

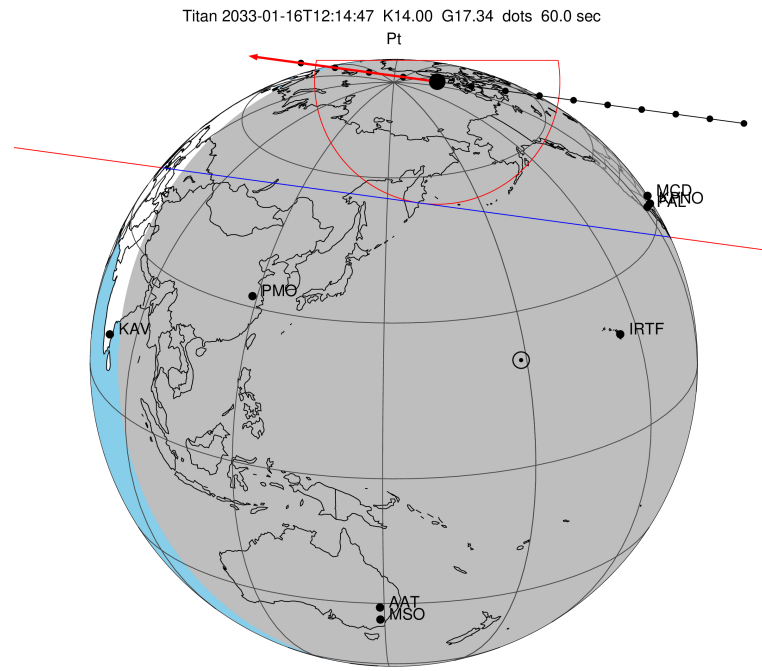
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2033-01-16T12:14:47.980
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 3423738406984302464
 2Mass ID (if available) : 06061825+2228589

ICRS Star Coord at Epoch: 06h 06m 18.25624s +22:28:58.80712s
 RUWE (>1.4 is poor) : 1.60
 K magnitude : 13.999
 G magnitude : 17.345
 RP magnitude : 16.339
 BP magnitude : 18.239
 DUPflag : 0
 Distance (au) : 8.120
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -12.04
 Sun-Target sep (deg) : 155.22
 Sun-Moon sep (deg) : 35.89
 B (ring opening deg) : -26.41
 PA of pole (deg) : -5.79
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 1.011
 C/A sky separation (km) : 5956.2
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

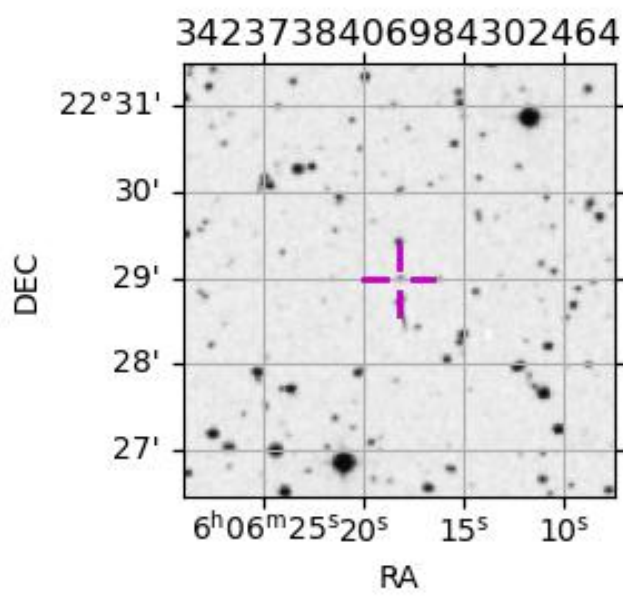
URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

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	+ +	JAN 16 12:05 - JAN 16 12:10	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	JAN 16 12:05 - JAN 16 12:10	Pie
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



2033-01-16T12:14:47.9800 α: 06 06 18.2562 δ: +22 28 58.807 C/A 1.015" PA 7.78 deg v_sky -12.04 km/s D 08.12 AU
 Credit: Styled after SORA/Lucky Star



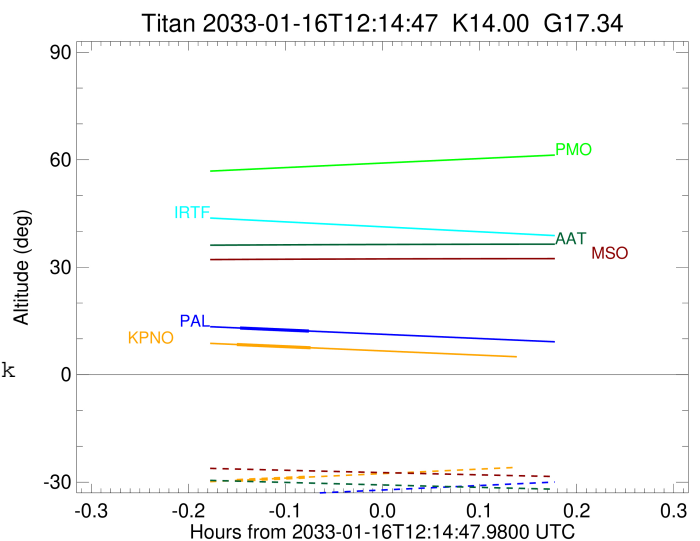
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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2033-01-16T12:08:08.120
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : PAL
Location             : Palomar Mt (200")
Latitude (deg)       : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)        : 1.706
Gaia source ID       : 3423738406984302464
2Mass ID (if available) : 06061825+2228589
ICRS Star Coord at Epoch: 06h 06m 18.25624s +22:28:58.80712s
RUWE (>1.4 is poor) : 1.60
K magnitude           : 13.999
G magnitude           : 17.345
RP magnitude         : 16.339
BP magnitude         : 18.239
DUPflag              : 0
Distance (au)        : 8.120
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -12.04
Sun-Target sep (deg) : 155.22
Sun-Moon sep (deg)   : 35.43
B (ring opening deg) : -26.41
PA of pole (deg)     : -5.79
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.348
C/A sky separation (km) : 2048.4
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

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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	2033-01-16T12:05:58.317	13.02	-34.03	2575.1	-35.03	-35.05
Titan	E	2033-01-16T12:10:17.953	12.16	-33.13	2575.0	-54.61	-54.62



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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2033-01-16T12:08:03.310
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       : 3423738406984302464
2Mass ID (if available) : 06061825+2228589
ICRS Star Coord at Epoch: 06h 06m 18.25624s +22:28:58.80712s
RUWE (>1.4 is poor) : 1.60
K magnitude          : 13.999
G magnitude          : 17.345
RP magnitude         : 16.339
BP magnitude         : 18.239
DUPflag             : 0
Distance (au)        : 8.120
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -12.04
Sun-Target sep (deg) : 155.22
Sun-Moon sep (deg)  : 35.38
B (ring opening deg) : -26.41
PA of pole (deg)    : -5.79
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.335
C/A sky separation (km) : 1970.8
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	2033-01-16T12:05:45.028	8.42	-29.52	2575.1	-32.69	-32.70
Titan	E	2033-01-16T12:10:21.621	7.51	-28.55	2575.1	-52.80	-52.81

