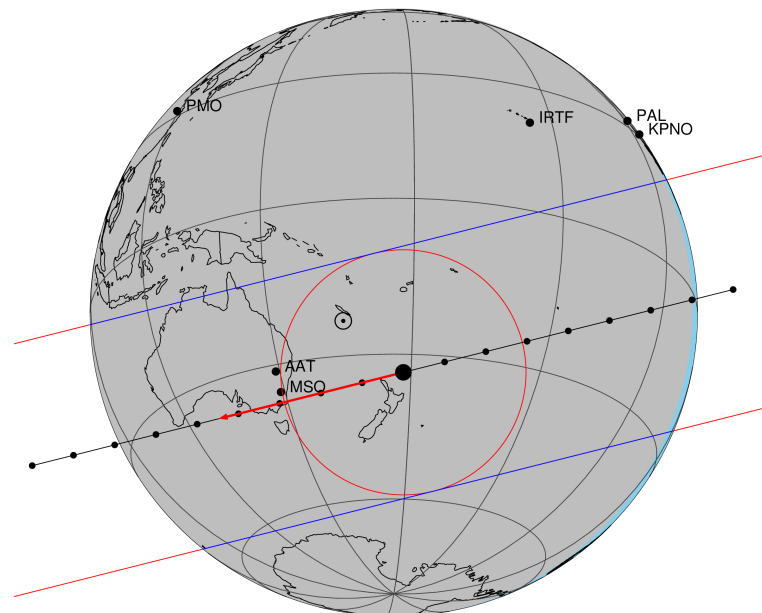


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2048-06-24T12:59:56.490
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4078749369511658368
 2Mass ID (if available) : 18545892-2215142

ICRS Star Coord at Epoch: 18h 54m 58.93237s -22:15:14.72295s
 RUWE (>1.4 is poor) : 0.92
 K magnitude : 13.480
 G magnitude : 15.333
 RP magnitude : 14.704
 BP magnitude : 15.796
 DUPflag : 0
 Distance (au) : 9.041
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -14.88
 Sun-Target sep (deg) : 170.30
 Sun-Moon sep (deg) : 31.69
 B (ring opening deg) : 24.98
 PA of pole (deg) : 6.53
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.195
 C/A sky separation (km) : 1279.1
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

Titan 2048-06-24T12:59:56 K13.48 G15.33 dots 60.0 sec
 Pgt



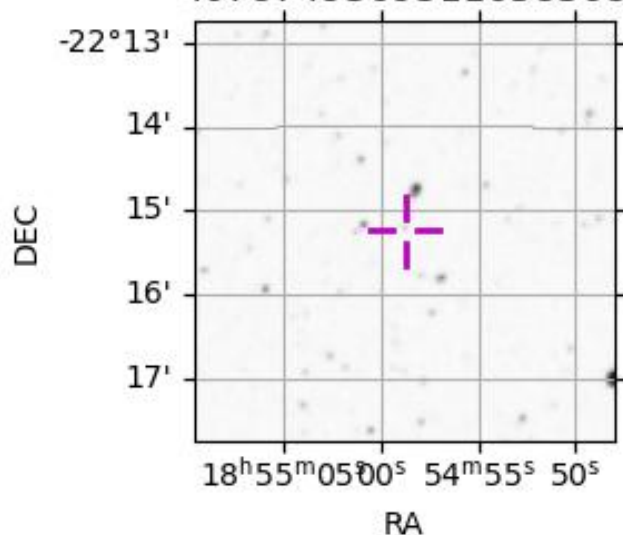
2048-06-24T12:59:56.4900 ra: 18 54 58.9324 d: -22 15 14.723 C/A 0.192" PA 165.87 deg v_sky -14.88 km/s D 09.04 AU

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	+ +	JUN 24 13:00 - JUN 24 13:05	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUN 24 13:00 - JUN 24 13:05	Pie

4078749369511658368



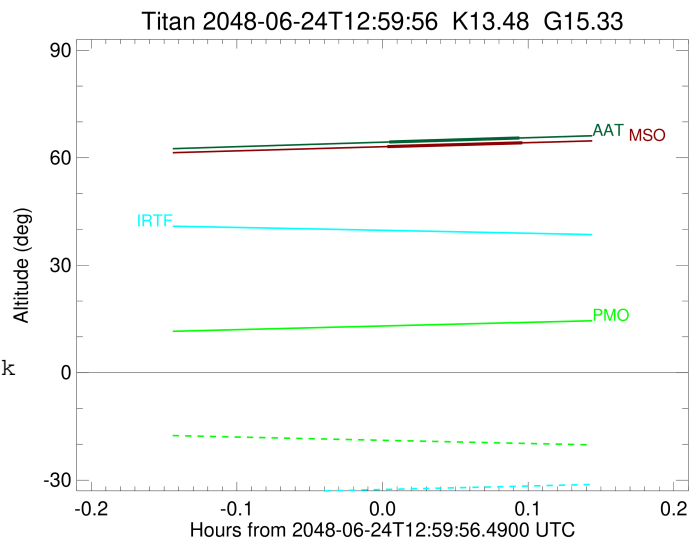
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2048-06-24T13:02:54.010
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      : 4078749369511658368
2Mass ID (if available) : 18545892-2215142
ICRS Star Coord at Epoch: 18h 54m 58.93237s -22:15:14.72295s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 13.480
G magnitude          : 15.333
RP magnitude         : 14.704
BP magnitude         : 15.796
DUPflag             : 0
Distance (au)       : 9.041
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -14.88
Sun-Target sep (deg) : 170.30
Sun-Moon sep (deg)  : 31.81
B (ring opening deg) : 24.98
PA of pole (deg)    : 6.53
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.109
C/A sky separation (km) : 716.7
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	2048-06-24T13:00:11.702	64.38	-73.43	2575.2	-3.99	-3.99
Titan	E	2048-06-24T13:05:36.269	65.51	-74.48	2575.1	32.81	32.83



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2048-06-24T13:02:54.360
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      : 4078749369511658368
2Mass ID (if available) : 18545892-2215142
ICRS Star Coord at Epoch: 18h 54m 58.93237s -22:15:14.72295s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 13.480
G magnitude          : 15.333
RP magnitude         : 14.704
BP magnitude         : 15.796
DUPflag             : 0
Distance (au)       : 9.041
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -14.88
Sun-Target sep (deg) : 170.30
Sun-Moon sep (deg)  : 31.81
B (ring opening deg) : 24.98
PA of pole (deg)    : 6.53
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.042
C/A sky separation (km) : 273.1
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	2048-06-24T13:00:06.147	63.09	-71.39	2575.1	-13.10	-13.10
Titan	E	2048-06-24T13:05:42.521	64.16	-72.31	2575.1	23.99	24.00

