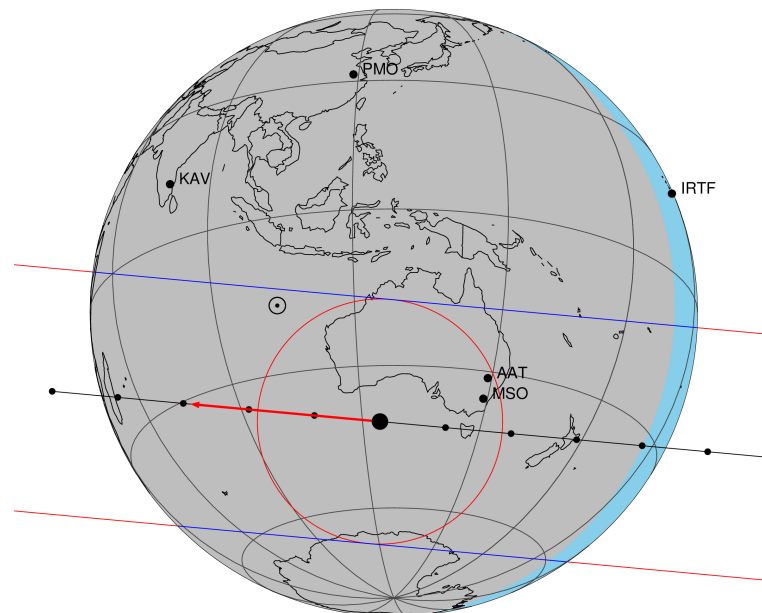


target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2045-05-07T16:59:41.790  
 Event type : Pgt  
 : Titan occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4131214250435171072  
 2Mass ID (if available) : 16321573-1955079

ICRS Star Coord at Epoch: 16h 32m 15.73180s -19:55:08.03627s  
 RUWE (>1.4 is poor) : 1.03  
 K magnitude : 12.699  
 G magnitude : 15.446  
 RP magnitude : 14.626  
 BP magnitude : 16.138  
 DUPflag : 0  
 Distance (au) : 9.052  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -23.03  
 Sun-Target sep (deg) : 157.40  
 Sun-Moon sep (deg) : 52.33  
 B (ring opening deg) : 25.65  
 PA of pole (deg) : 3.48  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.351  
 C/A sky separation (km) : 2305.4  
 NAIF SPICE kernels : RAJobs\_U111+rgf16.spk

Titan 2045-05-07T16:59:41 K12.70 G15.45 dots 60.0 sec  
 Pgt



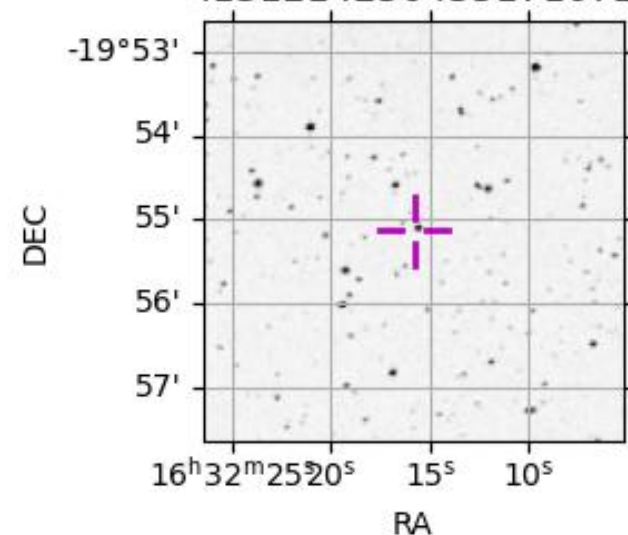
2045-05-07T16:59:41.7900 α: 16 32 15.7318 δ: -19 55 08.036 C/A 0.351" PA 185.25 deg v\_sky -23.04 km/s D 09.05 AU

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	+ +	MAY 07 16:56 - MAY 07 16:59	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	MAY 07 16:56 - MAY 07 17:00	Pie

4131214250435171072



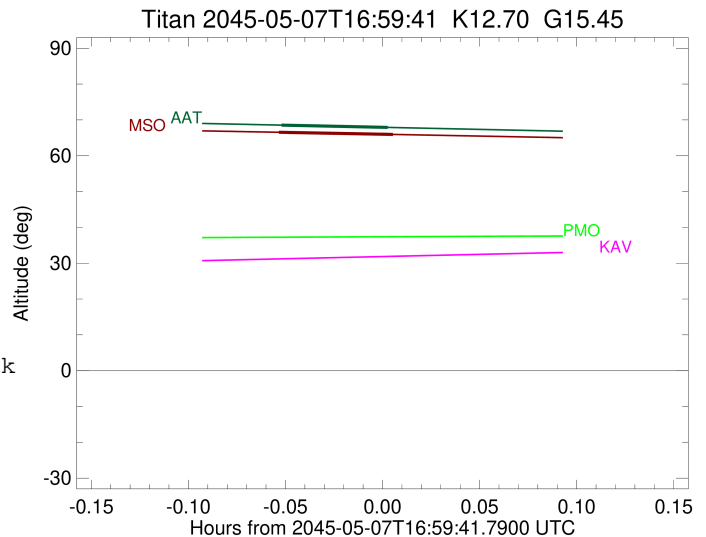
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2045-05-07T16:58:12.690
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       : 4131214250435171072
2Mass ID (if available) : 16321573-1955079
ICRS Star Coord at Epoch: 16h 32m 15.73180s -19:55:08.03627s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 12.699
G magnitude           : 15.446
RP magnitude          : 14.626
BP magnitude          : 16.138
DUPflag              : 0
Distance (au)         : 9.052
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -23.03
Sun-Target sep (deg) : 157.40
Sun-Moon sep (deg)   : 52.81
B (ring opening deg) : 25.65
PA of pole (deg)     : 3.48
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.172
C/A sky separation (km) : 1132.0
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	2045-05-07T16:56:33.877	68.54	-47.69	2575.1	24.95	24.96
Titan	E	2045-05-07T16:59:51.494	67.90	-46.99	2575.1	21.73	21.74



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2045-05-07T16:58:15.010
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       : 4131214250435171072
2Mass ID (if available) : 16321573-1955079
ICRS Star Coord at Epoch: 16h 32m 15.73180s -19:55:08.03627s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 12.699
G magnitude          : 15.446
RP magnitude         : 14.626
BP magnitude         : 16.138
DUPflag             : 0
Distance (au)        : 9.052
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -23.03
Sun-Target sep (deg) : 157.40
Sun-Moon sep (deg)   : 52.80
B (ring opening deg) : 25.65
PA of pole (deg)     : 3.48
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.106
C/A sky separation (km) : 695.4
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	2045-05-07T16:56:29.014	66.54	-46.98	2575.1	15.71	15.72
Titan	E	2045-05-07T17:00:01.005	65.94	-46.27	2575.1	12.45	12.46

