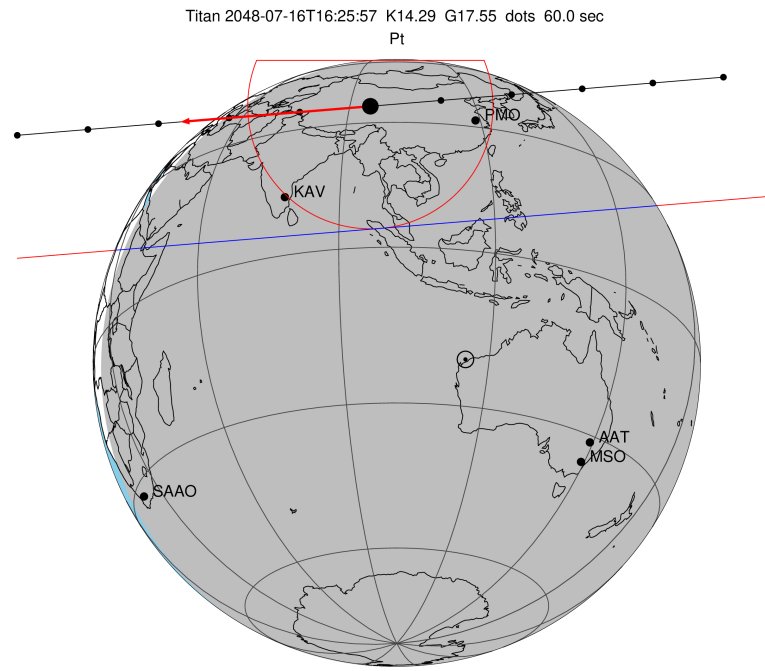


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2048-07-16T16:25:57.730
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4078860656386748800
 2Mass ID (if available) : 18475845-2228118

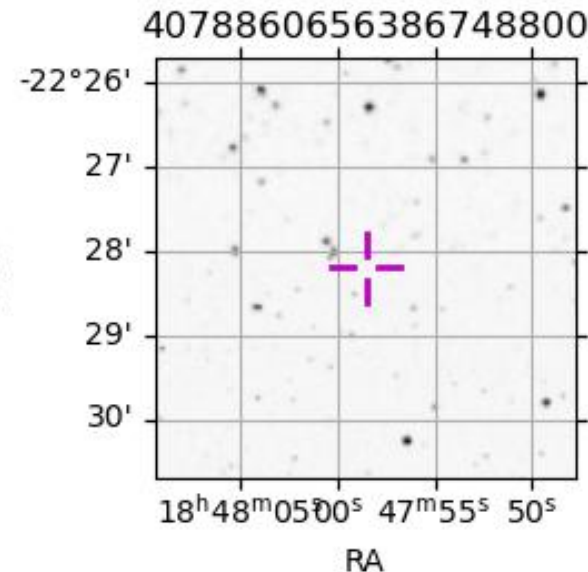
ICRS Star Coord at Epoch: 18h 47m 58.45919s -22:28:12.10035s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.290
 G magnitude : 17.549
 RP magnitude : 16.579
 BP magnitude : 18.552
 DUPflag : 0
 Distance (au) : 9.036
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -24.79
 Sun-Target sep (deg) : 166.92
 Sun-Moon sep (deg) : 103.04
 B (ring opening deg) : 25.37
 PA of pole (deg) : 6.45
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.827
 C/A sky separation (km) : 5417.8
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk



2048-07-16T16:25:57.7300 cc: 18 47 58.4592 d: -22 28 12.100 C/A 0.827" PA 355.30 deg v_sky -24.79 km/s D 09.04 AU
 Credit: Styled after SORA/Lucky Star

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	+ +	JUL 16 16:22 - JUL 16 16:26	Pie
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	+ +	JUL 16 16:26 - JUL 16 16:28	Pie
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



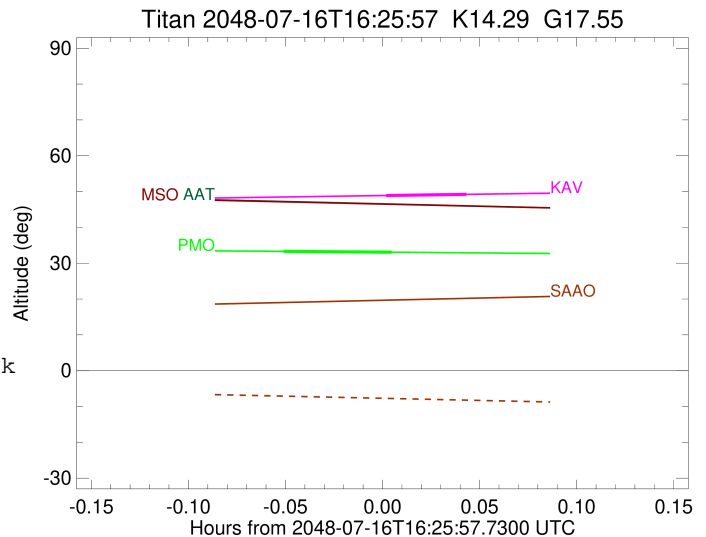
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2048-07-16T16:24:34.620
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : PMO
Location             : Purple Mtn Obs. Nanking
Latitude (deg)       : 32.06667
E. Longitude (deg)   : 118.82089
Altitude (km)        : 0.364
Gaia source ID       : 4078860656386748800
2Mass ID (if available) : 18475845-2228118
ICRS Star Coord at Epoch: 18h 47m 58.45919s -22:28:12.10035s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 14.290
G magnitude           : 17.549
RP magnitude          : 16.579
BP magnitude          : 18.552
DUPflag              : 0
Distance (au)         : 9.036
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -24.79
Sun-Target sep (deg) : 166.92
Sun-Moon sep (deg)   : 103.46
B (ring opening deg) : 25.37
PA of pole (deg)     : 6.45
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.076
C/A sky separation (km): 498.3
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

```

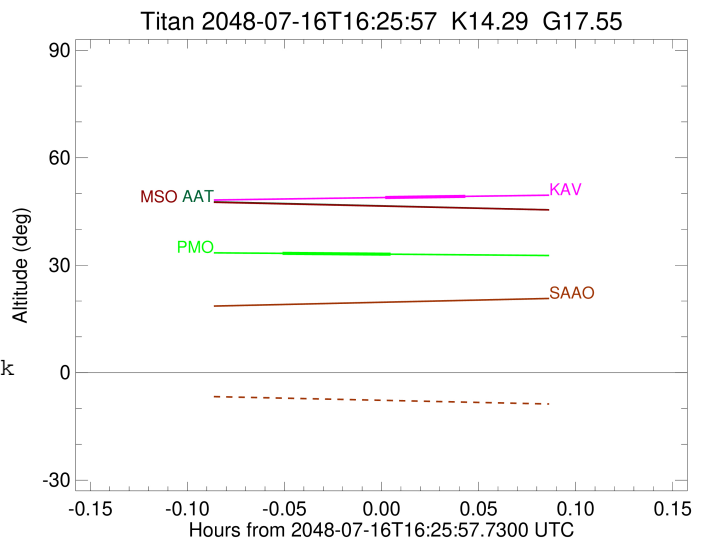
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2048-07-16T16:22:54.224	33.30	-36.87	2575.1	-19.91	-19.92
Titan	E	2048-07-16T16:26:15.010	33.06	-36.82	2575.2	-0.15	-0.15



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2048-07-16T16:27:18.690
Event type          : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code       : KAV
Location            : Kavalur Observatory
Latitude (deg)      : 12.57556
E. Longitude (deg)  : 78.83167
Altitude (km)       : 0.722
Gaia source ID      : 4078860656386748800
2Mass ID (if available) : 18475845-2228118
ICRS Star Coord at Epoch: 18h 47m 58.45919s -22:28:12.10035s
RUWE (>1.4 is poor) : 1.00
K magnitude          : 14.290
G magnitude          : 17.549
RP magnitude         : 16.579
BP magnitude         : 18.552
DUPflag             : 0
Distance (au)       : 9.036
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -24.79
Sun-Target sep (deg) : 166.92
Sun-Moon sep (deg)  : 103.80
B (ring opening deg) : 25.37
PA of pole (deg)    : 6.45
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (" ) : 0.267
C/A sky separation (km) : 1750.2
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	2048-07-16T16:26:03.790	48.89	-41.06	2575.1	-47.00	-47.01
Titan	E	2048-07-16T16:28:33.579	49.21	-41.50	2575.1	-28.25	-28.27