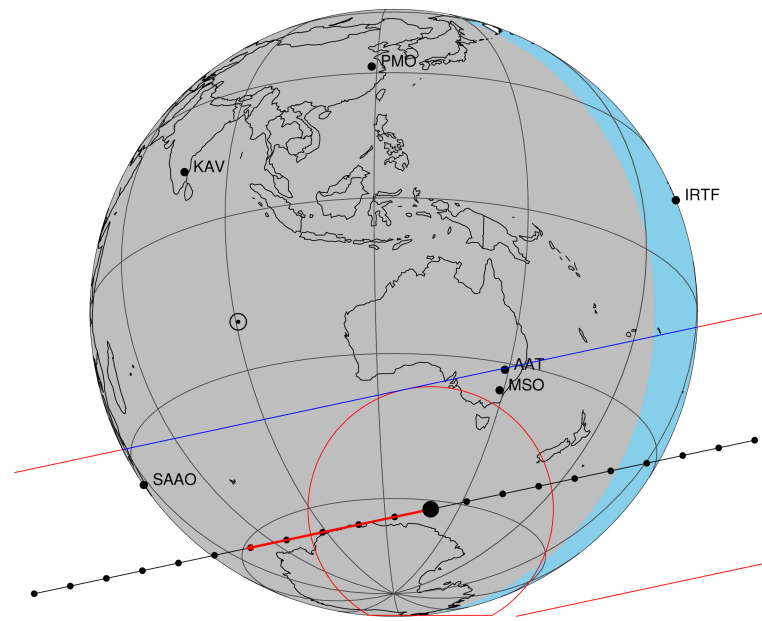


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-05-23T17:54:30.980
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4066731015909726464
 2Mass ID (if available) : 18115036-2218088

ICRS Star Coord at Epoch: 18h 11m 50.35839s -22:18:09.01899s
 RUWE (>1.4 is poor) : 0.95
 K magnitude : 11.530
 G magnitude : 15.220
 RP magnitude : 14.195
 BP magnitude : 16.245
 DUPflag : 0
 Distance (au) : 9.168
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -12.89
 Sun-Target sep (deg) : 149.13
 Sun-Moon sep (deg) : 136.64
 B (ring opening deg) : 26.11
 PA of pole (deg) : 5.88
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.634
 C/A sky separation (km) : 4218.4
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

Titan 2047-05-23T17:54:30 K11.53 G15.22 dots 60.0 sec
 Pt



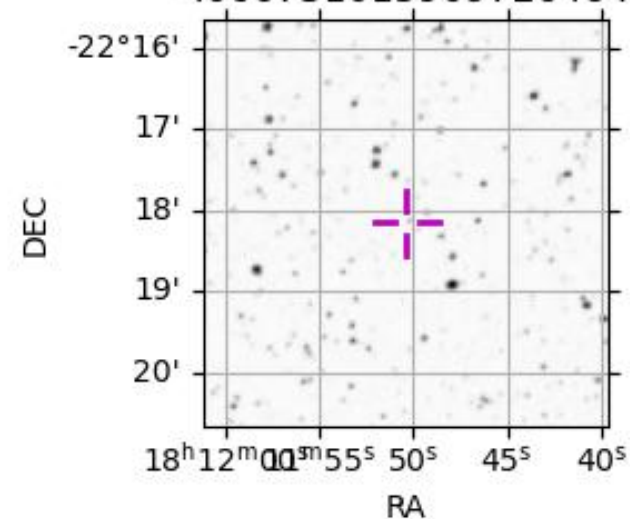
2047-05-23T17:54:30.9800 cc: 18 11 50.3584 & -22 18 09.019 C/A 0.631" PA 167.96 deg v_sky -12.89 km/s D 09.17 AU
 Credit: Styled after SORA/Lucky Star

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

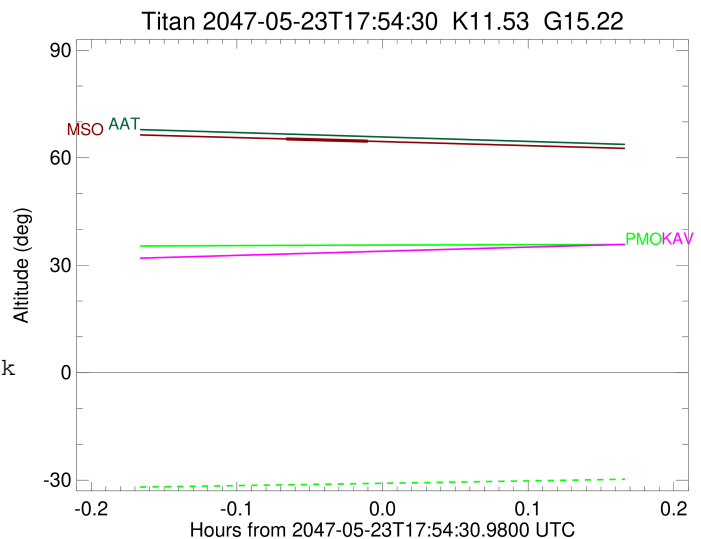
Observable events with sun below -5 deg and altitude above 5 deg

| 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 | | | 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 | + + | MAY 23 17:50 - MAY 23 17:53 | Pie |

4066731015909726464



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-05-23T17:52:14.130
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Observer code : MSO
 Location : Mt. Stromlo Observatory
 Latitude (deg) : -35.32000
 E. Longitude (deg) : 149.00833
 Altitude (km) : 0.770
 Gaia source ID : 4066731015909726464
 2Mass ID (if available) : 18115036-2218088
 ICRS Star Coord at Epoch: 18h 11m 50.35839s -22:18:09.01899s
 RUWE (>1.4 is poor) : 0.95
 K magnitude : 11.530
 G magnitude : 15.220
 RP magnitude : 14.195
 BP magnitude : 16.245
 DUPflag : 0
 Distance (au) : 9.168
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -12.89
 Sun-Target sep (deg) : 149.13
 Sun-Moon sep (deg) : 137.40
 B (ring opening deg) : 26.11
 PA of pole (deg) : 5.88
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.330
 C/A sky separation (km) : 2192.8
 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



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 | 2047-05-23T17:50:31.916 | 65.24 | -37.93 | 2575.1 | 36.13 | 36.14 |
| Titan | E | 2047-05-23T17:53:56.326 | 64.61 | -37.23 | 2575.1 | 60.49 | 60.50 |