

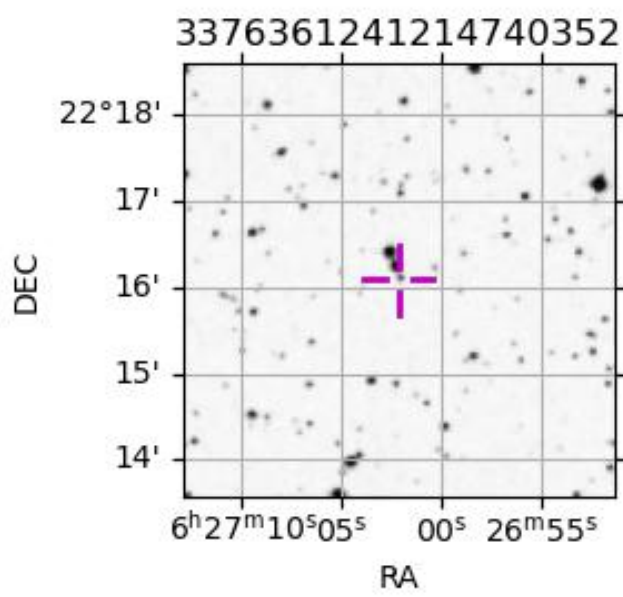
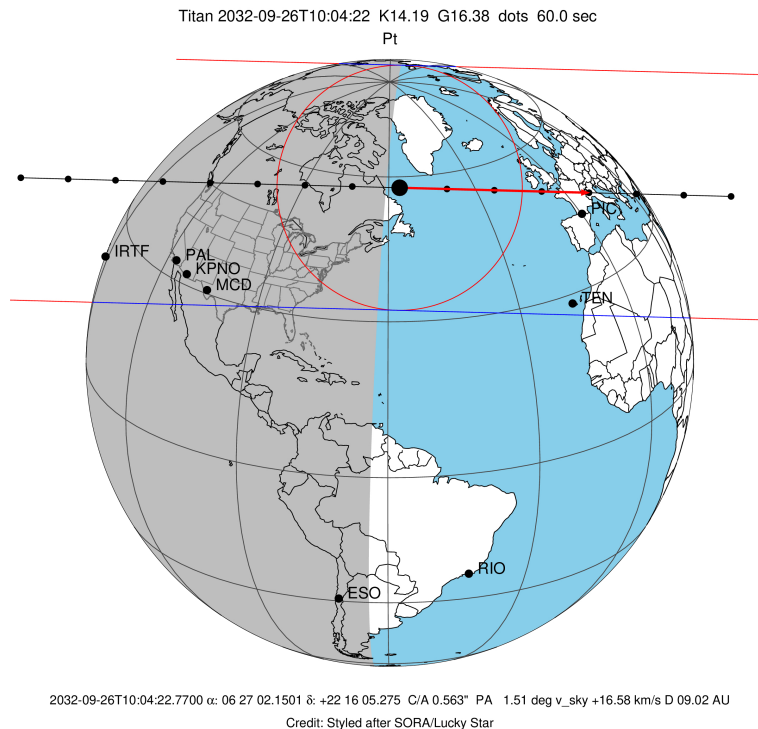
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2032-09-26T10:04:22.770
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 3376361241214740352
 2Mass ID (if available) : 06270216+2216053

ICRS Star Coord at Epoch: 06h 27m 02.15009s +22:16:05.27486s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 14.193
 G magnitude : 16.379
 RP magnitude : 15.648
 BP magnitude : 16.905
 DUPflag : 0
 Distance (au) : 9.017
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 16.57
 Sun-Target sep (deg) : 87.16
 Sun-Moon sep (deg) : 4.40
 B (ring opening deg) : -25.70
 PA of pole (deg) : -6.13
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.562
 C/A sky separation (km) : 3677.6
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

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

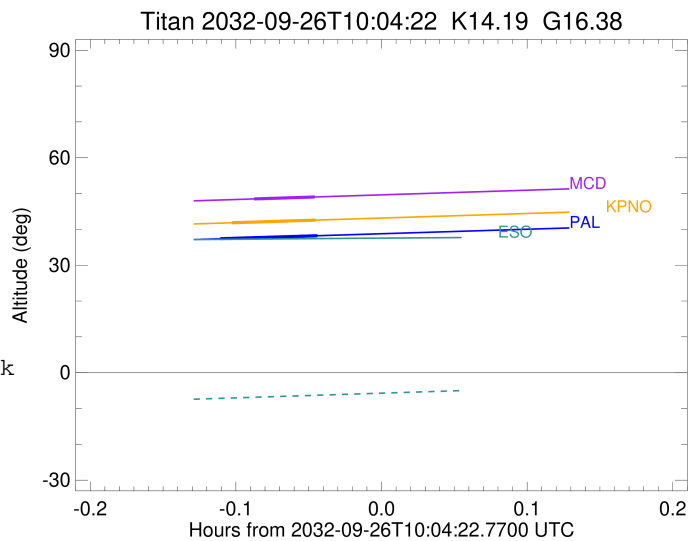
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	SEP 26 09:57 - SEP 26 10:01	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	SEP 26 09:58 - SEP 26 10:01	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	SEP 26 09:59 - SEP 26 10:01	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             : 2032-09-26T09:59:44.160
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       : 3376361241214740352
2Mass ID (if available) : 06270216+2216053
ICRS Star Coord at Epoch: 06h 27m 02.15009s +22:16:05.27486s
RUWE (>1.4 is poor) : 1.01
K magnitude          : 14.193
G magnitude          : 16.379
RP magnitude         : 15.648
BP magnitude         : 16.905
DUPflag             : 0
Distance (au)        : 9.017
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 16.57
Sun-Target sep (deg) : 87.16
Sun-Moon sep (deg)   : 4.36
B (ring opening deg) : -25.70
PA of pole (deg)     : -6.13
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.251
C/A sky separation (km): 1643.4
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	2032-09-26T09:57:43.062	37.38	-44.58	2575.1	-41.13	-41.15
Titan	E	2032-09-26T10:01:45.284	38.23	-43.90	2575.1	-28.89	-28.90

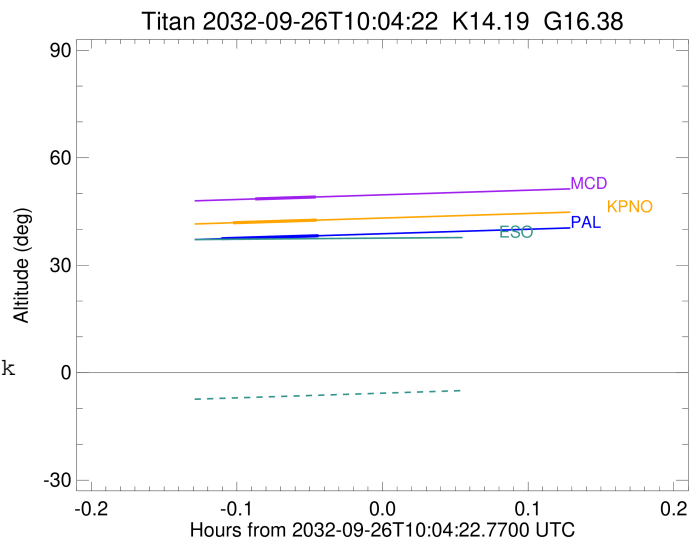
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target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2032-09-26T09:59:57.370
Event type            : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code         : KPNO
Location              : Kitt Peak Natl Obs
Latitude (deg)        : 31.96333
E. Longitude (deg)    : 248.40000
Altitude (km)         : 2.120
Gaia source ID        : 3376361241214740352
2Mass ID (if available) : 06270216+2216053
ICRS Star Coord at Epoch: 06h 27m 02.15009s +22:16:05.27486s
RUWE (>1.4 is poor)  : 1.01
K magnitude           : 14.193
G magnitude           : 16.379
RP magnitude          : 15.648
BP magnitude          : 16.905
DUPflag              : 0
Distance (au)         : 9.017
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 16.57
Sun-Target sep (deg)  : 87.16
Sun-Moon sep (deg)   : 4.34
B (ring opening deg) : -25.70
PA of pole (deg)     : -6.13
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.295
C/A sky separation (km) : 1931.0
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	2032-09-26T09:58:13.103	41.84	-41.56	2575.0	-48.21	-48.22
Titan	E	2032-09-26T10:01:41.663	42.58	-40.92	2575.1	-36.51	-36.53



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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2032-09-26T10:00:23.340
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       : 3376361241214740352
2Mass ID (if available) : 06270216+2216053
ICRS Star Coord at Epoch: 06h 27m 02.15009s +22:16:05.27486s
RUWE (>1.4 is poor) : 1.01
K magnitude          : 14.193
G magnitude          : 16.379
RP magnitude         : 15.648
BP magnitude         : 16.905
DUPflag             : 0
Distance (au)        : 9.017
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 16.57
Sun-Target sep (deg) : 87.16
Sun-Moon sep (deg)   : 4.33
B (ring opening deg) : -25.70
PA of pole (deg)     : -6.13
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.346
C/A sky separation (km): 2259.7
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	2032-09-26T09:59:07.561	48.50	-36.17	2575.1	-57.05	-57.07
Titan	E	2032-09-26T10:01:39.144	49.04	-35.67	2575.1	-46.83	-46.85

