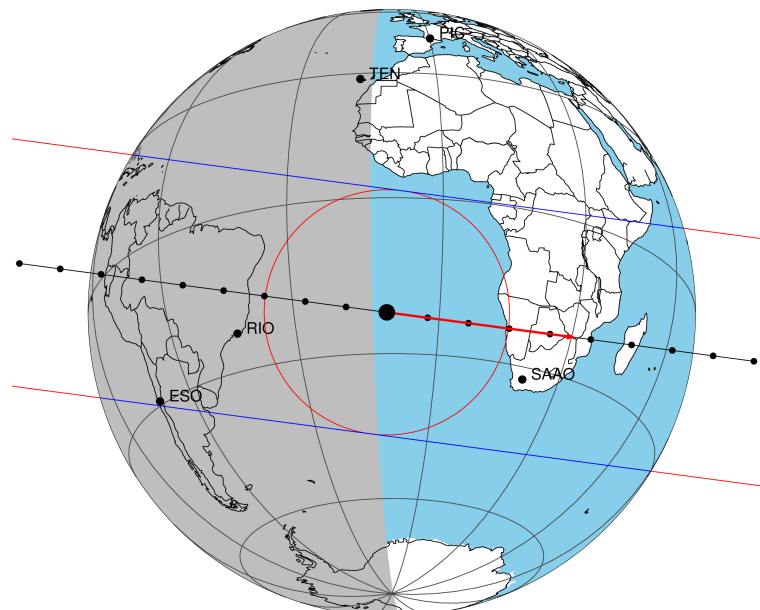


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-03-21T07:02:10.760
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4090711368820125440
 2Mass ID (if available) : 18152057-2218333

ICRS Star Coord at Epoch: 18h 15m 20.55459s -22:18:32.85127s
 RUWE (>1.4 is poor) : 3.78
 K magnitude : 13.475
 G magnitude : 18.130
 RP magnitude : 16.342
 BP magnitude : 18.519
 DUPflag : 0
 Distance (au) : 10.062
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 14.40
 Sun-Target sep (deg) : 86.38
 Sun-Moon sep (deg) : 27.96
 B (ring opening deg) : 26.03
 PA of pole (deg) : 5.94
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.002
 C/A sky separation (km) : 12.3
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

Titan 2047-03-21T07:02:10 K13.47 G18.13 dots 60.0 sec
 Pgt

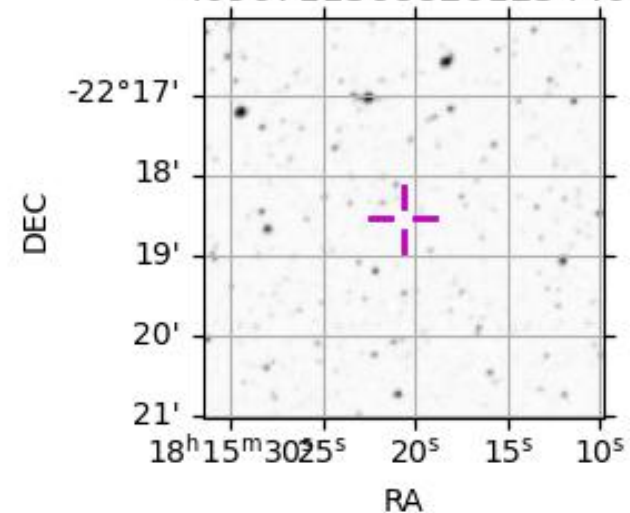


2047-03-21T07:02:10.7600 α: 18 15 20.5546 δ: -22 18 32.851 C/A 0.001" PA 187.78 deg v_sky +14.40 km/s D 10.06 AU
 Credit: Styled after SORA/Lucky Star

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

| Obs | Location | lat | Elon | Target | Observed Events Interval | 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 | + + | MAR 21 06:55 - MAR 21 07:01 | Pie |
| ESO | European Southern Obs. (3.6m) | -29.3 | 289.3 | + + | MAR 21 06:56 - MAR 21 06:57 | 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 |

4090711368820125440

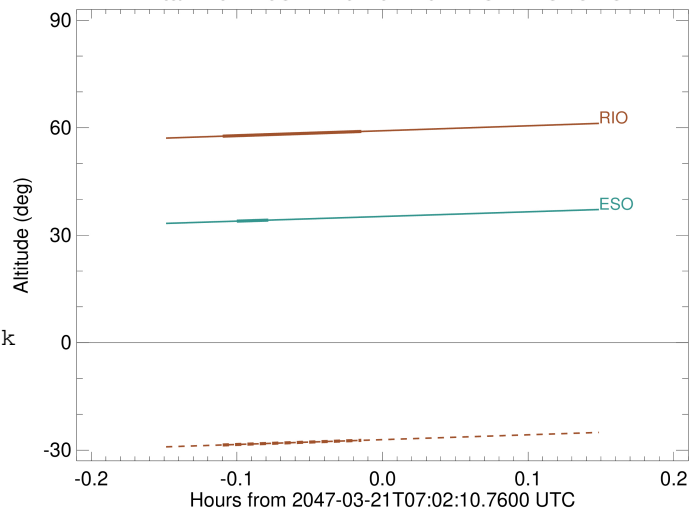


```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-03-21T06:58:26.570
Event type           : Pgt
: Titan occs: geocentric, topocentric
: 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       : 4090711368820125440
2Mass ID (if available) : 18152057-2218333
ICRS Star Coord at Epoch: 18h 15m 20.55459s -22:18:32.85127s
RUWE (>1.4 is poor) : 3.78
K magnitude          : 13.475
G magnitude          : 18.130
RP magnitude         : 16.342
BP magnitude         : 18.519
DUPflag             : 0
Distance (au)        : 10.062
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 14.40
Sun-Target sep (deg) : 86.38
Sun-Moon sep (deg)   : 28.76
B (ring opening deg) : 26.03
PA of pole (deg)     : 5.94
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.120
C/A sky separation (km) : 872.9
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

```

Titan 2047-03-21T07:02:10 K13.47 G18.13



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 | 2047-03-21T06:55:34.460 | 57.63 | -28.56 | 2575.1 | -19.68 | -19.69 |
| Titan | E | 2047-03-21T07:01:18.771 | 58.95 | -27.27 | 2575.1 | -15.78 | -15.79 |

```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-03-21T06:56:49.740
Event type           : Pgt
: Titan occs: geocentric, topocentric
: 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       : 4090711368820125440
2Mass ID (if available) : 18152057-2218333
ICRS Star Coord at Epoch: 18h 15m 20.55459s -22:18:32.85127s
RUWE (>1.4 is poor) : 3.78
K magnitude          : 13.475
G magnitude          : 18.130
RP magnitude         : 16.342
BP magnitude         : 18.519
DUPflag             : 0
Distance (au)        : 10.062
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 14.40
Sun-Target sep (deg) : 86.38
Sun-Moon sep (deg)  : 28.85
B (ring opening deg) : 26.03
PA of pole (deg)    : 5.94
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.344
C/A sky separation (km) : 2511.0
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 | 2047-03-21T06:56:09.658 | 33.92 | -48.31 | 2575.1 | -62.06 | -62.07 |
| Titan | E | 2047-03-21T06:57:29.840 | 34.21 | -48.08 | 2575.1 | -60.18 | -60.19 |

