

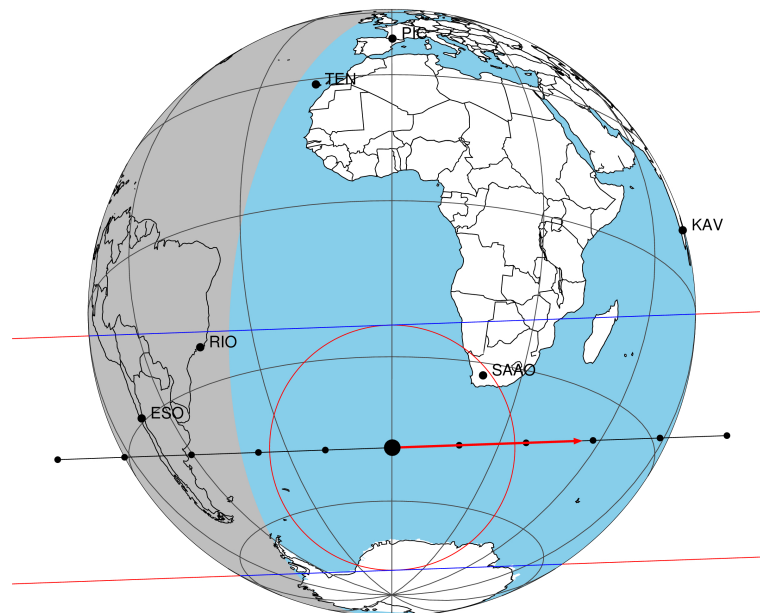
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2046-02-07T08:10:26.370
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4115003596460165504
 2Mass ID (if available) : 17181085-2138069

ICRS Star Coord at Epoch: 17h 18m 10.83537s -21:38:06.97813s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 13.190
 G magnitude : 15.568
 RP magnitude : 14.792
 BP magnitude : 16.165
 DUPflag : 0
 Distance (au) : 10.514
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 23.44
 Sun-Target sep (deg) : 57.79
 Sun-Moon sep (deg) : 72.65
 B (ring opening deg) : 26.60
 PA of pole (deg) : 4.73
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.373
 C/A sky separation (km) : 2841.6
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

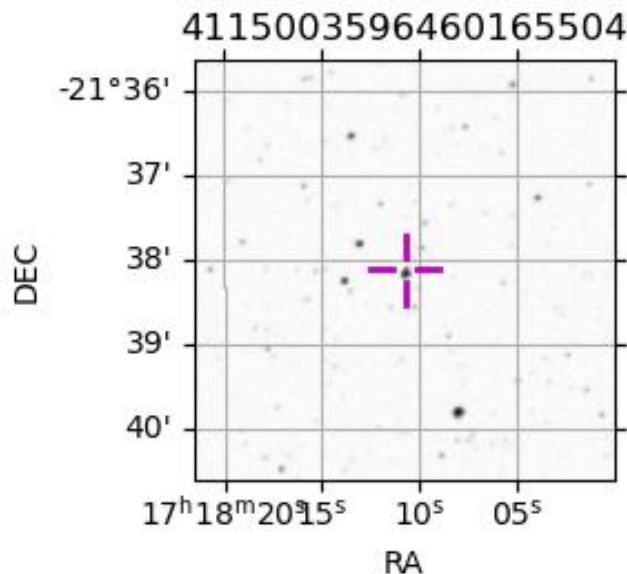
Observable events with sun below -5 deg and altitude above 5 deg

| 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 | | | | Pnn |
| RIO | Rio de Janeiro | -22.9 | 316.8 | + + | FEB 07 08:06 - FEB 07 08:08 | | Pie |
| ESO | European Southern Obs. (3.6m) | -29.3 | 289.3 | + + | FEB 07 08:04 - FEB 07 08:08 | | Pie |
| 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 2046-02-07T08:10:26 K13.19 G15.57 dots 60.0 sec
Pt



2046-02-07T08:10:26.3700 α: 17 18 10.8354 δ: -21 38 06.978 C/A 0.371" PA 177.93 deg v_sky +23.44 km/s D 10.51 AU
Credit: Styled after SORA/Lucky Star



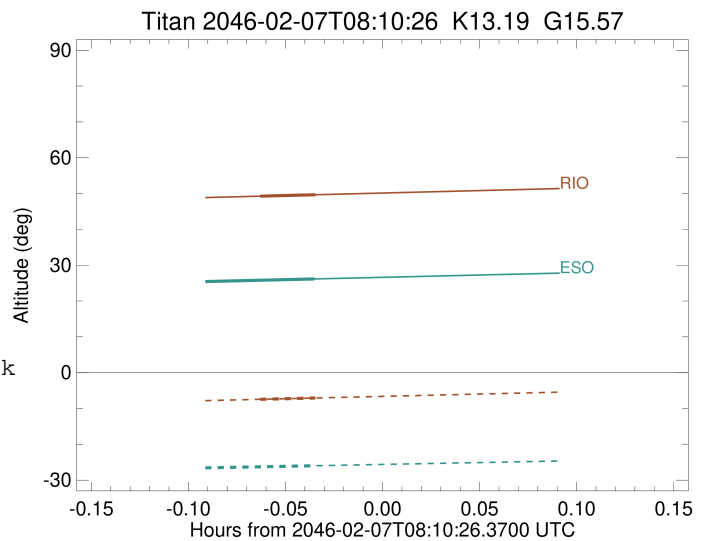
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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2046-02-07T08:07:30.760
Event type          : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code       : RIO
Location           : Rio de Janeiro
Latitude (deg)     : -22.89506
E. Longitude (deg) : 316.77708
Altitude (km)      : 0.033
Gaia source ID     : 4115003596460165504
2Mass ID (if available) : 17181085-2138069
ICRS Star Coord at Epoch: 17h 18m 10.83537s -21:38:06.97813s
RUWE (>1.4 is poor) : 0.96
K magnitude         : 13.190
G magnitude         : 15.568
RP magnitude        : 14.792
BP magnitude        : 16.165
DUPflag            : 0
Distance (au)      : 10.514
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 23.44
Sun-Target sep (deg) : 57.79
Sun-Moon sep (deg)  : 73.47
B (ring opening deg) : 26.60
PA of pole (deg)    : 4.73
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.299
C/A sky separation (km) : 2280.8
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 | 2046-02-07T08:06:39.057 | 49.27 | -7.44 | 2575.1 | 56.53 | 56.54 |
| Titan | E | 2046-02-07T08:08:22.470 | 49.66 | -7.07 | 2575.1 | 47.69 | 47.71 |



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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2046-02-07T08:06:36.780
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : ESO
Location             : European Southern Obs. (3.6m)
Latitude (deg)       : -29.26097
E. Longitude (deg)  : 289.26831
Altitude (km)        : 2.400
Gaia source ID       : 4115003596460165504
2Mass ID (if available) : 17181085-2138069
ICRS Star Coord at Epoch: 17h 18m 10.83537s -21:38:06.97813s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 13.190
G magnitude          : 15.568
RP magnitude         : 14.792
BP magnitude         : 16.165
DUPflag             : 0
Distance (au)        : 10.514
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 23.44
Sun-Target sep (deg) : 57.79
Sun-Moon sep (deg)  : 73.24
B (ring opening deg) : 26.60
PA of pole (deg)    : 4.73
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.108
C/A sky separation (km) : 825.1
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 | 2046-02-07T08:04:52.078 | 25.41 | -26.58 | 2575.1 | 22.32 | 22.33 |
| Titan | E | 2046-02-07T08:08:21.492 | 26.16 | -25.98 | 2575.1 | 10.93 | 10.93 |

