

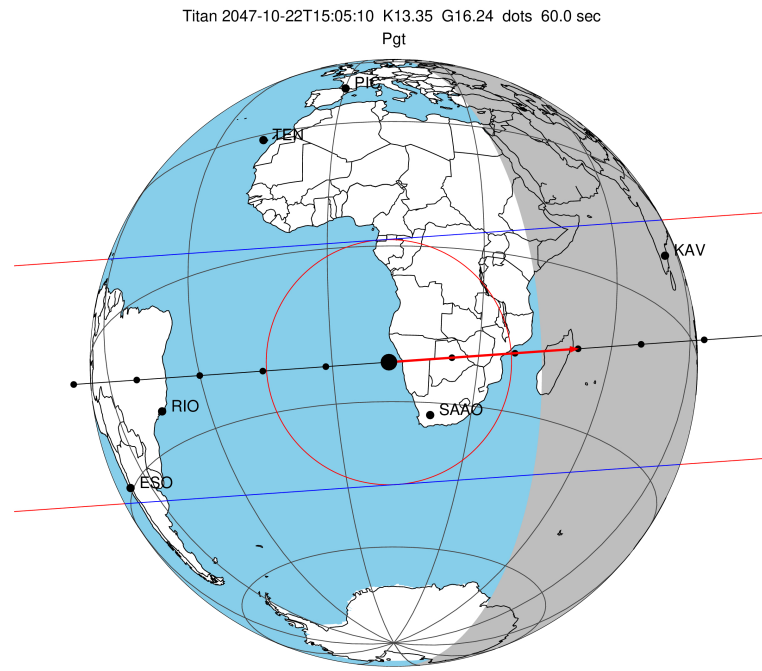
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-10-22T15:05:10.530
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4070175377890645248
 2Mass ID (if available) : 17565814-2239270

ICRS Star Coord at Epoch: 17h 56m 58.14844s -22:39:27.25237s
 RUWE (>1.4 is poor) : 1.05
 K magnitude : 13.353
 G magnitude : 16.238
 RP magnitude : 15.384
 BP magnitude : 16.987
 DUPflag : 0
 Distance (au) : 10.489
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 22.12
 Sun-Target sep (deg) : 60.83
 Sun-Moon sep (deg) : 12.15
 B (ring opening deg) : 26.80
 PA of pole (deg) : 5.62
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.002
 C/A sky separation (km) : 12.6
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

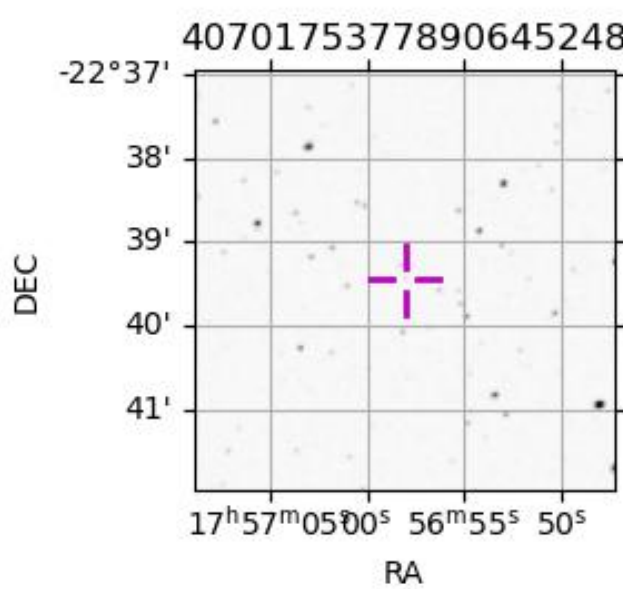
URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

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

| Obs | Location | lat | Elon | Target | Observed Events Interval | 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 | + + | OCT 22 15:08 - OCT 22 15:11 | 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 |



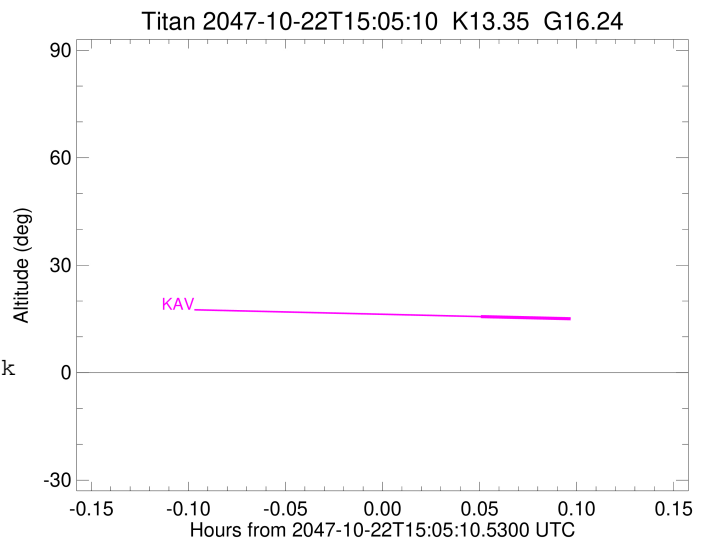
Titan 2047-10-22T15:05:10 K13.35 G16.24 dots 60.0 sec
 Pgt
 2047-10-22T15:05:10.5300 α: 17 56 58.1484 δ: -22 39 27.252 C/A 0.003" PA 357.08 deg v_sky +22.12 km/s D 10.49 AU
 Credit: Styled after SORA/Lucky Star



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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-10-22T15:09:37.560
Event type           : Pgt
: Titan occs: geocentric, topocentric
: 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       : 4070175377890645248
2Mass ID (if available) : 17565814-2239270
ICRS Star Coord at Epoch: 17h 56m 58.14844s -22:39:27.25237s
RUWE (>1.4 is poor) : 1.05
K magnitude           : 13.353
G magnitude           : 16.238
RP magnitude         : 15.384
BP magnitude         : 16.987
DUPflag              : 0
Distance (au)        : 10.489
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.12
Sun-Target sep (deg) : 60.83
Sun-Moon sep (deg)  : 13.14
B (ring opening deg) : 26.80
PA of pole (deg)    : 5.62
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.229
C/A sky separation (km) : 1745.8
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

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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 | 2047-10-22T15:08:11.372 | 15.65 | -40.92 | 2575.1 | 45.32 | 45.34 |
| Titan | E | 2047-10-22T15:11:03.729 | 15.03 | -41.62 | 2575.1 | 28.71 | 28.72 |