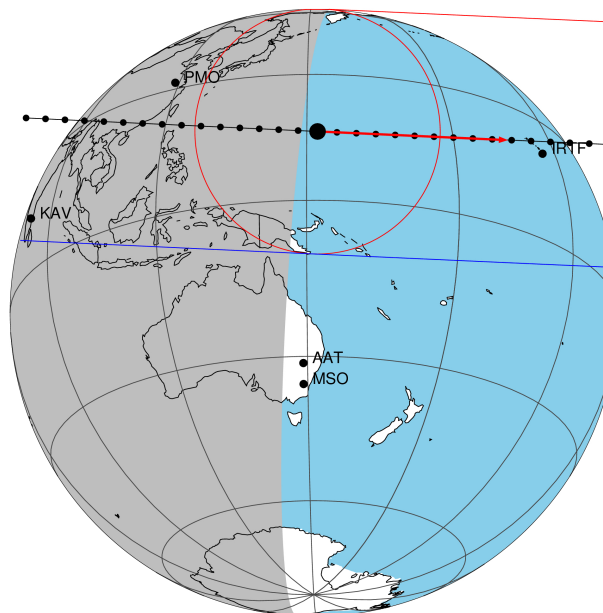


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2046-03-07T20:20:13.320
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4120813866911285760
 2Mass ID (if available) : 17255384-2143511

ICRS Star Coord at Epoch: 17h 25m 53.81879s -21:43:51.35656s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 11.113
 G magnitude : 16.166
 RP magnitude : 14.869
 BP magnitude : 18.094
 DUPflag : 0
 Distance (au) : 10.063
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 6.81
 Sun-Target sep (deg) : 84.70
 Sun-Moon sep (deg) : 85.57
 B (ring opening deg) : 26.54
 PA of pole (deg) : 4.91
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.522
 C/A sky separation (km) : 3809.0
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

Titan 2046-03-07T20:20:13 K11.11 G16.17 dots 60.0 sec
 Pt

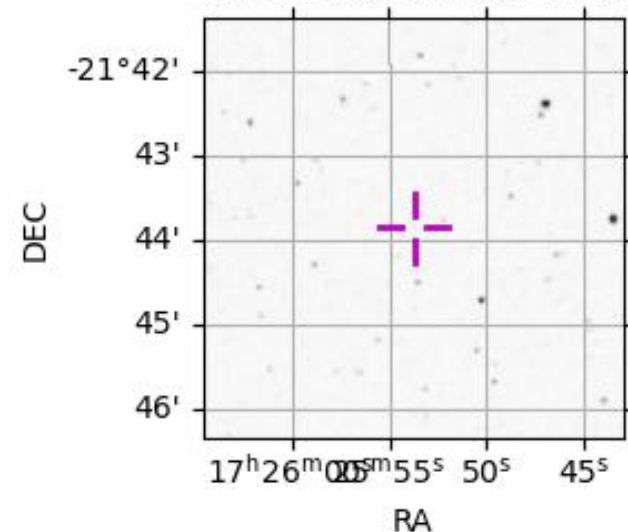


2046-03-07T20:20:13.3200 α: 17 25 53.8188 δ: -21 43 51.357 C/A 0.522" PA 2.61 deg v_sky + 6.80 km/s D 10.06 AU
 Credit: Styled after SORA/Lucky Star

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 07 20:05 - MAR 07 20:18 | 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 | + + | MAR 07 20:02 - MAR 07 20:08 | Pie |
| 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 |

4120813866911285760



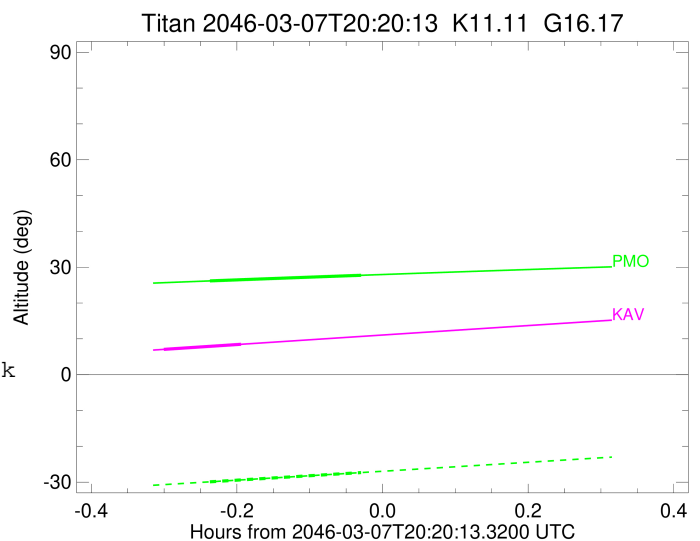
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2046-03-07T20:12:12.150
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       : 4120813866911285760
2Mass ID (if available) : 17255384-2143511
ICRS Star Coord at Epoch: 17h 25m 53.81879s -21:43:51.35656s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 11.113
G magnitude           : 16.166
RP magnitude          : 14.869
BP magnitude          : 18.094
DUPflag              : 0
Distance (au)         : 10.063
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 6.81
Sun-Target sep (deg) : 84.70
Sun-Moon sep (deg)   : 86.01
B (ring opening deg) : 26.54
PA of pole (deg)     : 4.91
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.115
C/A sky separation (km) : 840.3
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 | 2046-03-07T20:05:57.098 | 26.16 | -29.92 | 2575.1 | 18.18 | 18.19 |
| Titan | E | 2046-03-07T20:18:27.798 | 27.74 | -27.33 | 2575.1 | 15.70 | 15.71 |



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2046-03-07T20:05:23.180
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : KAV
Location             : Kavalur Observatory
Latitude (deg)       : 12.57556
E. Longitude (deg)  : 78.83167
Altitude (km)        : 0.722
Gaia source ID       : 4120813866911285760
2Mass ID (if available) : 17255384-2143511
ICRS Star Coord at Epoch: 17h 25m 53.81879s -21:43:51.35656s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 11.113
G magnitude          : 16.166
RP magnitude         : 14.869
BP magnitude         : 18.094
DUPflag             : 0
Distance (au)        : 10.063
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 6.81
Sun-Target sep (deg) : 84.70
Sun-Moon sep (deg)  : 85.80
B (ring opening deg) : 26.54
PA of pole (deg)    : 4.91
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.306
C/A sky separation (km) : 2232.0
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 | 2046-03-07T20:02:12.037 | 7.06 | -71.88 | 2575.0 | -50.30 | -50.31 |
| Titan | E | 2046-03-07T20:08:34.568 | 8.48 | -70.44 | 2575.1 | -51.40 | -51.41 |

