

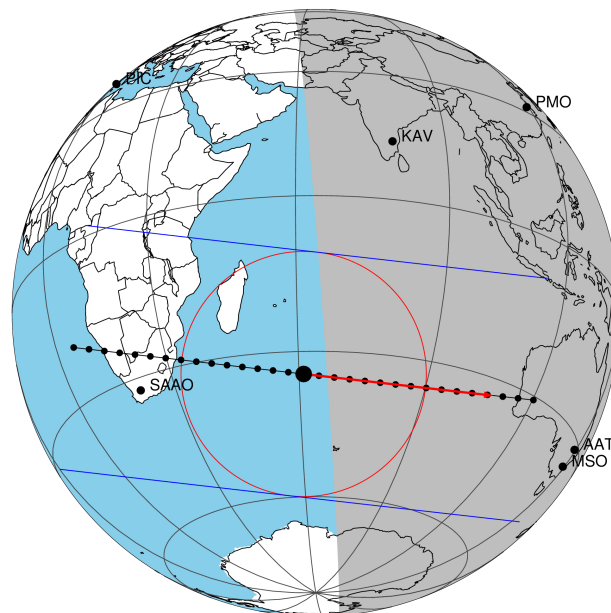
```

target           : Titan
target radius (km) : 2575.15
C/A epoch       : 2048-10-03T13:35:02.200
Event type      : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Gaia source ID  : 4079168725801290880
2Mass ID (if available) : 18391757-2246196

ICRS Star Coord at Epoch: 18h 39m 17.59216s -22:46:19.46542s
RUWE (>1.4 is poor) : 0.98
K magnitude     : 12.862
G magnitude     : 15.691
RP magnitude    : 14.868
BP magnitude    : 16.375
DUPflag        : 0
Distance (au)   : 9.997
f0 (km)         : 0.00
g0 (km)         : 0.00
skyplane vel. (km/s) : 5.40
Sun-Target sep (deg) : 88.71
Sun-Moon sep (deg) : 140.11
B (ring opening deg) : 25.90
PA of pole (deg) : 6.35
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.177
C/A sky separation (km) : 1286.8
NAIF SPICE kernels : RAJobs_U111+rgf16.spk

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Titan 2048-10-03T13:35:02 K12.86 G15.69 dots 60.0 sec  
Pgt



2048-10-03T13:35:02.2000 α: 18 39 17.5922 δ: -22 46 19.465 C/A 0.180" PA 186.52 deg v<sub>sky</sub> + 5.40 km/s D 10.00 AU  
Credit: Styled after SORA/Lucky Star

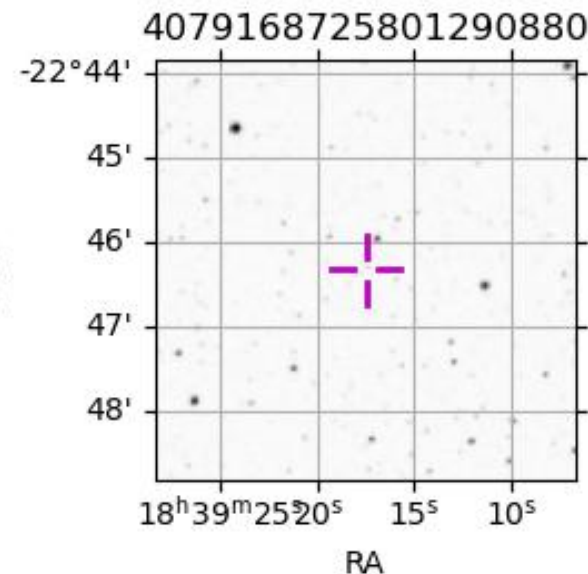
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URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp

```

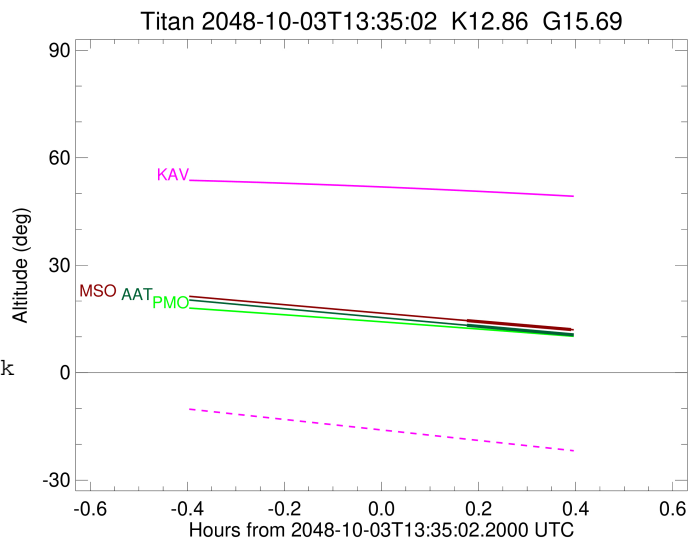
Observable events with sun below -5 deg and altitude above 5 deg

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				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	+ +	OCT 03 13:45 - OCT 03 13:59		Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8				Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	OCT 03 13:45 - OCT 03 13:58		Pie



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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2048-10-03T13:52:42.490
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       : 4079168725801290880
2Mass ID (if available) : 18391757-2246196
ICRS Star Coord at Epoch: 18h 39m 17.59216s -22:46:19.46542s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 12.862
G magnitude           : 15.691
RP magnitude          : 14.868
BP magnitude          : 16.375
DUPflag              : 0
Distance (au)         : 9.998
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 5.40
Sun-Target sep (deg) : 88.71
Sun-Moon sep (deg)   : 139.73
B (ring opening deg) : 25.90
PA of pole (deg)     : 6.35
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (" ) : 0.156
C/A sky separation (km) : 1133.9
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
    
```

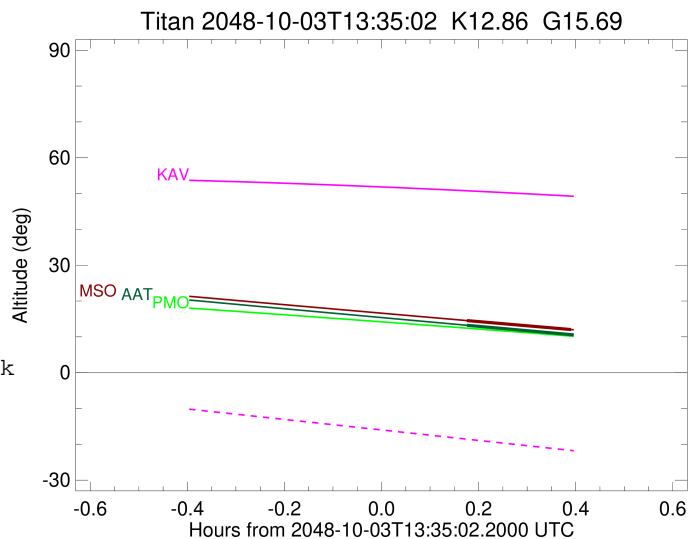


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2048-10-03T13:45:31.922	13.24	-54.49	2575.1	-21.98	-21.99
Titan	E	2048-10-03T13:59:52.294	10.34	-54.48	2575.1	-24.74	-24.75

```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2048-10-03T13:52:02.150
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       : 4079168725801290880
2Mass ID (if available) : 18391757-2246196
ICRS Star Coord at Epoch: 18h 39m 17.59216s -22:46:19.46542s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 12.862
G magnitude           : 15.691
RP magnitude          : 14.868
BP magnitude          : 16.375
DUPflag              : 0
Distance (au)        : 9.998
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 5.40
Sun-Target sep (deg) : 88.71
Sun-Moon sep (deg)   : 139.77
B (ring opening deg) : 25.90
PA of pole (deg)     : 6.35
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.206
C/A sky separation (km) : 1496.5
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

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Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2048-10-03T13:45:31.911	14.55	-50.46	2575.1	-30.26	-30.27
Titan	E	2048-10-03T13:58:31.792	12.02	-50.47	2575.1	-32.81	-32.83