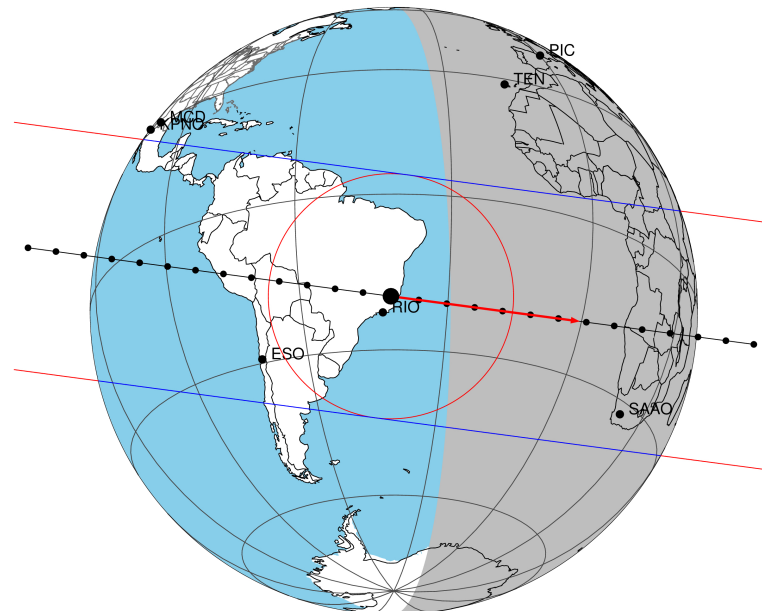


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-10-02T19:52:38.790
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4070410222353623296
 2Mass ID (if available) : 17514818-2236516

ICRS Star Coord at Epoch: 17h 51m 48.14767s -22:36:51.86317s
 RUWE (>1.4 is poor) : 0.95
 K magnitude : 11.407
 G magnitude : 16.476
 RP magnitude : 15.137
 BP magnitude : 18.243
 DUPflag : 0
 Distance (au) : 10.178
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 9.86
 Sun-Target sep (deg) : 79.22
 Sun-Moon sep (deg) : 87.65
 B (ring opening deg) : 26.88
 PA of pole (deg) : 5.51
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.042
 C/A sky separation (km) : 306.9
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

Titan 2047-10-02T19:52:38 K11.41 G16.48 dots 60.0 sec
 Pgt

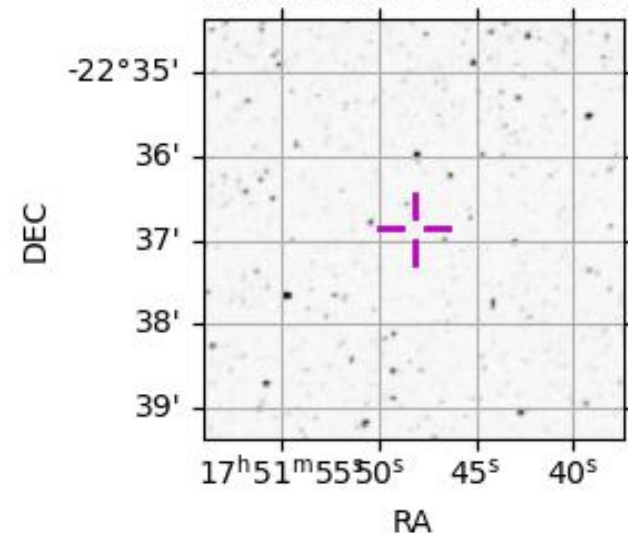


2047-10-02T19:52:38.7900 α: 17 51 48.1477 δ: -22 36 51.863 C/A 0.040" PA 7.59 deg v_sky + 9.85 km/s D 10.18 AU
 Credit: Styled after SORA/Lucky Star

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

| Obs | Location | lat | Elon | Target | Observed Events Interval | OEncode |
|------|-----------------------------------|-------|-------|--------|-----------------------------|---------|
| 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 | | | Pnn |
| SAAO | So. Afr. Astro. Obs. (Sutherland) | -32.4 | 20.8 | + + | OCT 02 19:58 - OCT 02 20:04 | Pie |
| MSO | Mt. Stromlo Observatory | -35.3 | 149.0 | | | Pnn |

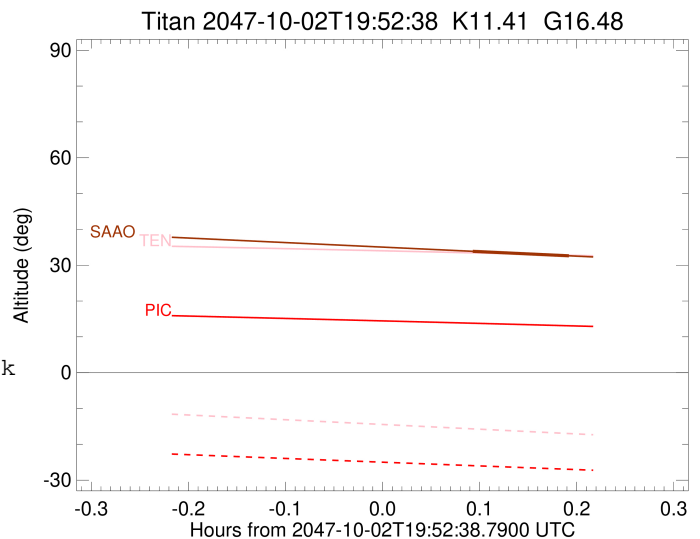
4070410222353623296



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-10-02T20:01:12.750
Event type            : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code         : SAAO
Location              : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)       : -32.37953
E. Longitude (deg)   : 20.81070
Altitude (km)        : 1.768
Gaia source ID       : 4070410222353623296
2Mass ID (if available) : 17514818-2236516
ICRS Star Coord at Epoch: 17h 51m 48.14767s -22:36:51.86317s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 11.407
G magnitude           : 16.476
RP magnitude          : 15.137
BP magnitude          : 18.243
DUPflag              : 0
Distance (au)        : 10.178
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 9.86
Sun-Target sep (deg) : 79.22
Sun-Moon sep (deg)   : 88.15
B (ring opening deg) : 26.88
PA of pole (deg)     : 5.51
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.257
C/A sky separation (km): 1899.5
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 | 2047-10-02T19:58:12.860 | 33.87 | -39.78 | 2575.1 | -42.24 | -42.26 |
| Titan | E | 2047-10-02T20:04:12.559 | 32.61 | -40.75 | 2575.1 | -40.05 | -40.07 |