

target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2048-07-30T18:38:43.760  
 Event type : Pt  
 : Titan occs: topocentric, not geocentric  
 : Not a ringed target  
 Gaia source ID : 4078519017511477760  
 2Mass ID (if available) : 18440418-2233455

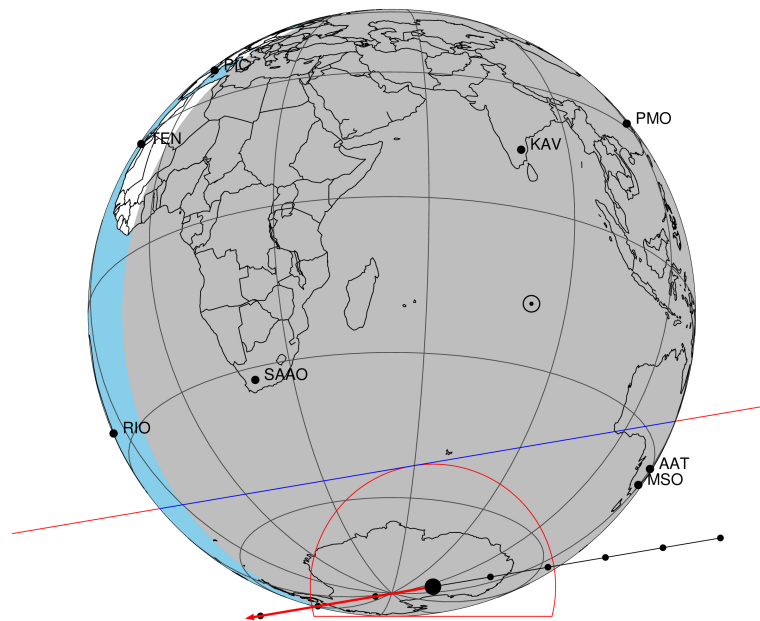
ICRS Star Coord at Epoch: 18h 44m 04.20998s -22:33:45.25204s  
 RUWE (>1.4 is poor) : 0.99  
 K magnitude : 14.341  
 G magnitude : 17.890  
 RP magnitude : 17.111  
 BP magnitude : 18.457  
 DUPflag : 0  
 Distance (au) : 9.119  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -20.41  
 Sun-Target sep (deg) : 152.57  
 Sun-Moon sep (deg) : 96.44  
 B (ring opening deg) : 25.57  
 PA of pole (deg) : 6.40  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.881  
 C/A sky separation (km) : 5828.4  
 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

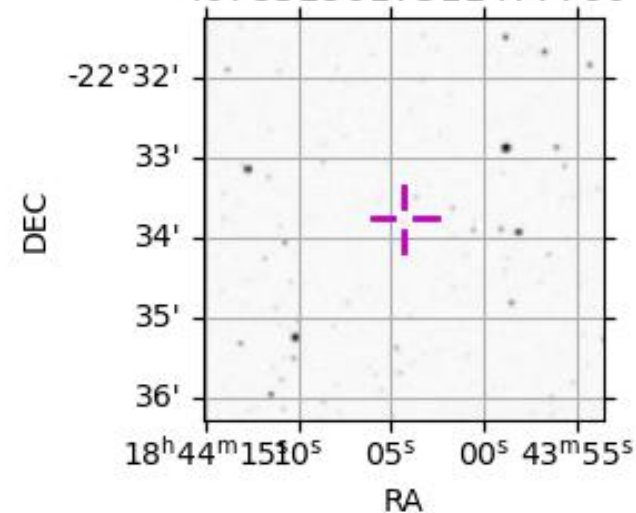
Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	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	+ +	JUL 30 18:33 - JUL 30 18:36	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUL 30 18:33 - JUL 30 18:36	Pie

Titan 2048-07-30T18:38:43 K14.34 G17.89 dots 60.0 sec  
 Pt



2048-07-30T18:38:43.7600 cc: 18 44 04.2100 & -22 33 45.252 C/A 0.880" PA 170.38 deg v\_sky -20.41 km/s D 09.12 AU  
 Credit: Styled after SORA/Lucky Star

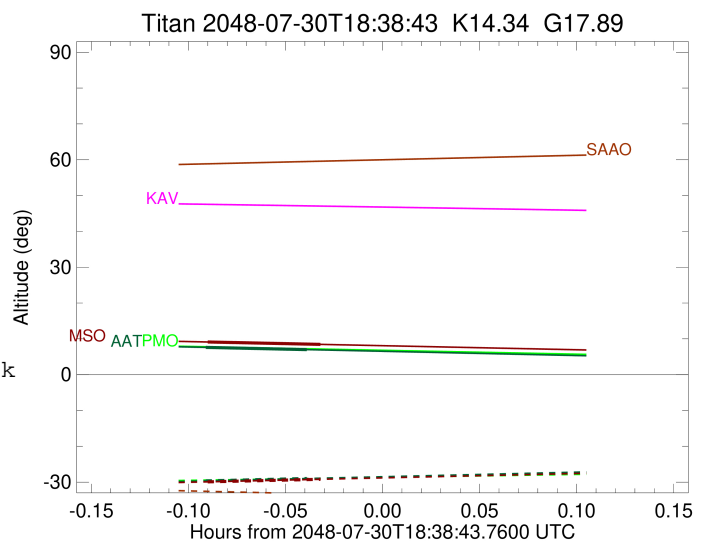
4078519017511477760



target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2048-07-30T18:34:49.220  
 Event type : Pt  
 : Titan occs: topocentric, not geocentric  
 : Not a ringed target  
 Observer code : AAT  
 Location : Siding Spring (AAT)  
 Latitude (deg) : -31.27703  
 E. Longitude (deg) : 149.06608  
 Altitude (km) : 1.164  
 Gaia source ID : 4078519017511477760  
 2Mass ID (if available) : 18440418-2233455  
 ICRS Star Coord at Epoch: 18h 44m 04.20998s -22:33:45.25204s  
 RUWE (>1.4 is poor) : 0.99  
 K magnitude : 14.341  
 G magnitude : 17.890  
 RP magnitude : 17.111  
 BP magnitude : 18.457  
 DUPflag : 0  
 Distance (au) : 9.119  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -20.41  
 Sun-Target sep (deg) : 152.57  
 Sun-Moon sep (deg) : 96.63  
 B (ring opening deg) : 25.57  
 PA of pole (deg) : 6.40  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.259  
 C/A sky separation (km) : 1712.2  
 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	2048-07-30T18:33:14.680	7.62	-29.66	2575.1	23.33	23.34
Titan	E	2048-07-30T18:36:23.757	6.99	-28.99	2575.1	49.39	49.40



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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2048-07-30T18:35:03.800
Event type          : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code       : MSO
Location            : Mt. Stromlo Observatory
Latitude (deg)      : -35.32000
E. Longitude (deg)  : 149.00833
Altitude (km)       : 0.770
Gaia source ID      : 4078519017511477760
2Mass ID (if available) : 18440418-2233455
ICRS Star Coord at Epoch: 18h 44m 04.20998s -22:33:45.25204s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 14.341
G magnitude          : 17.890
RP magnitude         : 17.111
BP magnitude         : 18.457
DUPflag             : 0
Distance (au)        : 9.119
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -20.41
Sun-Target sep (deg) : 152.57
Sun-Moon sep (deg)   : 96.65
B (ring opening deg) : 25.57
PA of pole (deg)     : 6.40
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.215
C/A sky separation (km) : 1421.8
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

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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	2048-07-30T18:33:18.288	9.13	-29.92	2575.2	16.06	16.07
Titan	E	2048-07-30T18:36:49.312	8.45	-29.20	2575.1	43.04	43.05

