

```

target           : Titan
target radius (km) : 2575.15
C/A epoch       : 2046-09-30T21:32:19.250
Event type      : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Gaia source ID  : 4127585106171339904
2Mass ID (if available) : 17051631-2137051

ICRS Star Coord at Epoch: 17h 05m 16.31171s -21:37:05.22786s
RUWE (>1.4 is poor) : 0.93
K magnitude     : 13.601
G magnitude     : 16.434
RP magnitude    : 15.599
BP magnitude    : 17.157
DUPflag        : 0
Distance (au)   : 10.330
f0 (km)        : 0.00
g0 (km)        : 0.00
skyplane vel. (km/s) : 14.30
Sun-Target sep (deg) : 70.06
Sun-Moon sep (deg) : 58.90
B (ring opening deg) : 26.82
PA of pole (deg) : 4.41
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.968
C/A sky separation (km) : 7251.5
NAIF SPICE kernels : RAJobs_U111+rgf16.spk

```

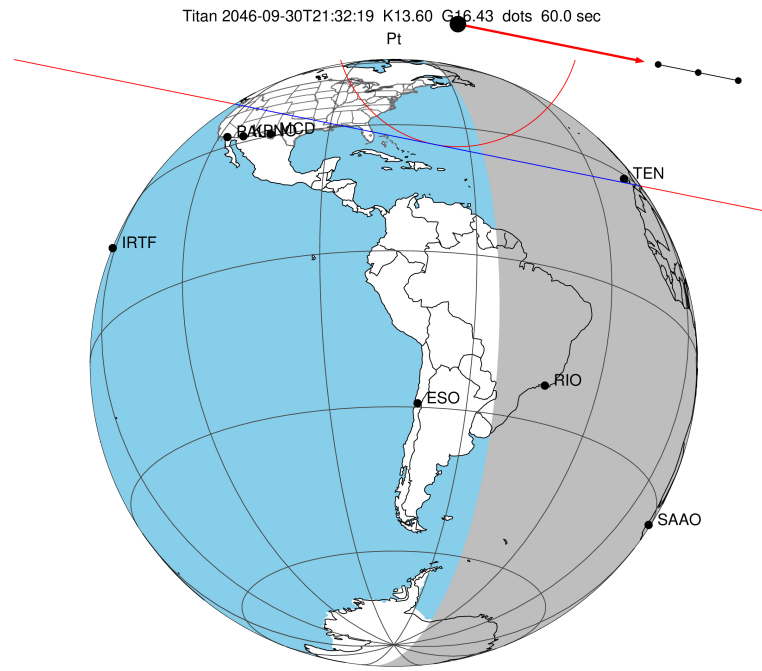
```

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

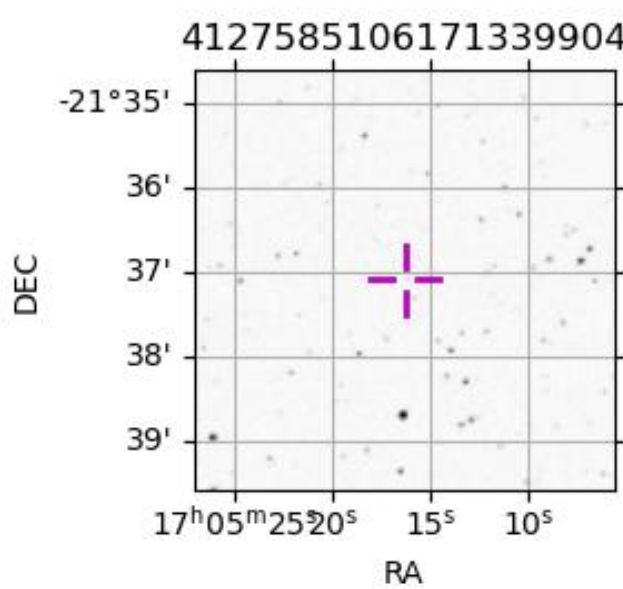
```

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

| Obs | Location | lat | Elon | Target | Observed Events Interval | OEcode |
|------|-----------------------------------|-------|-------|--------|-----------------------------|--------|
| 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 | + + | SEP 30 21:36 - SEP 30 21:37 | Pie |
| 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 | | | Pnn |



2046-09-30T21:32:19.2500 cc: 17 05 16.31171 s -21 37 05.228 C/A 0.967" PA 11.41 deg v_sky +14.30 km/s D 10.33 AU
 Credit: Styled after SORA/Lucky Star



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2046-09-30T21:37:02.600
Event type            : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code         : TEN
Location              : Teide Obs./Tenerife
Latitude (deg)        : 28.30050
E. Longitude (deg)    : 343.48909
Altitude (km)         : 2.395
Gaia source ID        : 4127585106171339904
2Mass ID (if available) : 17051631-2137051
ICRS Star Coord at Epoch: 17h 05m 16.31171s -21:37:05.22786s
RUWE (>1.4 is poor)  : 0.93
K magnitude           : 13.601
G magnitude           : 16.434
RP magnitude          : 15.599
BP magnitude          : 17.157
DUPflag              : 0
Distance (au)         : 10.330
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 14.30
Sun-Target sep (deg)  : 70.06
Sun-Moon sep (deg)    : 59.51
B (ring opening deg)  : 26.82
PA of pole (deg)     : 4.41
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (" ) : 0.342
C/A sky separation (km) : 2564.0
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 | 2046-09-30T21:36:45.684 | 13.26 | -36.51 | 2575.1 | -63.15 | -63.16 |
| Titan | E | 2046-09-30T21:37:19.519 | 13.15 | -36.63 | 2575.0 | -60.83 | -60.84 |

