

target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2046-06-30T07:51:02.380
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4115677425286629376
 2Mass ID (if available) : 17073934-2122349

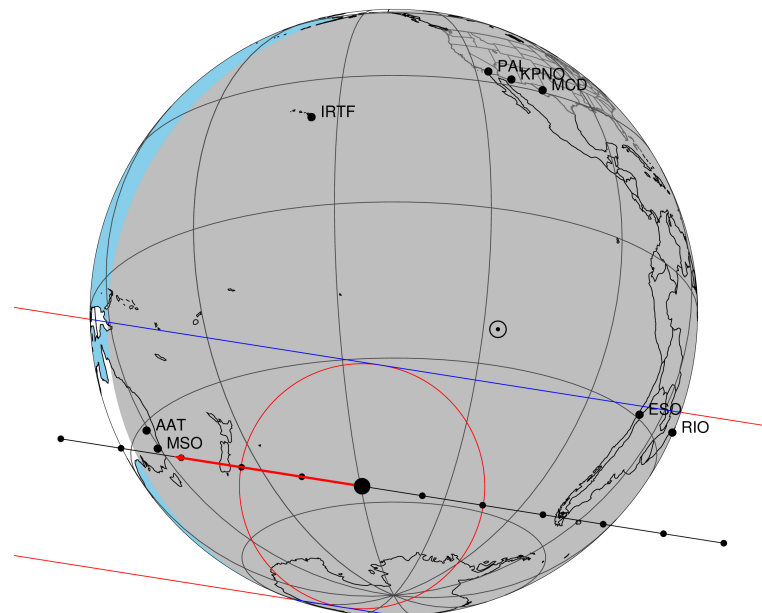
ICRS Star Coord at Epoch: 17h 07m 39.34918s -21:22:35.19296s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 14.989
 G magnitude : 17.754
 RP magnitude : 16.977
 BP magnitude : 18.407
 DUPflag : 0
 Distance (au) : 9.071
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -21.35
 Sun-Target sep (deg) : 159.69
 Sun-Moon sep (deg) : 153.21
 B (ring opening deg) : 26.53
 PA of pole (deg) : 4.46
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.562
 C/A sky separation (km) : 3696.9
 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

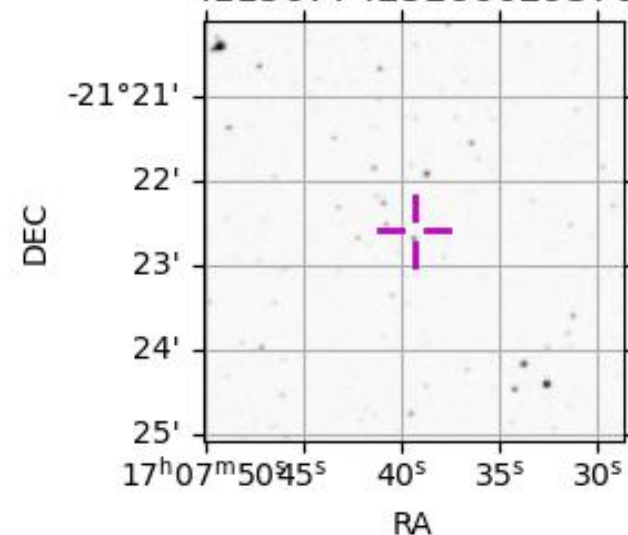
Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	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	+ +	JUN 30 07:46 - JUN 30 07:47	Pie
AAT	Siding Spring (AAT)	-31.3	149.1	+ +	JUN 30 07:52 - JUN 30 07:56	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUN 30 07:52 - JUN 30 07:56	Pie

Titan 2046-06-30T07:51:02 K14.99 G17.75 dots 60.0 sec
 Pt



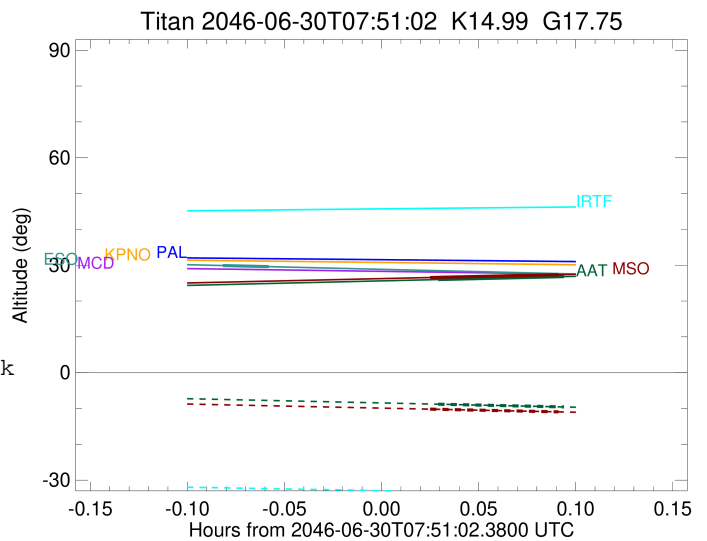
2046-06-30T07:51:02.3800 cc: 17 07 39.3492 d: -21 22 35.193 C/A 0.563" PA 188.95 deg v_sky -21.35 km/s D 09.07 AU
 Credit: Styled after SORA/Lucky Star

4115677425286629376



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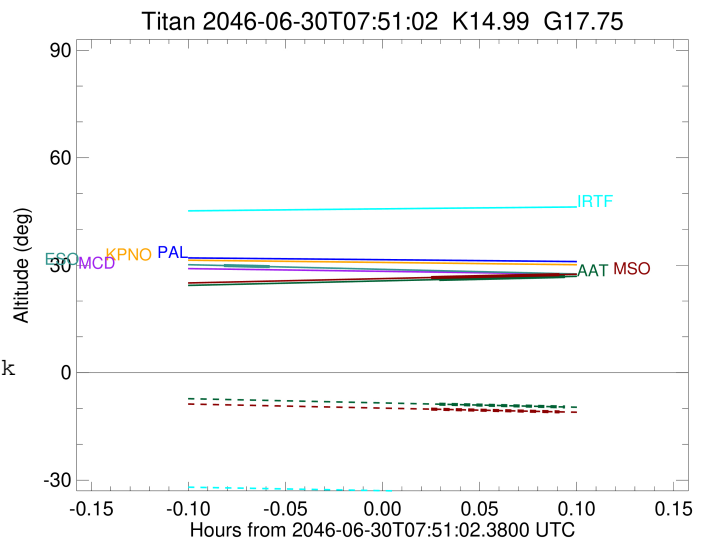
target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2046-06-30T07:46:50.870
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : ESO
Location             : European Southern Obs. (3.6m)
Latitude (deg)       : -29.26097
E. Longitude (deg)  : 289.26831
Altitude (km)        : 2.400
Gaia source ID       : 4115677425286629376
2Mass ID (if available) : 17073934-2122349
ICRS Star Coord at Epoch: 17h 07m 39.34918s -21:22:35.19296s
RUWE (>1.4 is poor) : 1.01
K magnitude          : 14.989
G magnitude          : 17.754
RP magnitude         : 16.977
BP magnitude         : 18.407
DUPflag             : 0
Distance (au)        : 9.071
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -21.35
Sun-Target sep (deg) : 159.69
Sun-Moon sep (deg)  : 154.03
B (ring opening deg) : 26.53
PA of pole (deg)    : 4.46
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.366
C/A sky separation (km) : 2405.8
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	2046-06-30T07:46:08.243	29.90	-49.50	2575.0	59.27	59.28
Titan	E	2046-06-30T07:47:33.511	29.59	-49.19	2575.1	53.74	53.75

target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2046-06-30T07:54:44.370
 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 : 4115677425286629376
 2Mass ID (if available) : 17073934-2122349
 ICRS Star Coord at Epoch: 17h 07m 39.34918s -21:22:35.19296s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 14.989
 G magnitude : 17.754
 RP magnitude : 16.977
 BP magnitude : 18.407
 DUPflag : 0
 Distance (au) : 9.071
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -21.35
 Sun-Target sep (deg) : 159.69
 Sun-Moon sep (deg) : 152.68
 B (ring opening deg) : 26.53
 PA of pole (deg) : 4.46
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.079
 C/A sky separation (km) : 519.7
 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	2046-06-30T07:52:46.793	25.99	-8.80	2575.1	14.03	14.04
Titan	E	2046-06-30T07:56:41.946	26.82	-9.58	2575.2	6.75	6.76

```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2046-06-30T07:54:31.130
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       : 4115677425286629376
2Mass ID (if available) : 17073934-2122349
ICRS Star Coord at Epoch: 17h 07m 39.34918s -21:22:35.19296s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 14.989
G magnitude           : 17.754
RP magnitude         : 16.977
BP magnitude         : 18.407
DUPflag              : 0
Distance (au)        : 9.071
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -21.35
Sun-Target sep (deg) : 159.69
Sun-Moon sep (deg)   : 152.70
B (ring opening deg) : 26.53
PA of pole (deg)     : 4.46
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.027
C/A sky separation (km) : 177.7
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	2046-06-30T07:52:31.345	26.55	-10.18	2575.1	7.20	7.21
Titan	E	2046-06-30T07:56:30.922	27.36	-10.94	2575.2	-0.14	-0.14

