

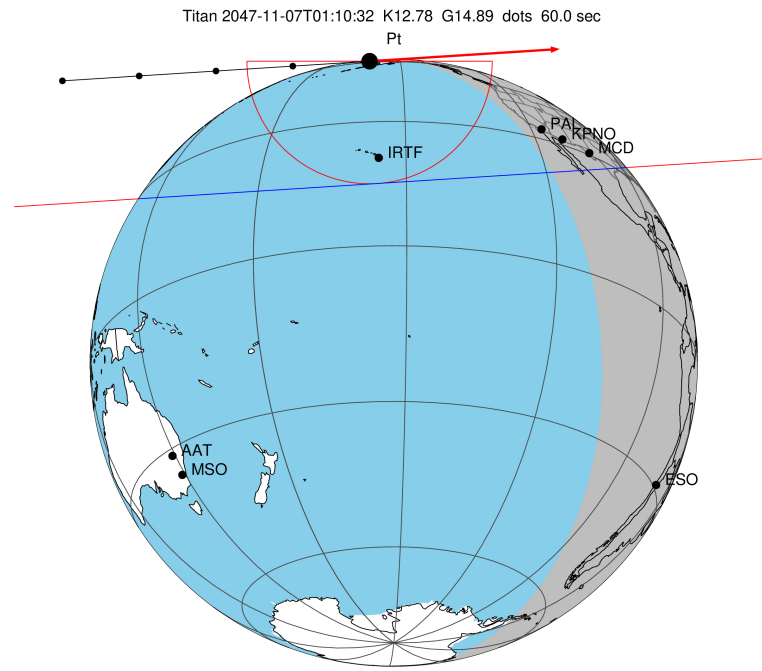
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-11-07T01:10:32.880
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4069471209351315712
 2Mass ID (if available) : 18023924-2241403

ICRS Star Coord at Epoch: 18h 02m 39.23680s -22:41:41.29567s
 RUWE (>1.4 is poor) : 0.95
 K magnitude : 12.780
 G magnitude : 14.889
 RP magnitude : 14.235
 BP magnitude : 15.360
 DUPflag : 0
 Distance (au) : 10.693
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 26.93
 Sun-Target sep (deg) : 46.74
 Sun-Moon sep (deg) : 178.65
 B (ring opening deg) : 26.71
 PA of pole (deg) : 5.73
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.819
 C/A sky separation (km) : 6350.4
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

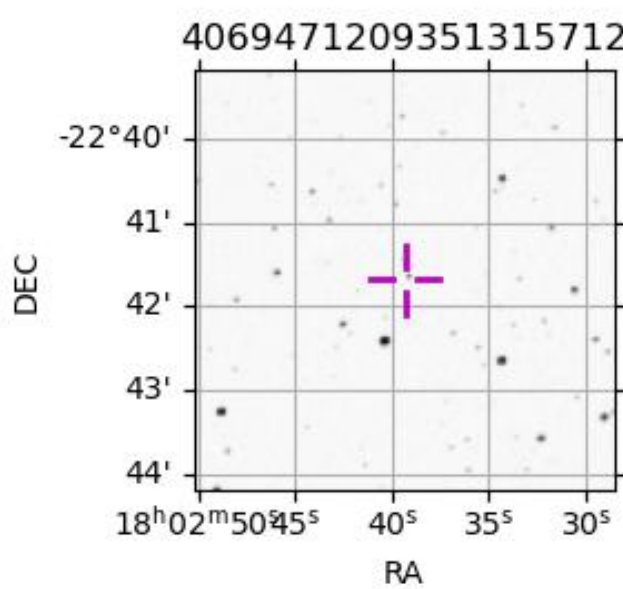
URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

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	+	NOV 07 01:13 - NOV 07 01:13	Pne
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	NOV 07 01:11 - NOV 07 01:14	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	NOV 07 01:12 - NOV 07 01:14	Pie
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			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



2047-11-07T01:10:32.8800 α: 18 02 39.2368 δ: -22 41 41.296 C/A 0.820" PA 356.34 deg v_sky +26.93 km/s D 10.69 AU
 Credit: Styled after SORA/Lucky Star



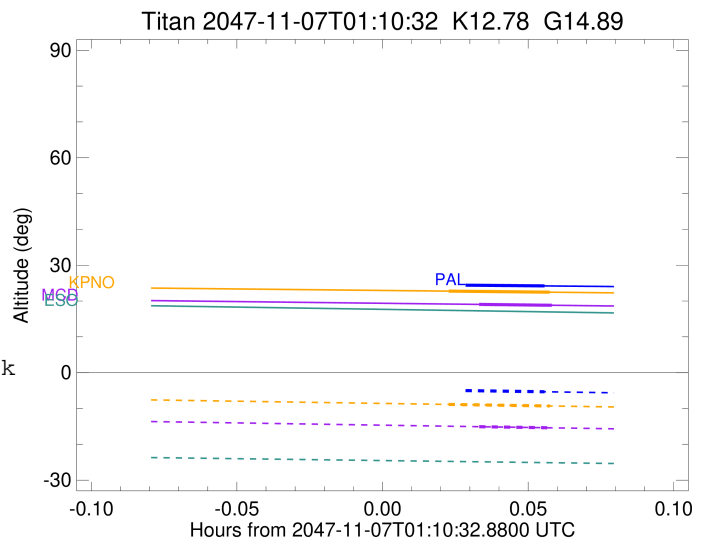
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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-11-07T01:12:41.620
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : PAL
Location             : Palomar Mt (200")
Latitude (deg)       : 33.35622
E. Longitude (deg)   : 243.13601
Altitude (km)        : 1.706
Gaia source ID       : 4069471209351315712
2Mass ID (if available) : 18023924-2241403
ICRS Star Coord at Epoch: 18h 02m 39.23680s -22:41:41.29567s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 12.780
G magnitude          : 14.889
RP magnitude         : 14.235
BP magnitude         : 15.360
DUPflag             : 0
Distance (au)        : 10.693
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 26.93
Sun-Target sep (deg) : 46.74
Sun-Moon sep (deg)   : 178.98
B (ring opening deg) : 26.71
PA of pole (deg)     : 5.73
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.219
C/A sky separation (km): 1699.1
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	2047-11-07T01:11:28.939	24.52	-4.85x	2575.1	-27.96	-27.97
Titan	E	2047-11-07T01:13:54.288	24.21	-5.33	2575.1	-43.90	-43.92



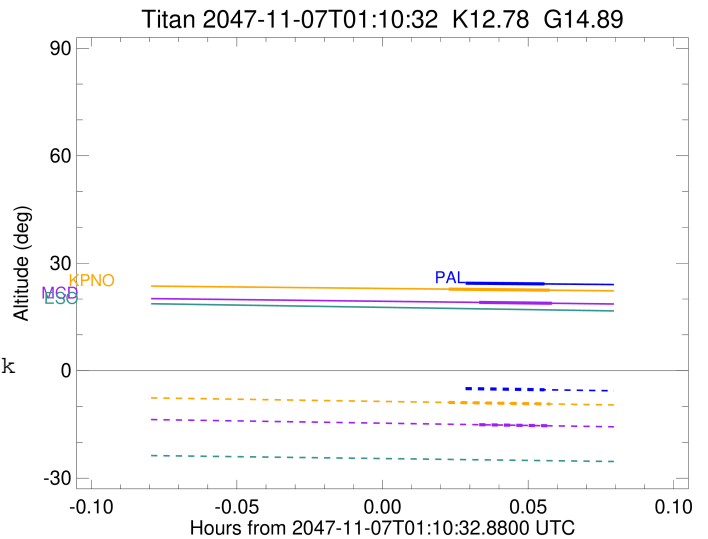
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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-11-07T01:12:57.370
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : KPNO
Location             : Kitt Peak Natl Obs
Latitude (deg)       : 31.96333
E. Longitude (deg)   : 248.40000
Altitude (km)        : 2.120
Gaia source ID       : 4069471209351315712
2Mass ID (if available) : 18023924-2241403
ICRS Star Coord at Epoch: 18h 02m 39.23680s -22:41:41.29567s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 12.780
G magnitude           : 14.889
RP magnitude         : 14.235
BP magnitude         : 15.360
DUPflag              : 0
Distance (au)        : 10.693
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 26.93
Sun-Target sep (deg) : 46.74
Sun-Moon sep (deg)   : 178.91
B (ring opening deg) : 26.71
PA of pole (deg)     : 5.73
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.251
C/A sky separation (km) : 1944.6
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

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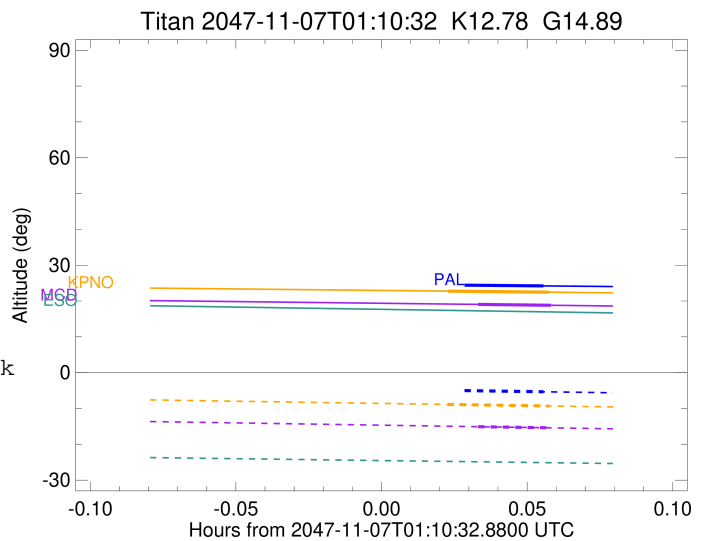
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2047-11-07T01:11:54.012	22.76	-8.87	2575.1	-34.53	-34.54
Titan	E	2047-11-07T01:14:00.724	22.46	-9.30	2575.1	-49.75	-49.77



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-11-07T01:13:17.480
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : MCD
Location             : McDonald Obs. 2.7m
Latitude (deg)       : 30.67158
E. Longitude (deg)  : 255.97844
Altitude (km)        : 2.075
Gaia source ID       : 4069471209351315712
2Mass ID (if available) : 18023924-2241403
ICRS Star Coord at Epoch: 18h 02m 39.23680s -22:41:41.29567s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 12.780
G magnitude           : 14.889
RP magnitude         : 14.235
BP magnitude         : 15.360
DUPflag              : 0
Distance (au)        : 10.693
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 26.93
Sun-Target sep (deg) : 46.74
Sun-Moon sep (deg)  : 178.82
B (ring opening deg) : 26.71
PA of pole (deg)    : 5.73
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.293
C/A sky separation (km) : 2275.6
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	2047-11-07T01:12:32.300	19.05	-15.08	2575.1	-45.06	-45.07
Titan	E	2047-11-07T01:14:02.651	18.81	-15.40	2575.1	-58.05	-58.06