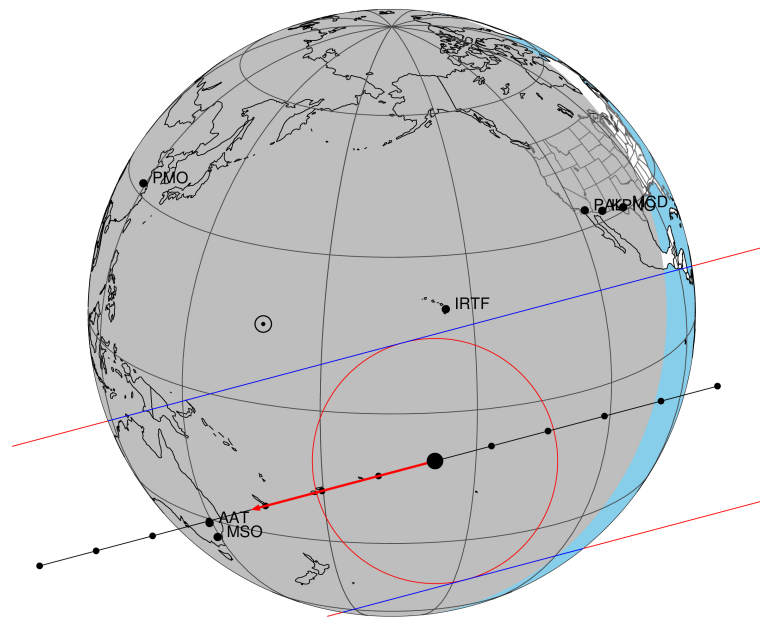


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2030-11-04T12:33:09.400
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 48212111705718528
 2Mass ID (if available) : 04211068+1923074

ICRS Star Coord at Epoch: 04h 21m 10.70367s +19:23:07.13012s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 13.139
 G magnitude : 16.273
 RP magnitude : 15.340
 BP magnitude : 17.140
 DUPflag : 0
 Distance (au) : 8.160
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -20.45
 Sun-Target sep (deg) : 154.86
 Sun-Moon sep (deg) : 90.06
 B (ring opening deg) : -25.27
 PA of pole (deg) : -3.16
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.548
 C/A sky separation (km) : 3240.4
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

Titan 2030-11-04T12:33:09 K13.14 G16.27 dots 60.0 sec
 Pt

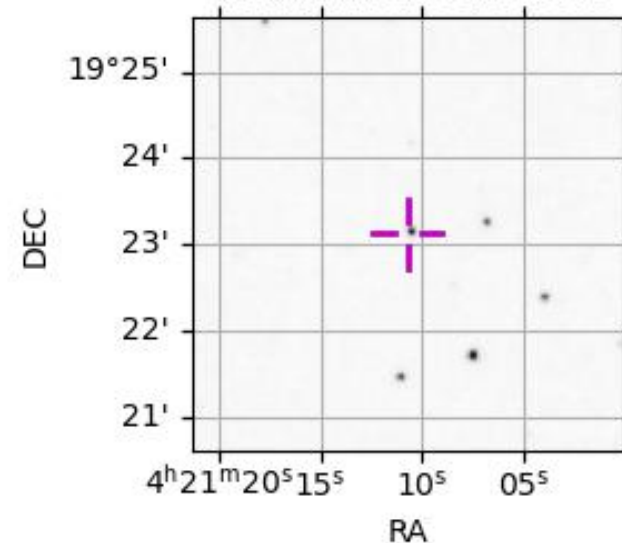


2030-11-04T12:33:09.4000 α: 04 21 10.7037 δ: +19 23 07.130 C/A 0.548" PA 165.15 deg v_sky -20.45 km/s D 08.16 AU
 Credit: Styled after SORA/Lucky Star

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

Obs	Location	lat	Elon	Target	Observed Events Interval	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			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	+ +	NOV 04 12:34 - NOV 04 12:39	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	NOV 04 12:34 - NOV 04 12:39	Pie

48212111705718528



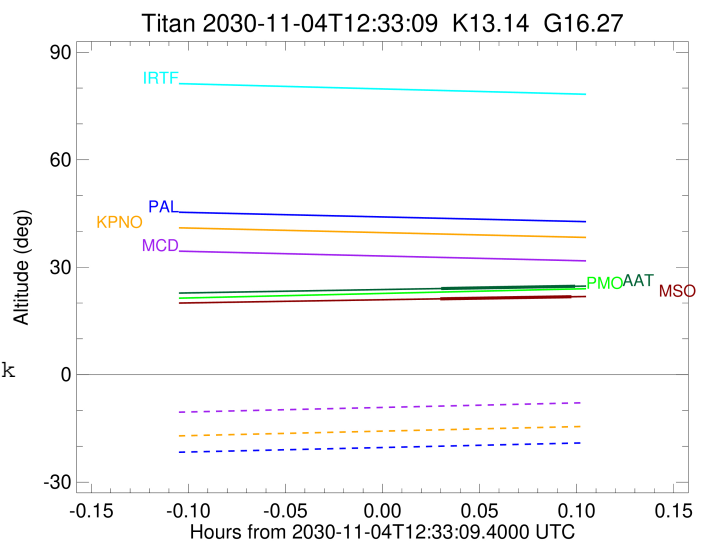
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2030-11-04T12:37:02.230
Event type            : Pt
: Titan occs: topocentric, not geocentric
: 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        : 48212111705718528
2Mass ID (if available) : 04211068+1923074
ICRS Star Coord at Epoch: 04h 21m 10.70367s +19:23:07.13012s
RUWE (>1.4 is poor)  : 1.02
K magnitude           : 13.139
G magnitude           : 16.273
RP magnitude          : 15.340
BP magnitude          : 17.140
DUPflag              : 0
Distance (au)         : 8.160
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -20.45
Sun-Target sep (deg)  : 154.86
Sun-Moon sep (deg)    : 90.45
B (ring opening deg)  : -25.27
PA of pole (deg)      : -3.16
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.014
C/A sky separation (km) : 81.0
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	2030-11-04T12:34:57.918	24.04	-40.28	2575.1	-11.79	-11.80
Titan	E	2030-11-04T12:39:06.546	24.67	-40.62	2575.1	8.54	8.55



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2030-11-04T12:36:57.930
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       : 48212111705718528
2Mass ID (if available) : 04211068+1923074
ICRS Star Coord at Epoch: 04h 21m 10.70367s +19:23:07.13012s
RUWE (>1.4 is poor) : 1.02
K magnitude           : 13.139
G magnitude           : 16.273
RP magnitude          : 15.340
BP magnitude          : 17.140
DUPflag              : 0
Distance (au)         : 8.160
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -20.45
Sun-Target sep (deg) : 154.86
Sun-Moon sep (deg)   : 90.40
B (ring opening deg) : -25.27
PA of pole (deg)     : -3.16
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.069
C/A sky separation (km) : 405.8
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	2030-11-04T12:34:55.038	21.17	-36.54	2575.1	-18.32	-18.32
Titan	E	2030-11-04T12:39:00.828	21.75	-36.84	2575.2	2.01	2.01

