

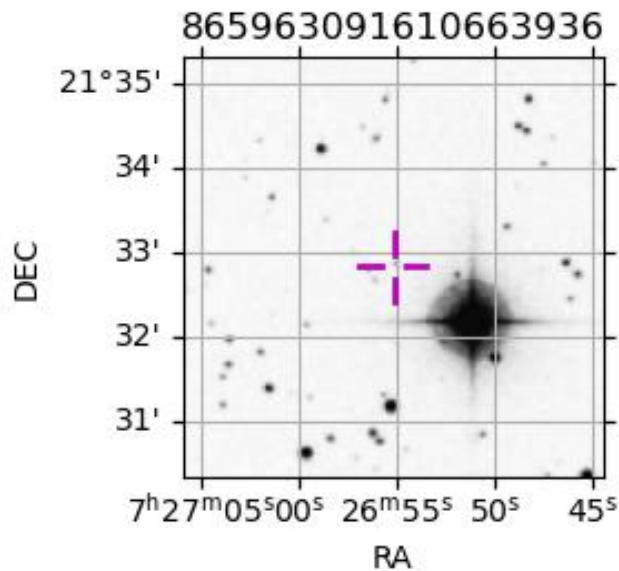
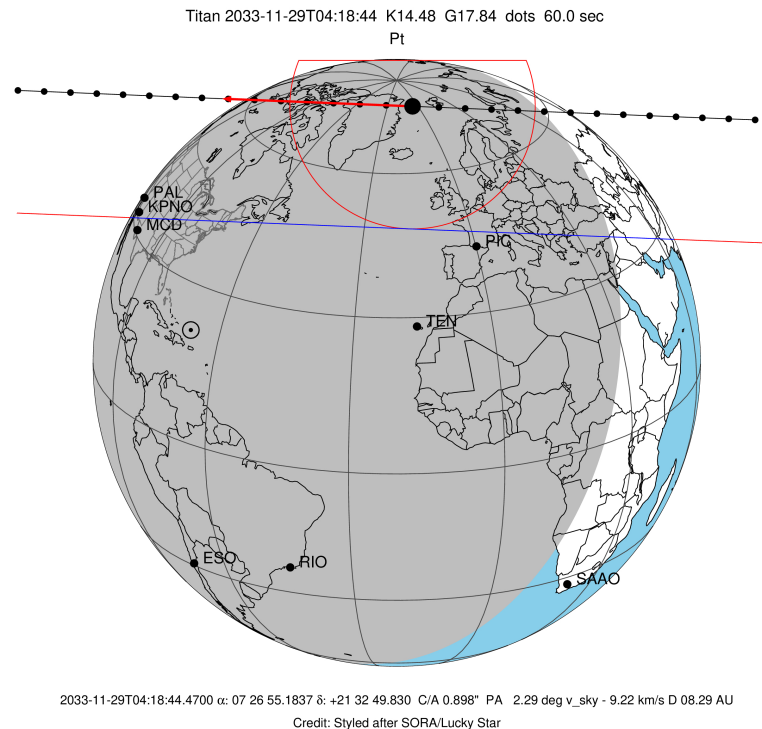
target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2033-11-29T04:18:44.470  
 Event type : Pt  
 : Titan occs: topocentric, not geocentric  
 : Not a ringed target  
 Gaia source ID : 865963091610663936  
 2Mass ID (if available) : 07265518+2132502

ICRS Star Coord at Epoch: 07h 26m 55.18366s +21:32:49.83023s  
 RUWE (>1.4 is poor) : 1.06  
 K magnitude : 14.476  
 G magnitude : 17.837  
 RP magnitude : 16.785  
 BP magnitude : 18.899  
 DUPflag : 0  
 Distance (au) : 8.289  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -9.23  
 Sun-Target sep (deg) : 136.64  
 Sun-Moon sep (deg) : 139.08  
 B (ring opening deg) : -23.41  
 PA of pole (deg) : -6.82  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.899  
 C/A sky separation (km) : 5403.1  
 NAIF SPICE kernels : RAJobs\_U111+rgf16.spk

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

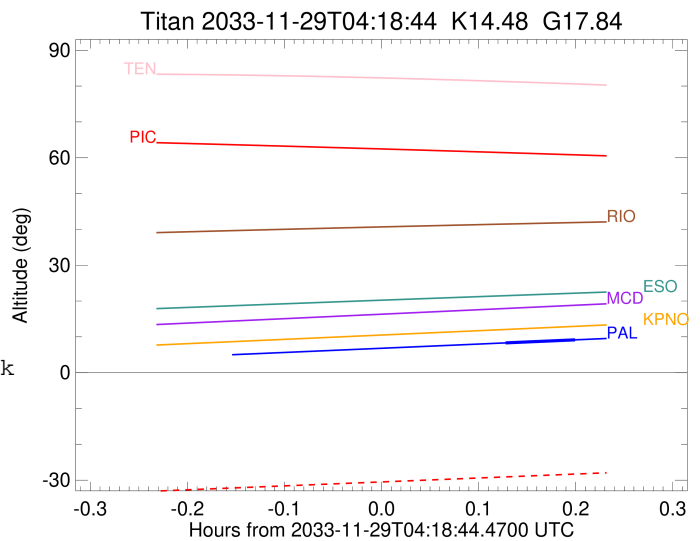
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	NOV 29 04:26 - NOV 29 04:30	Pie
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			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            : 2033-11-29T04:28:33.360
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       : 865963091610663936
2Mass ID (if available) : 07265518+2132502
ICRS Star Coord at Epoch: 07h 26m 55.18366s +21:32:49.83023s
RUWE (>1.4 is poor) : 1.06
K magnitude          : 14.476
G magnitude          : 17.837
RP magnitude         : 16.785
BP magnitude         : 18.899
DUPflag             : 0
Distance (au)        : 8.289
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -9.23
Sun-Target sep (deg) : 136.64
Sun-Moon sep (deg)  : 139.85
B (ring opening deg) : -23.41
PA of pole (deg)    : -6.82
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.378
C/A sky separation (km): 2270.5
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	2033-11-29T04:26:21.249	8.30	-46.75	2575.1	-46.17	-46.18
Titan	E	2033-11-29T04:30:45.446	9.17	-47.67	2575.1	-60.72	-60.73