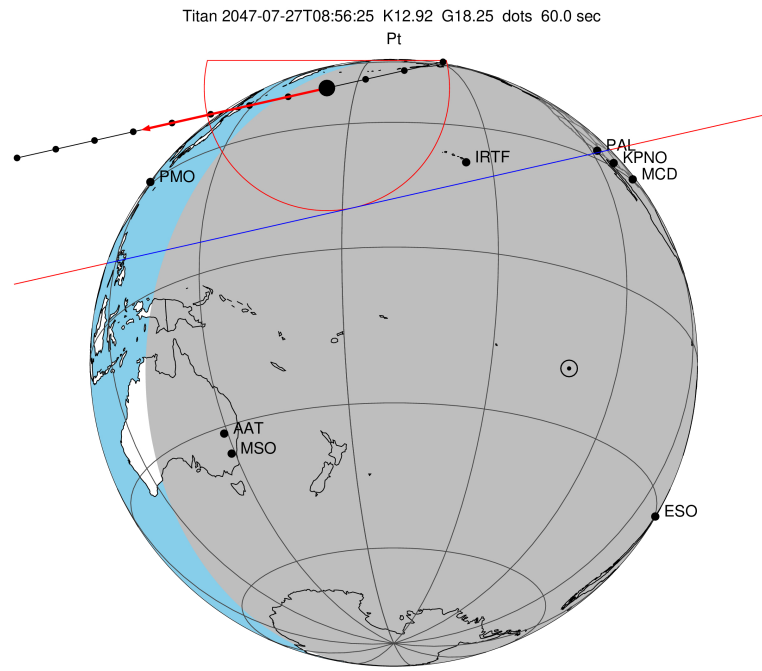


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-07-27T08:56:25.230
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4070233170982848768
 2Mass ID (if available) : 17530013-2225048

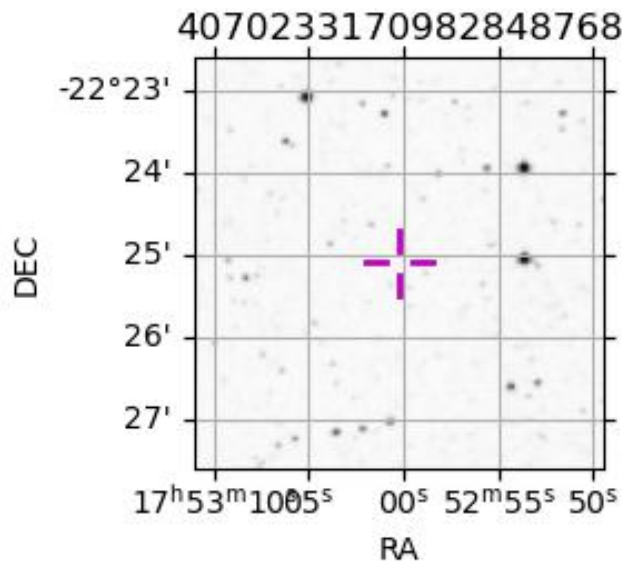
ICRS Star Coord at Epoch: 17h 53m 00.14069s -22:25:05.02855s
 RUWE (>1.4 is poor) : 0.00
 K magnitude : 12.922
 G magnitude : 18.253
 RP magnitude : 16.303
 BP magnitude : 19.242
 DUPflag : 0
 Distance (au) : 9.202
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -13.89
 Sun-Target sep (deg) : 144.73
 Sun-Moon sep (deg) : 88.53
 B (ring opening deg) : 26.65
 PA of pole (deg) : 5.53
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.887
 C/A sky separation (km) : 5917.2
 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	+ +	JUL 27 08:49 - JUL 27 08:51	Pie
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	+ +	JUL 27 08:51 - JUL 27 08:55	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



2047-07-27T08:56:25.2300 cc: 17 53 00.1407 & -22 25 05.029 C/A 0.890" PA 347.28 deg v_sky -13.89 km/s D 09.20 AU
 Credit: Styled after SORA/Lucky Star



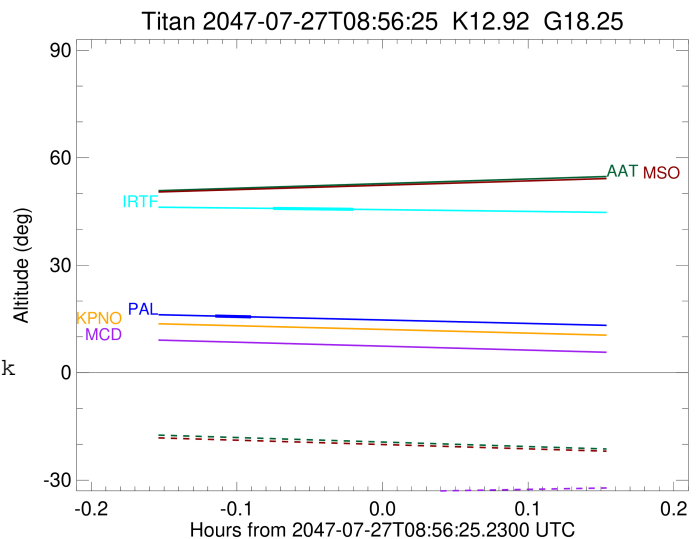
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-07-27T08:50:16.500
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : PAL
Location             : Palomar Mt (200")
Latitude (deg)       : 33.35622
E. Longitude (deg)   : 243.13601
Altitude (km)        : 1.706
Gaia source ID       : 4070233170982848768
2Mass ID (if available) : 17530013-2225048
ICRS Star Coord at Epoch: 17h 53m 00.14069s -22:25:05.02855s
RUWE (>1.4 is poor) : 0.00
K magnitude          : 12.922
G magnitude          : 18.253
RP magnitude         : 16.303
BP magnitude         : 19.242
DUPflag             : 0
Distance (au)        : 9.202
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -13.89
Sun-Target sep (deg) : 144.73
Sun-Moon sep (deg)   : 88.79
B (ring opening deg) : 26.65
PA of pole (deg)     : 5.53
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.373
C/A sky separation (km): 2491.4
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	2047-07-27T08:49:30.296	15.81	-35.99	2575.1	-63.20	-63.21
Titan	E	2047-07-27T08:51:02.710	15.56	-35.90	2575.1	-49.12	-49.14



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-07-27T08:53:33.900
Event type           : Pt
: Titan occs: topocentric, not geocentric
: 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       : 4070233170982848768
2Mass ID (if available) : 17530013-2225048
ICRS Star Coord at Epoch: 17h 53m 00.14069s -22:25:05.02855s
RUWE (>1.4 is poor) : 0.00
K magnitude           : 12.922
G magnitude           : 18.253
RP magnitude          : 16.303
BP magnitude          : 19.242
DUPflag              : 0
Distance (au)         : 9.202
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -13.89
Sun-Target sep (deg)  : 144.73
Sun-Moon sep (deg)   : 89.23
B (ring opening deg) : 26.65
PA of pole (deg)     : 5.53
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.321
C/A sky separation (km) : 2139.4
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	2047-07-27T08:51:53.625	45.85	-44.49	2575.1	-59.17	-59.18
Titan	E	2047-07-27T08:55:14.178	45.60	-44.91	2575.1	-33.78	-33.79

