

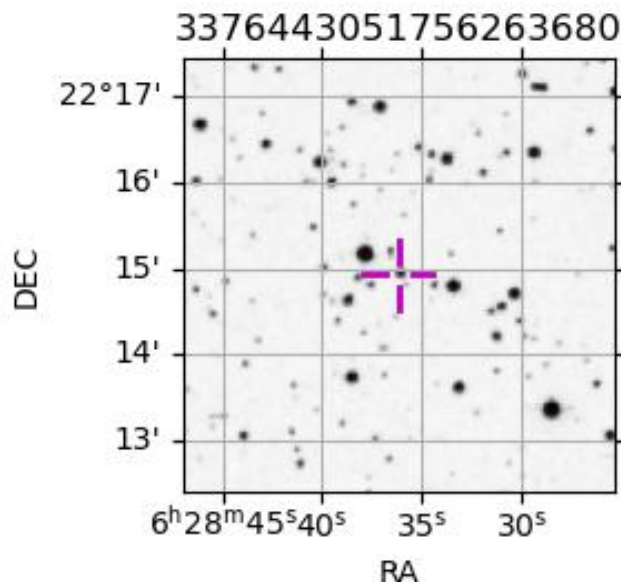
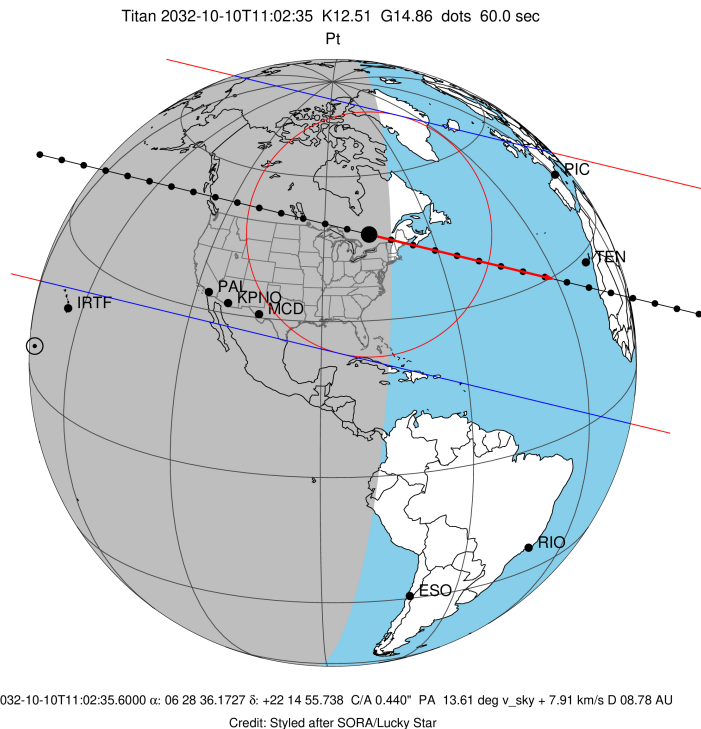
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2032-10-10T11:02:35.600
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 3376443051756263680
 2Mass ID (if available) : 06283617+2214557

ICRS Star Coord at Epoch: 06h 28m 36.17274s +22:14:55.73807s
 RUWE (>1.4 is poor) : 1.16
 K magnitude : 12.509
 G magnitude : 14.856
 RP magnitude : 14.106
 BP magnitude : 15.459
 DUPflag : 0
 Distance (au) : 8.783
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 7.91
 Sun-Target sep (deg) : 100.62
 Sun-Moon sep (deg) : 168.74
 B (ring opening deg) : -25.65
 PA of pole (deg) : -6.16
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.435
 C/A sky separation (km) : 2772.1
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

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

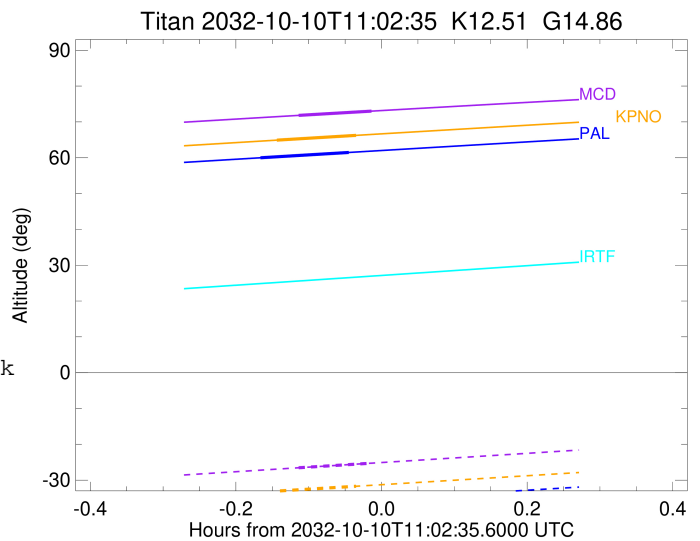
Observable events with sun below -5 deg and altitude above 5 deg

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 10 10:52 - OCT 10 10:59	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	OCT 10 10:53 - OCT 10 11:00	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	OCT 10 10:55 - OCT 10 11:01	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



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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2032-10-10T10:56:15.000
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       : 3376443051756263680
2Mass ID (if available) : 06283617+2214557
ICRS Star Coord at Epoch: 06h 28m 36.17274s +22:14:55.73807s
RUWE (>1.4 is poor) : 1.16
K magnitude           : 12.509
G magnitude           : 14.856
RP magnitude          : 14.106
BP magnitude          : 15.459
DUPflag              : 0
Distance (au)         : 8.783
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 7.91
Sun-Target sep (deg) : 100.62
Sun-Moon sep (deg)   : 168.59
B (ring opening deg) : -25.65
PA of pole (deg)     : -6.16
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.310
C/A sky separation (km): 1972.3
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

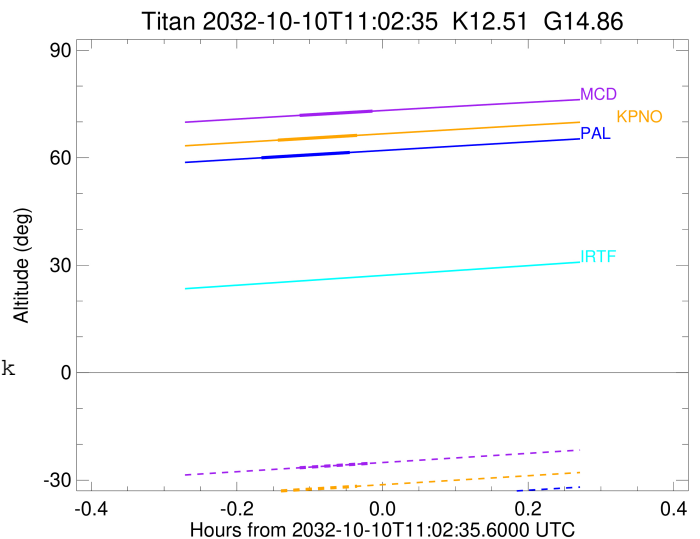
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Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2032-10-10T10:52:36.106	59.98	-37.22	2575.0	-57.81	-57.82
Titan	E	2032-10-10T10:59:53.911	61.46	-35.77	2575.1	-26.91	-26.92

target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2032-10-10T10:57:14.010
 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 : 3376443051756263680
 2Mass ID (if available) : 06283617+2214557
 ICRS Star Coord at Epoch: 06h 28m 36.17274s +22:14:55.73807s
 RUWE (>1.4 is poor) : 1.16
 K magnitude : 12.509
 G magnitude : 14.856
 RP magnitude : 14.106
 BP magnitude : 15.459
 DUPflag : 0
 Distance (au) : 8.783
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 7.91
 Sun-Target sep (deg) : 100.62
 Sun-Moon sep (deg) : 168.65
 B (ring opening deg) : -25.65
 PA of pole (deg) : -6.16
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.331
 C/A sky separation (km) : 2105.8
 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	2032-10-10T10:53:57.566	64.90	-33.06	2575.0	-60.47	-60.48
Titan	E	2032-10-10T11:00:30.466	66.24	-31.70	2575.1	-31.04	-31.05



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target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2032-10-10T10:58:45.560
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        : 3376443051756263680
2Mass ID (if available) : 06283617+2214557
ICRS Star Coord at Epoch: 06h 28m 36.17274s +22:14:55.73807s
RUWE (>1.4 is poor) : 1.16
K magnitude           : 12.509
G magnitude           : 14.856
RP magnitude          : 14.106
BP magnitude          : 15.459
DUPflag              : 0
Distance (au)         : 8.783
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 7.91
Sun-Target sep (deg)  : 100.62
Sun-Moon sep (deg)   : 168.74
B (ring opening deg) : -25.65
PA of pole (deg)     : -6.16
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.342
C/A sky separation (km) : 2180.3
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	2032-10-10T10:55:43.494	71.80	-26.55	2575.1	-61.86	-61.87
Titan	E	2032-10-10T11:01:47.616	73.00	-25.26	2575.1	-33.46	-33.47

