

target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2047-08-04T09:56:36.890  
 Event type : Pgt  
 : Titan occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4070428123753070592  
 2Mass ID (if available) : 17505403-2225569

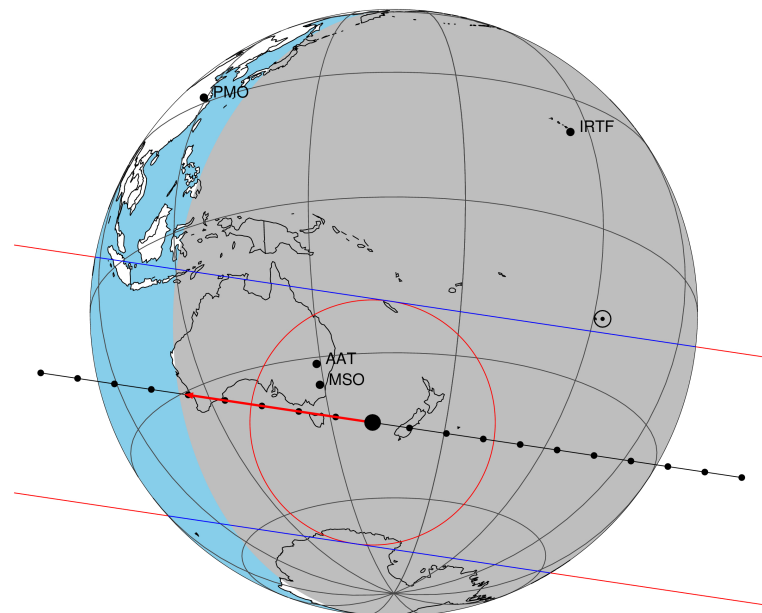
ICRS Star Coord at Epoch: 17h 50m 54.02320s -22:25:57.17964s  
 RUWE (>1.4 is poor) : 1.76  
 K magnitude : 11.735  
 G magnitude : 16.926  
 RP magnitude : 15.547  
 BP magnitude : 18.709  
 DUPflag : 0  
 Distance (au) : 9.283  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -13.05  
 Sun-Target sep (deg) : 136.56  
 Sun-Moon sep (deg) : 25.30  
 B (ring opening deg) : 26.71  
 PA of pole (deg) : 5.48  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.346  
 C/A sky separation (km) : 2331.2  
 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    | 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 | + +    | AUG 04 09:55 - AUG 04 10:01 | Pie     |
| SAAO | So. Afr. Astro. Obs. (Sutherland) | -32.4 | 20.8  |        |                             | Pnn     |
| MSO  | Mt. Stromlo Observatory           | -35.3 | 149.0 | + +    | AUG 04 09:55 - AUG 04 10:01 | Pie     |

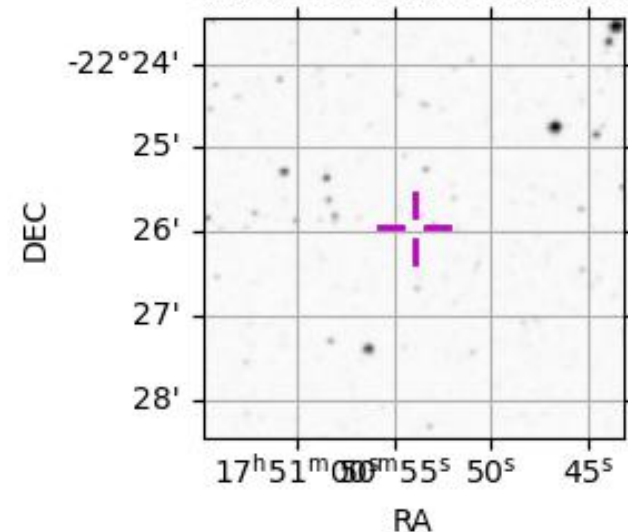
Titan 2047-08-04T09:56:36 K11.73 G16.93 dots 60.0 sec  
 Pgt



2047-08-04T09:56:36.8900 α: 17 50 54.0232 δ: -22 25 57.180 C/A 0.348" PA 188.50 deg v\_sky -13.05 km/s D 09.28 AU

Credit: Styled after SORA/Lucky Star

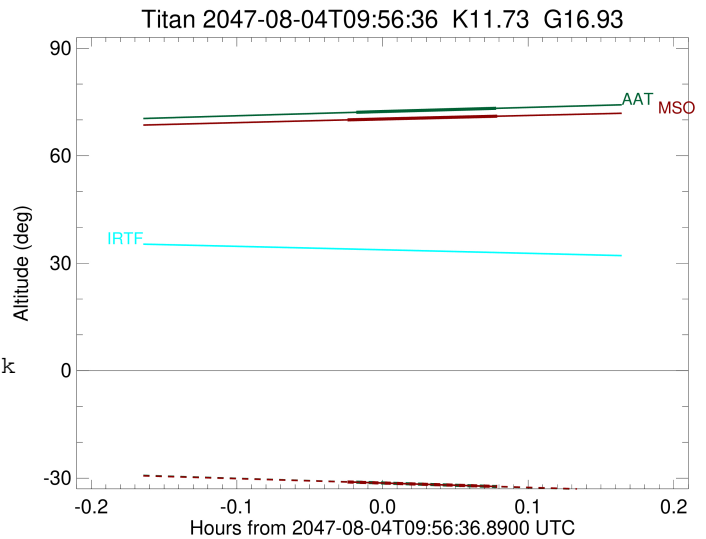
4070428123753070592



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target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-08-04T09:58:24.740
Event type            : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code         : AAT
Location              : Siding Spring (AAT)
Latitude (deg)       : -31.27703
E. Longitude (deg)   : 149.06608
Altitude (km)        : 1.164
Gaia source ID       : 4070428123753070592
2Mass ID (if available) : 17505403-2225569
ICRS Star Coord at Epoch: 17h 50m 54.02320s -22:25:57.17964s
RUWE (>1.4 is poor) : 1.76
K magnitude           : 11.735
G magnitude           : 16.926
RP magnitude          : 15.547
BP magnitude          : 18.709
DUPflag              : 0
Distance (au)        : 9.283
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -13.05
Sun-Target sep (deg) : 136.56
Sun-Moon sep (deg)   : 25.92
B (ring opening deg) : 26.71
PA of pole (deg)     : 5.48
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.158
C/A sky separation (km) : 1066.6
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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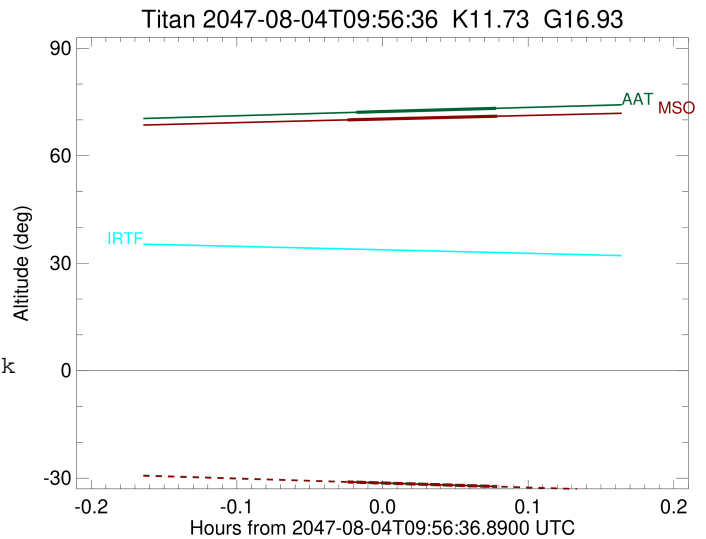
x: target alt < 5.0 deg or sun > -5.0 deg

| Target | I/E | UTC                     | alt   | alt-sun | radius | lat-geo | lat-geodetic |
|--------|-----|-------------------------|-------|---------|--------|---------|--------------|
| Titan  | I   | 2047-08-04T09:55:30.126 | 72.11 | -31.11  | 2575.1 | 23.98   | 23.99        |
| Titan  | E   | 2047-08-04T10:01:19.404 | 73.23 | -32.36  | 2575.1 | 19.43   | 19.44        |

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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-08-04T09:58:15.430
Event type           : Pgt
: Titan occs: geocentric, topocentric
: 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       : 4070428123753070592
2Mass ID (if available) : 17505403-2225569
ICRS Star Coord at Epoch: 17h 50m 54.02320s -22:25:57.17964s
RUWE (>1.4 is poor) : 1.76
K magnitude           : 11.735
G magnitude           : 16.926
RP magnitude         : 15.547
BP magnitude         : 18.709
DUPflag              : 0
Distance (au)        : 9.283
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -13.05
Sun-Target sep (deg) : 136.56
Sun-Moon sep (deg)   : 25.90
B (ring opening deg) : 26.71
PA of pole (deg)     : 5.48
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.096
C/A sky separation (km) : 643.1
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   | 2047-08-04T09:55:09.429 | 70.00 | -31.06  | 2575.1 | 15.20   | 15.20        |
| Titan  | E   | 2047-08-04T10:01:21.482 | 71.03 | -32.33  | 2575.1 | 10.56   | 10.56        |