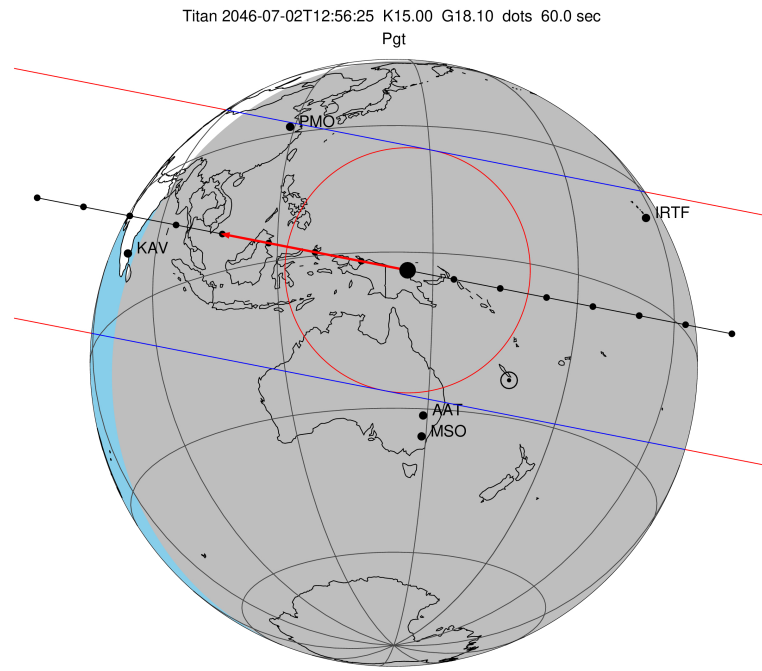


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2046-07-02T12:56:25.130
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4115680517663780480
 2Mass ID (if available) : 17070052-2120578

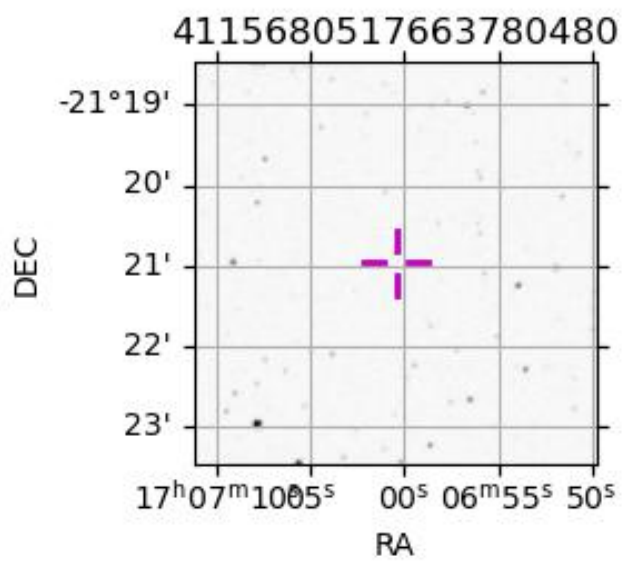
ICRS Star Coord at Epoch: 17h 07m 00.53899s -21:20:57.65131s
 RUWE (>1.4 is poor) : 1.05
 K magnitude : 14.999
 G magnitude : 18.103
 RP magnitude : 17.231
 BP magnitude : 18.910
 DUPflag : 0
 Distance (au) : 9.091
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.52
 Sun-Target sep (deg) : 157.43
 Sun-Moon sep (deg) : 174.05
 B (ring opening deg) : 26.52
 PA of pole (deg) : 4.44
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.299
 C/A sky separation (km) : 1972.9
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 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 02 12:58 - JUL 02 13:00	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	+ +	JUL 02 12:50 - JUL 02 12:53	Pie
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			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



2046-07-02T12:56:25.1300 α: 17 07 00.5390 δ: -21 20 57.651 C/A 0.298" PA 11.09 deg v_sky -16.52 km/s D 09.09 AU
 Credit: Styled after SORA/Lucky Star



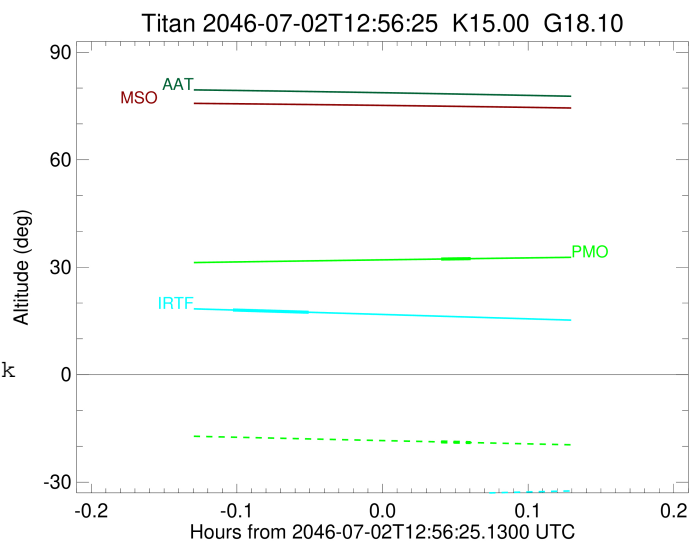
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2046-07-02T12:59:26.060
Event type            : Pgt
: Titan occs: geocentric, topocentric
: 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       : 4115680517663780480
2Mass ID (if available) : 17070052-2120578
ICRS Star Coord at Epoch: 17h 07m 00.53899s -21:20:57.65131s
RUWE (>1.4 is poor) : 1.05
K magnitude           : 14.999
G magnitude           : 18.103
RP magnitude          : 17.231
BP magnitude          : 18.910
DUPflag              : 0
Distance (au)         : 9.091
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.52
Sun-Target sep (deg) : 157.43
Sun-Moon sep (deg)   : 174.90
B (ring opening deg) : 26.52
PA of pole (deg)     : 4.44
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.378
C/A sky separation (km) : 2495.0
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	2046-07-02T12:58:48.277	32.27	-18.76	2575.0	62.36	62.37
Titan	E	2046-07-02T13:00:03.854	32.38	-18.95	2575.1	56.91	56.93



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2046-07-02T12:51:49.000
Event type            : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)        : 19.82622
E. Longitude (deg)    : 204.52800
Altitude (km)         : 4.168
Gaia source ID        : 4115680517663780480
2Mass ID (if available) : 17070052-2120578
ICRS Star Coord at Epoch: 17h 07m 00.53899s -21:20:57.65131s
RUWE (>1.4 is poor) : 1.05
K magnitude           : 14.999
G magnitude           : 18.103
RP magnitude          : 17.231
BP magnitude          : 18.910
DUPflag              : 0
Distance (au)         : 9.091
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.52
Sun-Target sep (deg)  : 157.43
Sun-Moon sep (deg)   : 174.07
B (ring opening deg) : 26.52
PA of pole (deg)     : 4.44
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.308
C/A sky separation (km) : 2028.6
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	2046-07-02T12:50:14.368	18.05	-34.67	2575.1	50.05	50.06
Titan	E	2046-07-02T12:53:23.667	17.42	-34.18	2575.1	39.25	39.27

