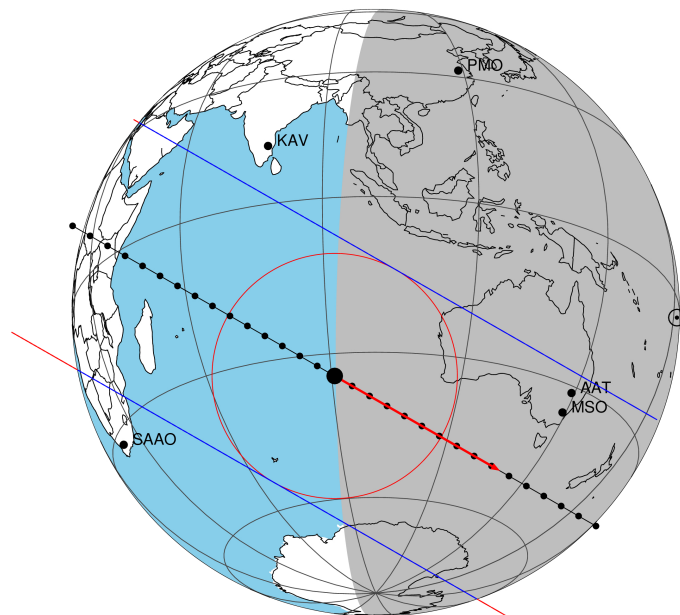


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-09-13T11:41:40.340
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068969763402064128
 2Mass ID (if available) : 17490427-2232004

ICRS Star Coord at Epoch: 17h 49m 04.27466s -22:32:00.61384s
 RUWE (>1.4 is poor) : 0.97
 K magnitude : 12.109
 G magnitude : 16.813
 RP magnitude : 15.619
 BP magnitude : 18.476
 DUPflag : 0
 Distance (au) : 9.866
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 7.04
 Sun-Target sep (deg) : 97.51
 Sun-Moon sep (deg) : 175.73
 B (ring opening deg) : 26.86
 PA of pole (deg) : 5.45
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.214
 C/A sky separation (km) : 1532.3
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

Titan 2047-09-13T11:41:40 K12.11 G16.81 dots 60.0 sec
 Pgt

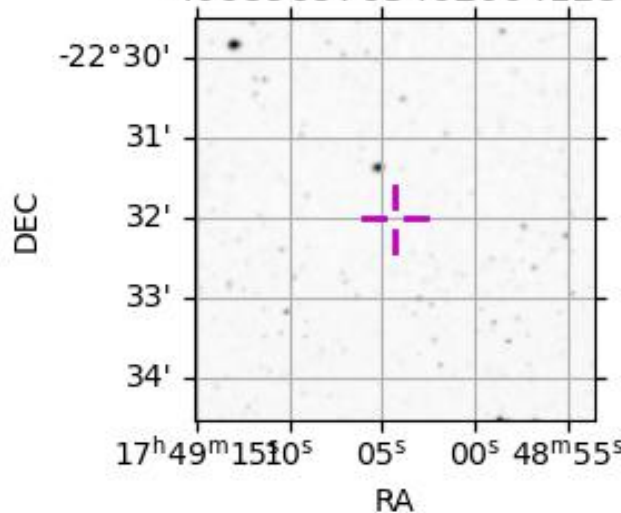


2047-09-13T11:41:40.3400 α: 17 49 04.2747 δ: -22 32 00.614 C/A 0.221" PA 209.86 deg v_sky + 7.04 km/s D 09.87 AU
 Credit: Styled after SORA/Lucky Star

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

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
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	+ +	SEP 13 11:48 - SEP 13 11:56	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	SEP 13 11:47 - SEP 13 11:57	Pie

4068969763402064128



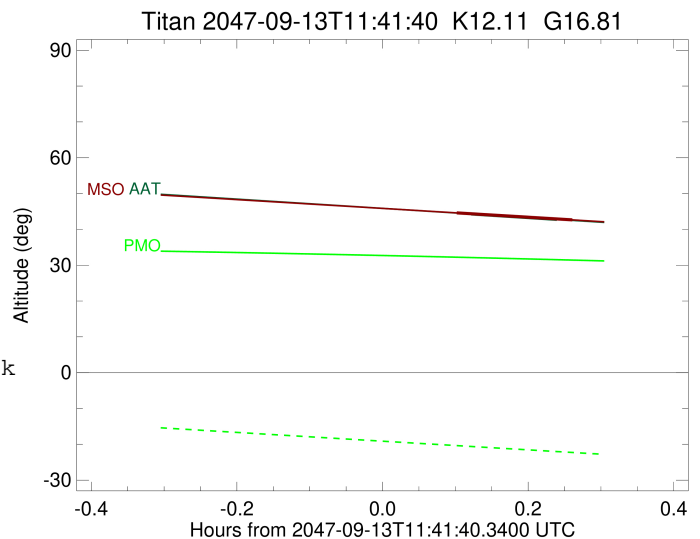
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-09-13T11:52:30.690
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       : 4068969763402064128
2Mass ID (if available) : 17490427-2232004
ICRS Star Coord at Epoch: 17h 49m 04.27466s -22:32:00.61384s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 12.109
G magnitude           : 16.813
RP magnitude         : 15.619
BP magnitude         : 18.476
DUPflag              : 0
Distance (au)        : 9.866
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 7.04
Sun-Target sep (deg) : 97.51
Sun-Moon sep (deg)   : 175.14
B (ring opening deg) : 26.86
PA of pole (deg)     : 5.45
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.298
C/A sky separation (km) : 2130.0
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

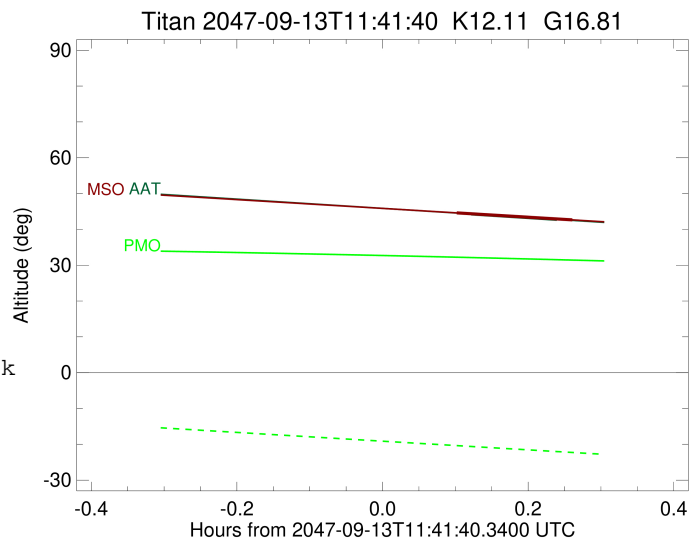
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2047-09-13T11:48:56.343	44.30	-48.83	2575.2	27.52	27.53
Titan	E	2047-09-13T11:56:05.033	42.77	-50.06	2575.1	61.60	61.62



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-09-13T11:52:35.070
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       : 4068969763402064128
2Mass ID (if available) : 17490427-2232004
ICRS Star Coord at Epoch: 17h 49m 04.27466s -22:32:00.61384s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 12.109
G magnitude           : 16.813
RP magnitude          : 15.619
BP magnitude          : 18.476
DUPflag              : 0
Distance (au)        : 9.866
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 7.04
Sun-Target sep (deg) : 97.51
Sun-Moon sep (deg)   : 175.14
B (ring opening deg) : 26.86
PA of pole (deg)     : 5.45
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.235
C/A sky separation (km) : 1682.5
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

```



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	2047-09-13T11:47:46.900	44.60	-46.18	2575.1	14.40	14.41
Titan	E	2047-09-13T11:57:23.270	42.63	-47.70	2575.0	54.20	54.22