

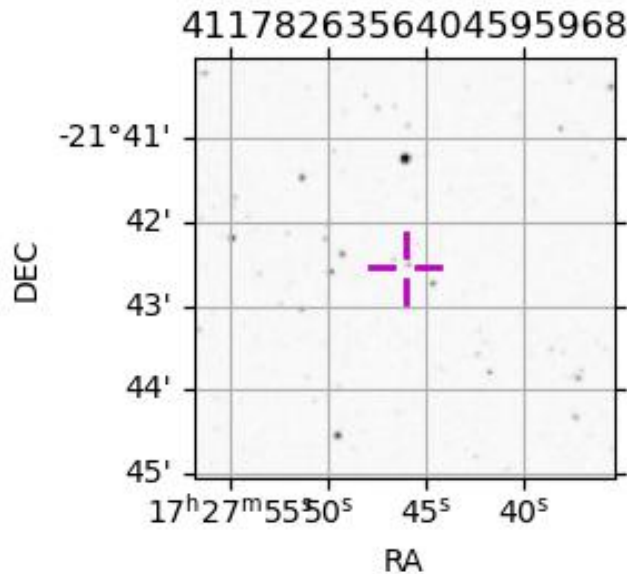
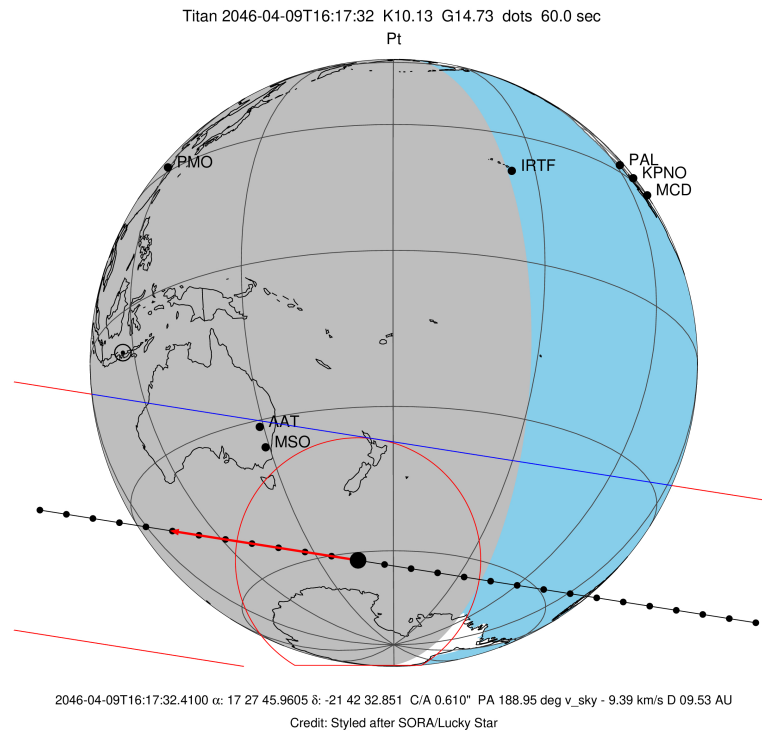
target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2046-04-09T16:17:32.410  
 Event type : Pt  
 : Titan occs: topocentric, not geocentric  
 : Not a ringed target  
 Gaia source ID : 4117826356404595968  
 2Mass ID (if available) : 17274597-2142326

ICRS Star Coord at Epoch: 17h 27m 45.96049s -21:42:32.85141s  
 RUWE (>1.4 is poor) : 0.95  
 K magnitude : 10.131  
 G magnitude : 14.726  
 RP magnitude : 13.529  
 BP magnitude : 16.215  
 DUPflag : 0  
 Distance (au) : 9.531  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -9.39  
 Sun-Target sep (deg) : 116.82  
 Sun-Moon sep (deg) : 152.18  
 B (ring opening deg) : 26.48  
 PA of pole (deg) : 4.95  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.609  
 C/A sky separation (km) : 4206.6  
 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			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	+ +	APR 09 16:20 - APR 09 16:22	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	APR 09 16:19 - APR 09 16:24	Pie



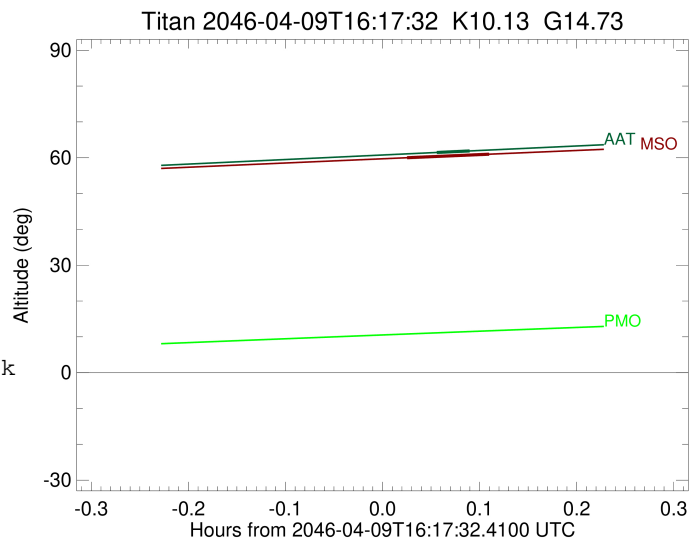
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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2046-04-09T16:21:55.070
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : AAT
Location             : Siding Spring (AAT)
Latitude (deg)       : -31.27703
E. Longitude (deg)   : 149.06608
Altitude (km)        : 1.164
Gaia source ID       : 4117826356404595968
2Mass ID (if available) : 17274597-2142326
ICRS Star Coord at Epoch: 17h 27m 45.96049s -21:42:32.85141s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 10.131
G magnitude          : 14.726
RP magnitude         : 13.529
BP magnitude         : 16.215
DUPflag             : 0
Distance (au)        : 9.531
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -9.39
Sun-Target sep (deg) : 116.82
Sun-Moon sep (deg)   : 152.17
B (ring opening deg) : 26.48
PA of pole (deg)     : 4.95
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.362
C/A sky separation (km) : 2502.6
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	2046-04-09T16:20:52.687	61.46	-50.72	2575.1	61.71	61.72
Titan	E	2046-04-09T16:22:57.450	61.89	-50.33	2575.1	58.91	58.93



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target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2046-04-09T16:21:36.970
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       : 4117826356404595968
2Mass ID (if available) : 17274597-2142326
ICRS Star Coord at Epoch: 17h 27m 45.96049s -21:42:32.85141s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 10.131
G magnitude           : 14.726
RP magnitude          : 13.529
BP magnitude          : 16.215
DUPflag              : 0
Distance (au)        : 9.531
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -9.39
Sun-Target sep (deg) : 116.82
Sun-Moon sep (deg)   : 152.17
B (ring opening deg) : 26.48
PA of pole (deg)     : 4.95
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.303
C/A sky separation (km): 2095.3
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	2046-04-09T16:19:02.738	59.99	-48.98	2575.1	49.21	49.22
Titan	E	2046-04-09T16:24:11.172	60.99	-48.10	2575.1	44.18	44.20

