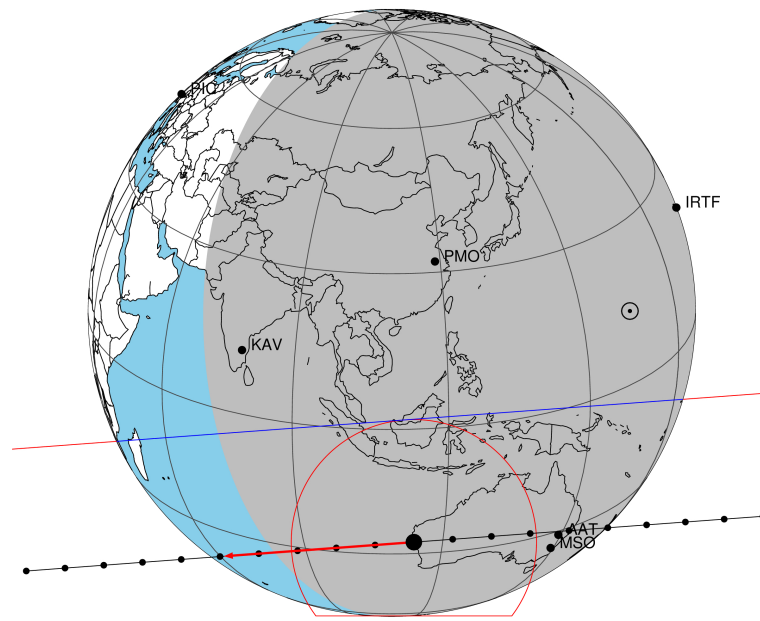


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2033-02-10T13:21:44.270
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 3424458552740820352
 2Mass ID (if available) : 06001379+2236134

ICRS Star Coord at Epoch: 06h 00m 13.82297s +22:36:12.92880s
 RUWE (>1.4 is poor) : 0.95
 K magnitude : 13.936
 G magnitude : 16.898
 RP magnitude : 15.959
 BP magnitude : 17.790
 DUPflag : 0
 Distance (au) : 8.363
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -13.60
 Sun-Target sep (deg) : 128.39
 Sun-Moon sep (deg) : 10.35
 B (ring opening deg) : -26.68
 PA of pole (deg) : -5.68
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.798
 C/A sky separation (km) : 4838.2
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

Titan 2033-02-10T13:21:44 K13.94 G16.90 dots 60.0 sec
 Pt

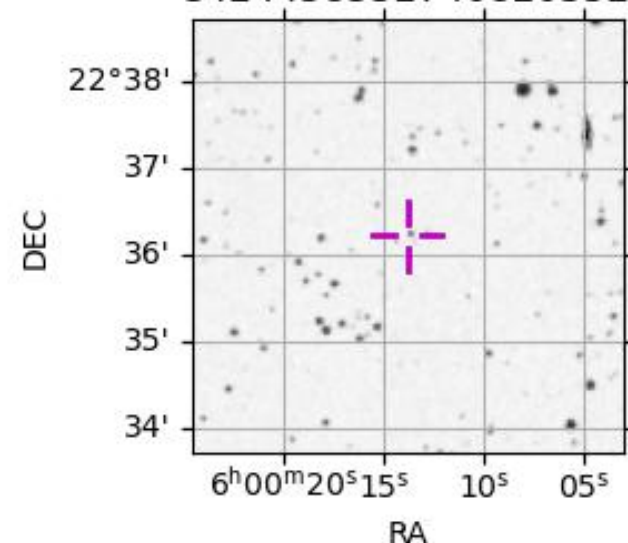


2033-02-10T13:21:44.2700 α: 06 00 13.82297 δ: +22 36 12.929 C/A 0.798" PA 175.75 deg v_sky -13.61 km/s D 08.36 AU
 Credit: Styled after SORA/Lucky Star

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			Pnn
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			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	+ +	FEB 10 13:14 - FEB 10 13:21	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	FEB 10 13:15 - FEB 10 13:21	Pie

3424458552740820352



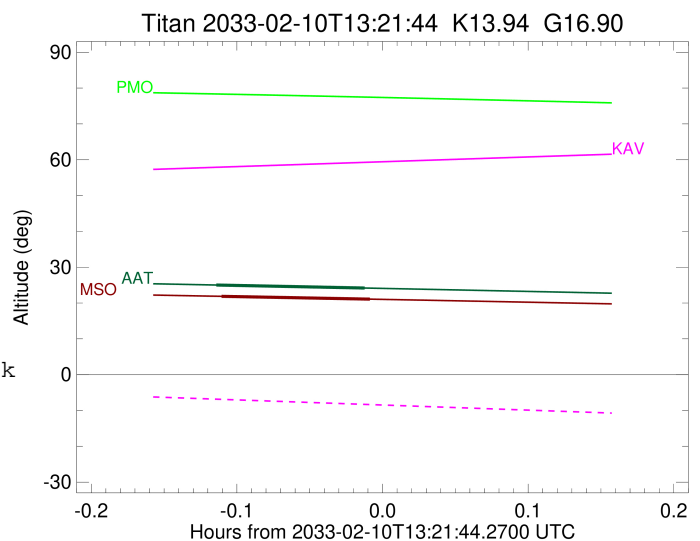
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2033-02-10T13:17:57.150
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : AAT
Location             : Siding Spring (AAT)
Latitude (deg)       : -31.27703
E. Longitude (deg)   : 149.06608
Altitude (km)        : 1.164
Gaia source ID       : 3424458552740820352
2Mass ID (if available) : 06001379+2236134
ICRS Star Coord at Epoch: 06h 00m 13.82297s +22:36:12.92880s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 13.936
G magnitude           : 16.898
RP magnitude          : 15.959
BP magnitude          : 17.790
DUPflag              : 0
Distance (au)         : 8.363
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -13.60
Sun-Target sep (deg) : 128.39
Sun-Moon sep (deg)   : 9.70
B (ring opening deg) : -26.68
PA of pole (deg)     : -5.68
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.011
C/A sky separation (km): 64.4
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

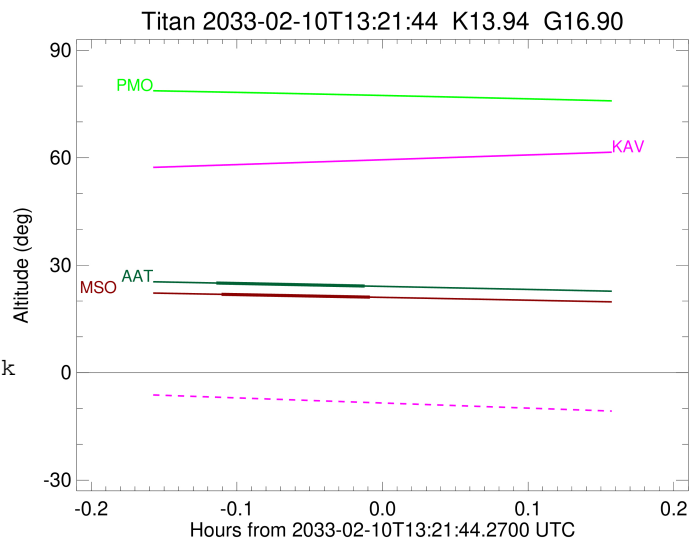
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2033-02-10T13:14:52.338	25.02	-42.30	2575.2	-0.24	-0.24
Titan	E	2033-02-10T13:21:02.044	24.18	-42.75	2575.1	-2.26	-2.26



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2033-02-10T13:18:10.030
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : MSO
Location             : Mt. Stromlo Observatory
Latitude (deg)       : -35.32000
E. Longitude (deg)   : 149.00833
Altitude (km)        : 0.770
Gaia source ID       : 3424458552740820352
2Mass ID (if available) : 06001379+2236134
ICRS Star Coord at Epoch: 06h 00m 13.82297s +22:36:12.92880s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 13.936
G magnitude           : 16.898
RP magnitude          : 15.959
BP magnitude          : 17.790
DUPflag              : 0
Distance (au)        : 8.363
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -13.60
Sun-Target sep (deg) : 128.39
Sun-Moon sep (deg)   : 9.70
B (ring opening deg) : -26.68
PA of pole (deg)     : -5.68
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.053
C/A sky separation (km) : 324.1
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	2033-02-10T13:15:06.433	21.86	-38.51	2575.1	-5.42	-5.42
Titan	E	2033-02-10T13:21:13.702	21.08	-38.92	2575.1	-7.47	-7.47