

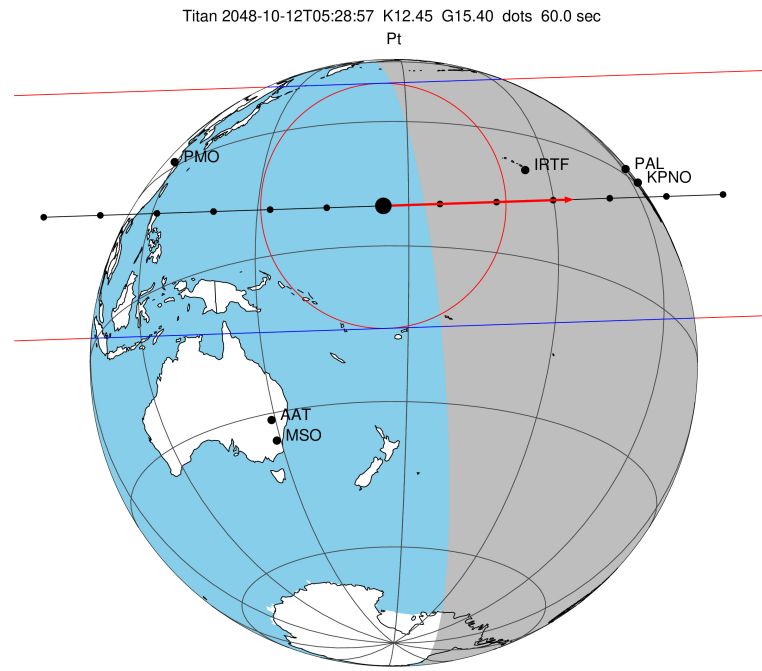
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2048-10-12T05:28:57.700
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4079178694438013440
 2Mass ID (if available) : 18404003-2243273

ICRS Star Coord at Epoch: 18h 40m 40.01815s -22:43:27.68672s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 12.448
 G magnitude : 15.401
 RP magnitude : 14.511
 BP magnitude : 16.172
 DUPflag : 0
 Distance (au) : 10.154
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 19.81
 Sun-Target sep (deg) : 80.48
 Sun-Moon sep (deg) : 20.65
 B (ring opening deg) : 25.81
 PA of pole (deg) : 6.36
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.449
 C/A sky separation (km) : 3307.1
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

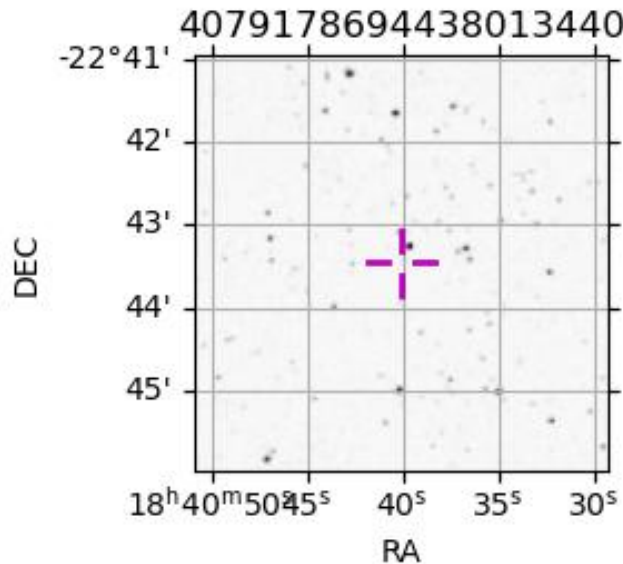
URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

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

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+	OCT 12 05:31 - OCT 12 05:31	Pin
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	+ +	OCT 12 05:29 - OCT 12 05:33	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



2048-10-12T05:28:57.7000 α: 18 40 40.0182 δ: -22 43 27.687 C/A 0.449" PA 358.08 deg v_sky +19.82 km/s D 10.15 AU
 Credit: Styled after SORA/Lucky Star



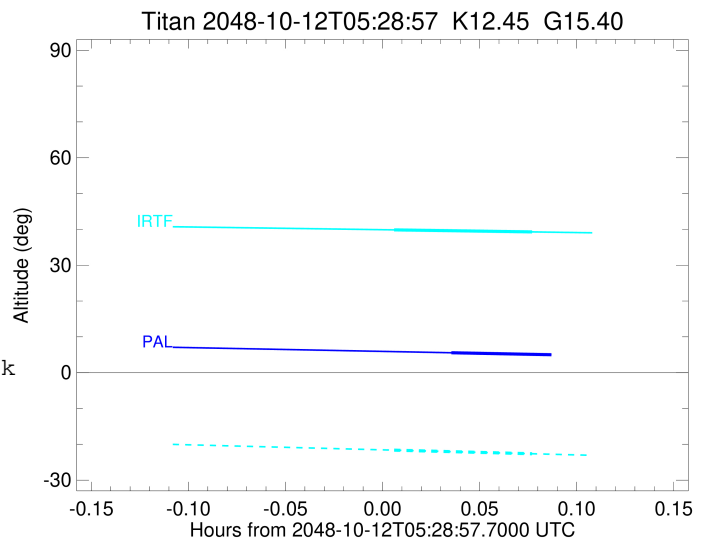
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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2048-10-12T05:33:13.330
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : PAL
Location             : Palomar Mt (200")
Latitude (deg)       : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)        : 1.706
Gaia source ID       : 4079178694438013440
2Mass ID (if available) : 18404003-2243273
ICRS Star Coord at Epoch: 18h 40m 40.01815s -22:43:27.68672s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 12.448
G magnitude          : 15.401
RP magnitude         : 14.511
BP magnitude         : 16.172
DUPflag             : 0
Distance (au)        : 10.154
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 19.81
Sun-Target sep (deg) : 80.48
Sun-Moon sep (deg)  : 21.45
B (ring opening deg) : 25.81
PA of pole (deg)    : 6.36
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.071
C/A sky separation (km): 521.2
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

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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	2048-10-12T05:31:05.153	5.56	-51.86	2575.1	18.26	18.27
Titan	E	2048-10-12T05:35:21.470	4.79x	-52.59	2575.2	2.69	2.69



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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2048-10-12T05:31:27.820
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       : 4079178694438013440
2Mass ID (if available) : 18404003-2243273
ICRS Star Coord at Epoch: 18h 40m 40.01815s -22:43:27.68672s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 12.448
G magnitude          : 15.401
RP magnitude         : 14.511
BP magnitude         : 16.172
DUPflag             : 0
Distance (au)        : 10.154
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 19.81
Sun-Target sep (deg) : 80.48
Sun-Moon sep (deg)   : 21.35
B (ring opening deg) : 25.81
PA of pole (deg)     : 6.36
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.083
C/A sky separation (km): 610.7
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	2048-10-12T05:29:19.105	39.86	-21.63	2575.1	19.95	19.96
Titan	E	2048-10-12T05:33:36.503	39.29	-22.64	2575.2	4.64	4.64

