

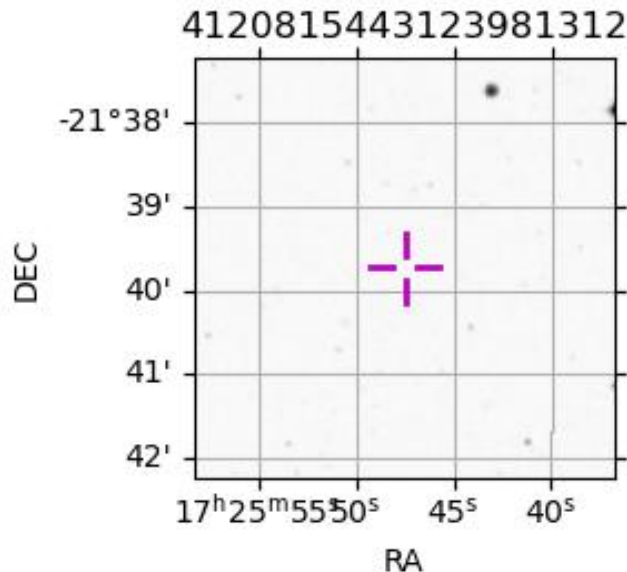
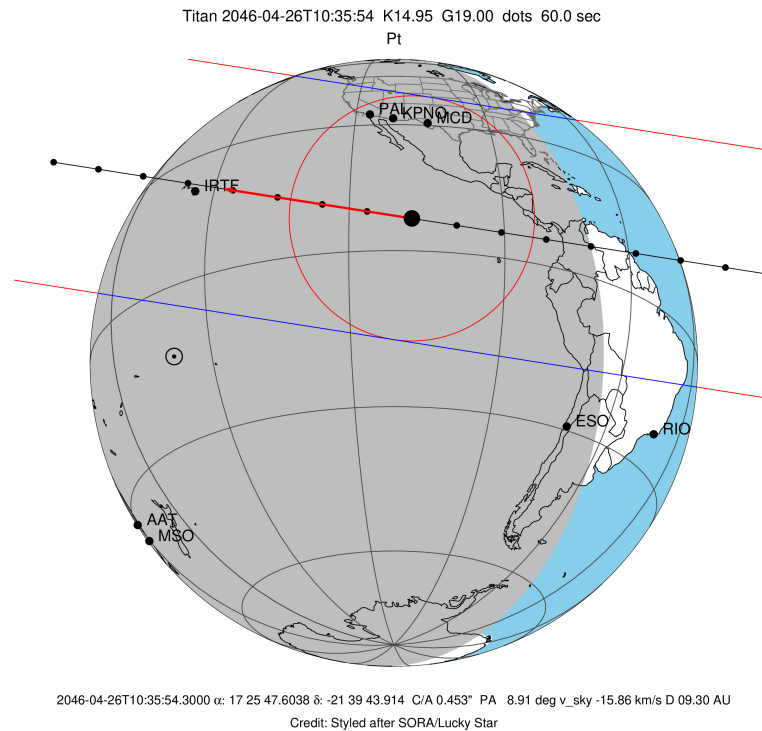
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2046-04-26T10:35:54.300
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4120815443123981312
 2Mass ID (if available) : 17254762-2139436

ICRS Star Coord at Epoch: 17h 25m 47.60376s -21:39:43.91380s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.952
 G magnitude : 18.998
 RP magnitude : 17.891
 BP magnitude : 20.368
 DUPflag : 0
 Distance (au) : 9.304
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -15.86
 Sun-Target sep (deg) : 133.66
 Sun-Moon sep (deg) : 26.46
 B (ring opening deg) : 26.47
 PA of pole (deg) : 4.90
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.454
 C/A sky separation (km) : 3065.6
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

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

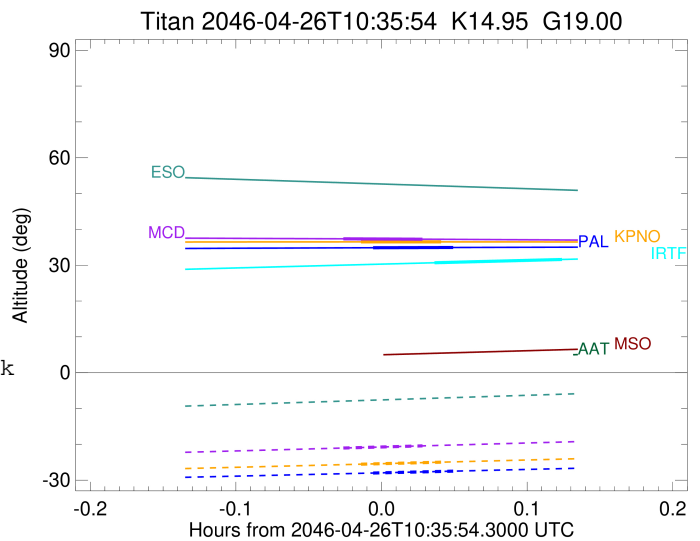
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	APR 26 10:35 - APR 26 10:38	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	APR 26 10:35 - APR 26 10:38	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	APR 26 10:34 - APR 26 10:37	Pie
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+ +	APR 26 10:38 - APR 26 10:43	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



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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2046-04-26T10:37:12.460
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      : 4120815443123981312
2Mass ID (if available) : 17254762-2139436
ICRS Star Coord at Epoch: 17h 25m 47.60376s -21:39:43.91380s
RUWE (>1.4 is poor) : 1.02
K magnitude          : 14.952
G magnitude          : 18.998
RP magnitude         : 17.891
BP magnitude         : 20.368
DUPflag             : 0
Distance (au)       : 9.304
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -15.86
Sun-Target sep (deg) : 133.66
Sun-Moon sep (deg)  : 26.89
B (ring opening deg) : 26.47
PA of pole (deg)    : 4.90
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (" ) : 0.298
C/A sky separation (km) : 2009.9
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
    
```

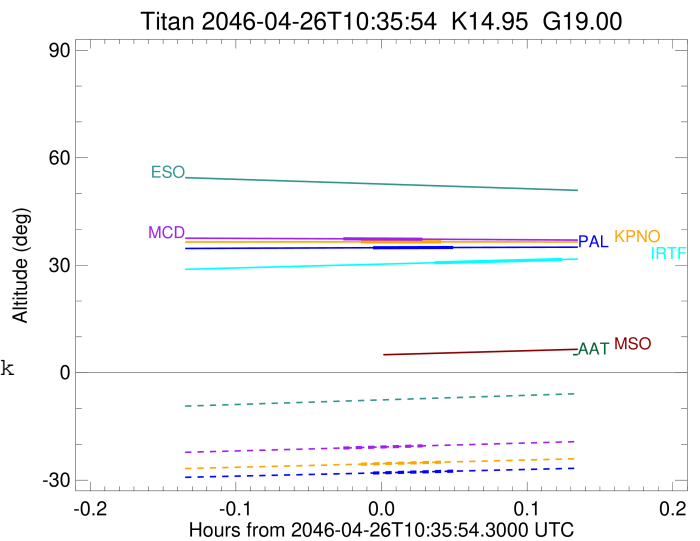


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2046-04-26T10:35:33.358	34.87	-28.01	2575.0	47.21	47.23
Titan	E	2046-04-26T10:38:51.571	34.94	-27.49	2575.1	41.33	41.35

```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2046-04-26T10:36:42.000
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       : 4120815443123981312
2Mass ID (if available) : 17254762-2139436
ICRS Star Coord at Epoch: 17h 25m 47.60376s -21:39:43.91380s
RUWE (>1.4 is poor) : 1.02
K magnitude           : 14.952
G magnitude           : 18.998
RP magnitude          : 17.891
BP magnitude          : 20.368
DUPflag              : 0
Distance (au)        : 9.304
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.86
Sun-Target sep (deg) : 133.66
Sun-Moon sep (deg)   : 26.84
B (ring opening deg) : 26.47
PA of pole (deg)     : 4.90
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.296
C/A sky separation (km) : 2000.6
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
    
```

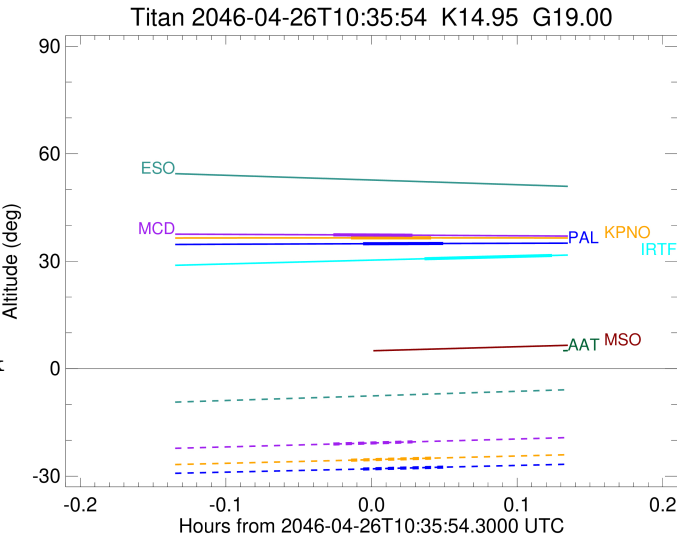


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2046-04-26T10:35:02.246	36.51	-25.55	2575.1	46.99	47.01
Titan	E	2046-04-26T10:38:21.763	36.51	-24.98	2575.1	41.03	41.05

```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2046-04-26T10:35:57.130
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       : 4120815443123981312
2Mass ID (if available) : 17254762-2139436
ICRS Star Coord at Epoch: 17h 25m 47.60376s -21:39:43.91380s
RUWE (>1.4 is poor) : 1.02
K magnitude           : 14.952
G magnitude           : 18.998
RP magnitude         : 17.891
BP magnitude         : 20.368
DUPflag              : 0
Distance (au)        : 9.304
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.86
Sun-Target sep (deg) : 133.66
Sun-Moon sep (deg)   : 26.74
B (ring opening deg) : 26.47
PA of pole (deg)     : 4.90
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.297
C/A sky separation (km) : 2004.6
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
    
```

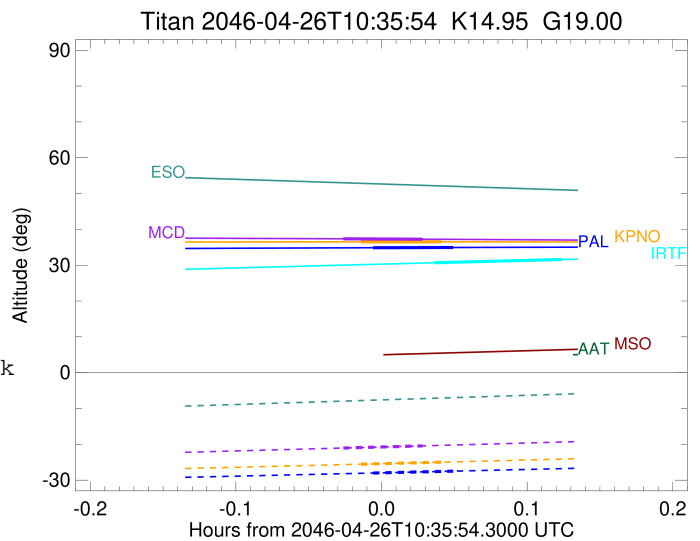


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2046-04-26T10:34:17.702	37.36	-21.04	2575.1	47.14	47.16
Titan	E	2046-04-26T10:37:36.558	37.25	-20.43	2575.1	41.09	41.11

```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2046-04-26T10:40:43.090
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       : 4120815443123981312
2Mass ID (if available) : 17254762-2139436
ICRS Star Coord at Epoch: 17h 25m 47.60376s -21:39:43.91380s
RUWE (>1.4 is poor) : 1.02
K magnitude           : 14.952
G magnitude           : 18.998
RP magnitude         : 17.891
BP magnitude         : 20.368
DUPflag              : 0
Distance (au)        : 9.304
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.86
Sun-Target sep (deg) : 133.66
Sun-Moon sep (deg)   : 27.29
B (ring opening deg) : 26.47
PA of pole (deg)     : 4.90
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.014
C/A sky separation (km): 93.5
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	2046-04-26T10:38:03.857	30.67	-56.34	2575.1	1.26	1.26
Titan	E	2046-04-26T10:43:22.306	31.60	-56.14	2575.1	-4.94	-4.94