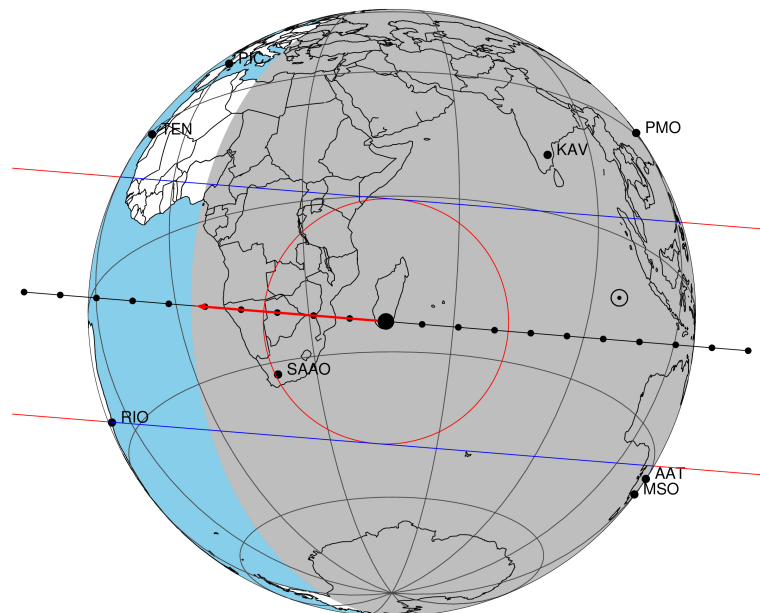


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2048-08-20T17:34:37.440
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4079217482270464768
 2Mass ID (if available) : 18391545-2240021

ICRS Star Coord at Epoch: 18h 39m 15.44333s -22:40:02.32171s
 RUWE (>1.4 is poor) : 1.18
 K magnitude : 14.488
 G magnitude : 16.767
 RP magnitude : 16.052
 BP magnitude : 17.300
 DUPflag : 0
 Distance (au) : 9.332
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -12.71
 Sun-Target sep (deg) : 131.35
 Sun-Moon sep (deg) : 8.23
 B (ring opening deg) : 25.79
 PA of pole (deg) : 6.34
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.026
 C/A sky separation (km) : 174.4
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

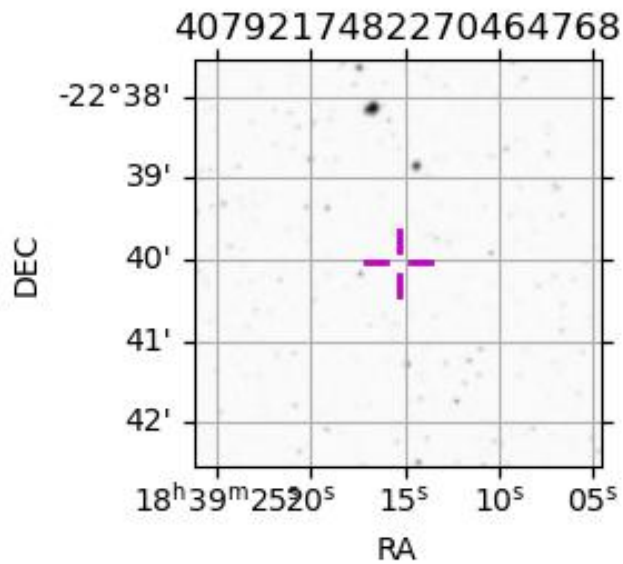
Titan 2048-08-20T17:34:37 K14.49 G16.77 dots 60.0 sec
 Pgt



2048-08-20T17:34:37.4400 cc: 18 39 15.44333 s: -22 40 02.322 C/A 0.026" PA 184.72 deg v_sky -12.71 km/s D 09.33 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 | + + | AUG 20 17:34 - AUG 20 17:40 | Pie |
| MSO | Mt. Stromlo Observatory | -35.3 | 149.0 | | | Pnn |



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2048-08-20T17:37:33.340
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       : 4079217482270464768
2Mass ID (if available) : 18391545-2240021
ICRS Star Coord at Epoch: 18h 39m 15.44333s -22:40:02.32171s
RUWE (>1.4 is poor) : 1.18
K magnitude           : 14.488
G magnitude           : 16.767
RP magnitude          : 16.052
BP magnitude          : 17.300
DUPflag              : 0
Distance (au)        : 9.332
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -12.71
Sun-Target sep (deg) : 131.35
Sun-Moon sep (deg)   : 8.77
B (ring opening deg) : 25.79
PA of pole (deg)     : 6.34
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.187
C/A sky separation (km): 1263.5
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 | 2048-08-20T17:34:41.497 | 64.85 | -17.90 | 2575.1 | -28.06 | -28.07 |
| Titan | E | 2048-08-20T17:40:25.216 | 66.01 | -19.11 | 2575.1 | -24.37 | -24.39 |

