

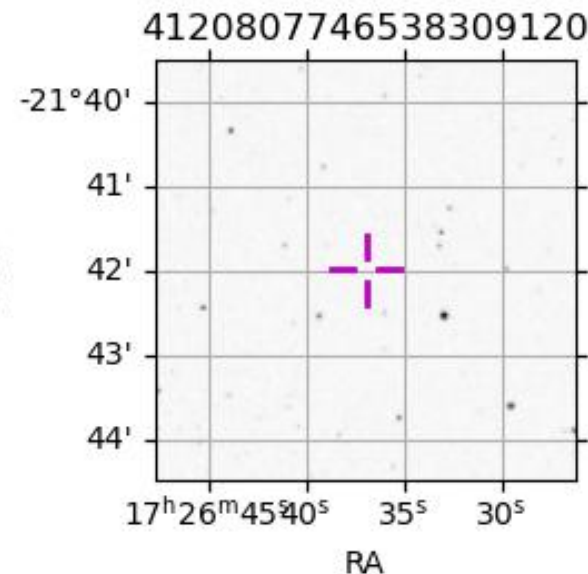
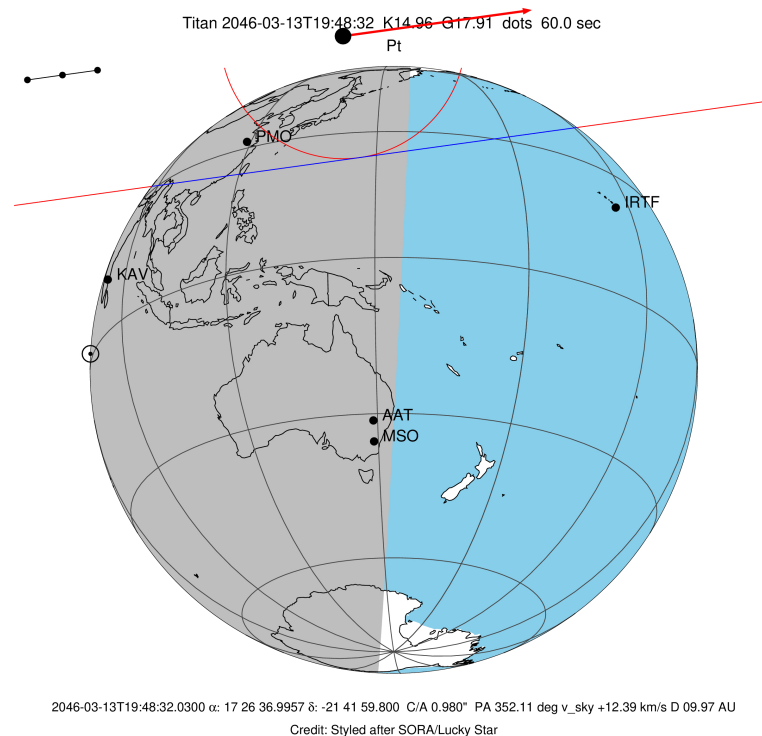
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2046-03-13T19:48:32.030
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4120807746538309120
 2Mass ID (if available) : 17263700-2141592

ICRS Star Coord at Epoch: 17h 26m 36.99569s -21:41:59.80026s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.960
 G magnitude : 17.913
 RP magnitude : 16.975
 BP magnitude : 18.841
 DUPflag : 0
 Distance (au) : 9.974
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 12.39
 Sun-Target sep (deg) : 90.51
 Sun-Moon sep (deg) : 157.04
 B (ring opening deg) : 26.50
 PA of pole (deg) : 4.93
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.978
 C/A sky separation (km) : 7072.3
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

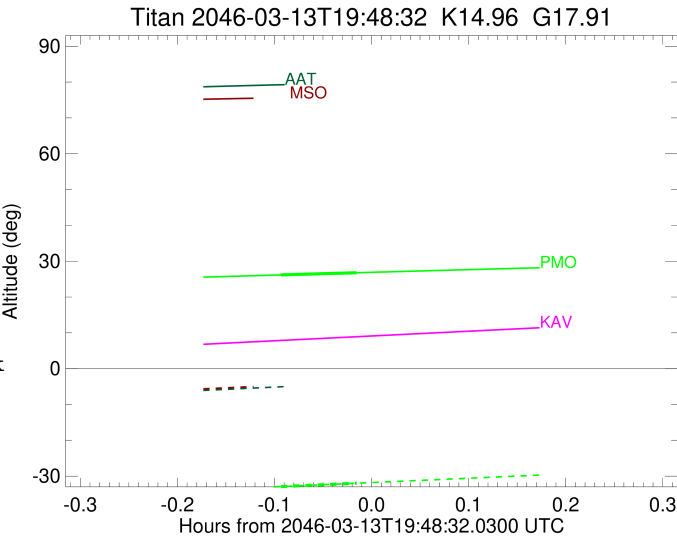
Observable events with sun below -5 deg and altitude above 5 deg

| Obs | Location | lat | Elon | Target | Observed Events Interval | OEcode |
|------|-----------------------------------|-------|-------|--------|-----------------------------|--------|
| 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 | + + | MAR 13 19:42 - MAR 13 19:47 | Pie |
| 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 | | | Pnn |
| SAAO | So. Afr. Astro. Obs. (Sutherland) | -32.4 | 20.8 | | | Pnn |
| MSO | Mt. Stromlo Observatory | -35.3 | 149.0 | | | Pnn |



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target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2046-03-13T19:45:15.580
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        : 4120807746538309120
2Mass ID (if available) : 17263700-2141592
ICRS Star Coord at Epoch: 17h 26m 36.99569s -21:41:59.80026s
RUWE (>1.4 is poor)  : 1.00
K magnitude           : 14.960
G magnitude           : 17.913
RP magnitude          : 16.975
BP magnitude          : 18.841
DUPflag              : 0
Distance (au)         : 9.974
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 12.39
Sun-Target sep (deg)  : 90.51
Sun-Moon sep (deg)    : 156.93
B (ring opening deg)  : 26.50
PA of pole (deg)      : 4.93
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.265
C/A sky separation (km) : 1916.0
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 | 2046-03-13T19:42:52.920 | 26.17 | -32.93 | 2575.1 | -31.26 | -31.27 |
| Titan | E | 2046-03-13T19:47:38.235 | 26.78 | -31.97 | 2575.1 | -51.32 | -51.33 |