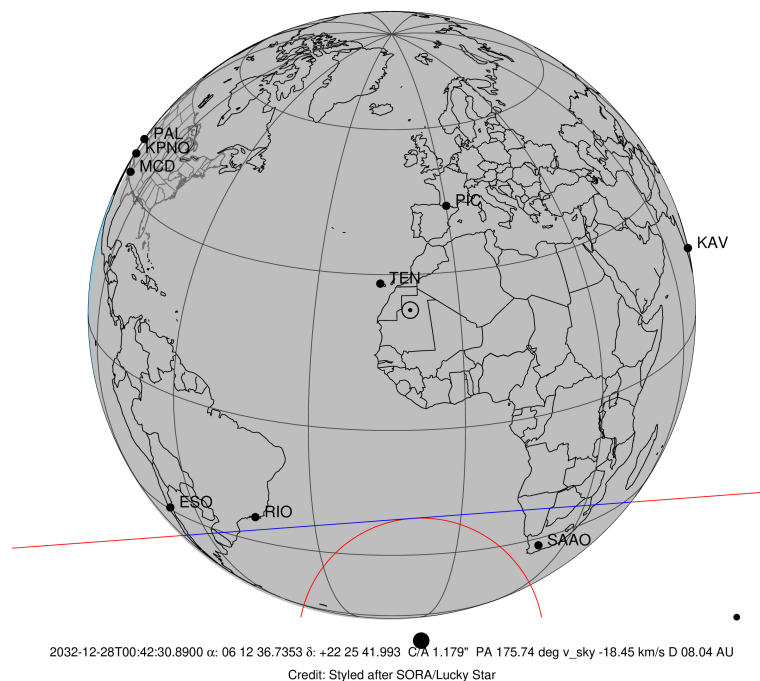


target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2032-12-28T00:42:30.890  
 Event type : Pt  
 : Titan occs: topocentric, not geocentric  
 : Not a ringed target  
 Gaia source ID : 3425023972299144960  
 2Mass ID (if available) : 06123671+2225419

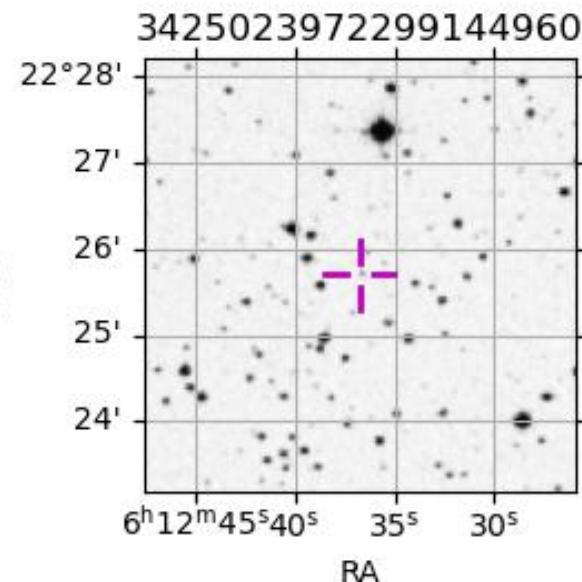
ICRS Star Coord at Epoch: 06h 12m 36.73532s +22:25:41.99292s  
 RUWE (>1.4 is poor) : 2.58  
 K magnitude : 14.333  
 G magnitude : 18.121  
 RP magnitude : 16.749  
 BP magnitude : 18.997  
 DUPflag : 0  
 Distance (au) : 8.035  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -18.45  
 Sun-Target sep (deg) : 176.41  
 Sun-Moon sep (deg) : 128.74  
 B (ring opening deg) : -26.21  
 PA of pole (deg) : -5.90  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 1.179  
 C/A sky separation (km) : 6869.5  
 NAIF SPICE kernels : RAJobs\_U111+rgf16.spk

Titan 2032-12-28T00:42:30 K14.33 G18.12 dots 60.0 sec  
 Pt



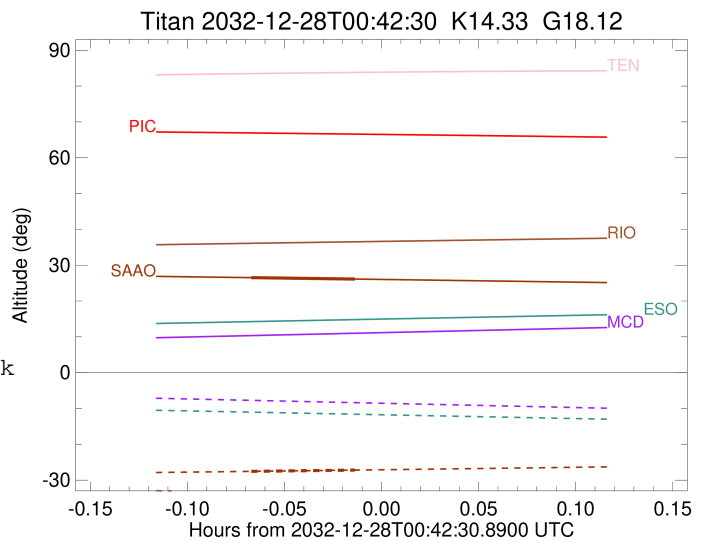
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
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	+ +	DEC 28 00:38 - DEC 28 00:41	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2032-12-28T00:40:05.110
Event type            : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code         : SAAO
Location              : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)       : -32.37953
E. Longitude (deg)   : 20.81070
Altitude (km)        : 1.768
Gaia source ID       : 3425023972299144960
2Mass ID (if available) : 06123671+2225419
ICRS Star Coord at Epoch: 06h 12m 36.73532s +22:25:41.99292s
RUWE (>1.4 is poor) : 2.58
K magnitude           : 14.333
G magnitude           : 18.121
RP magnitude          : 16.749
BP magnitude          : 18.997
DUPflag              : 0
Distance (au)        : 8.035
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -18.45
Sun-Target sep (deg) : 176.41
Sun-Moon sep (deg)   : 129.34
B (ring opening deg) : -26.21
PA of pole (deg)     : -5.90
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.313
C/A sky separation (km) : 1826.4
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	2032-12-28T00:38:28.472	26.52	-27.55	2575.1	40.70	40.72
Titan	E	2032-12-28T00:41:41.779	26.13	-27.19	2575.1	38.32	38.34