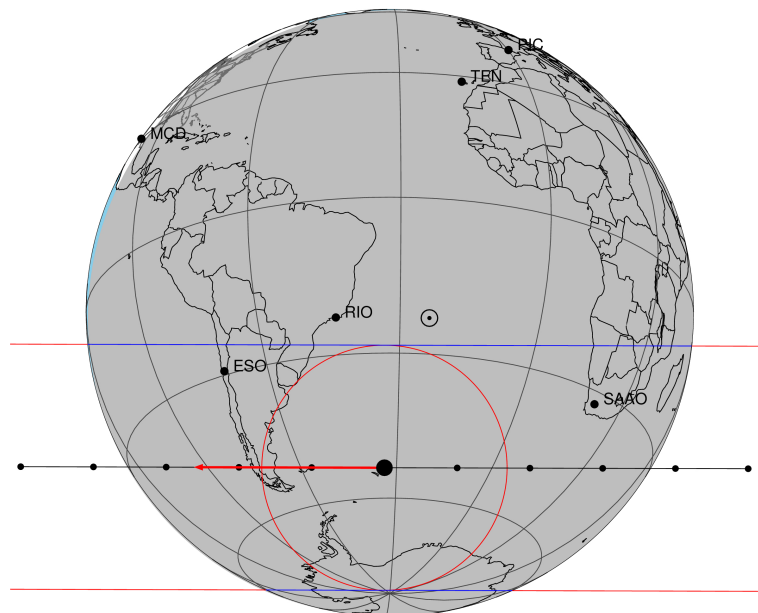


target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2047-06-30T01:39:22.400  
 Event type : Pt  
 : Titan occs: topocentric, not geocentric  
 : Not a ringed target  
 Gaia source ID : 4069543364803980160  
 2Mass ID (if available) : 18002707-2223483

ICRS Star Coord at Epoch: 18h 00m 27.07474s -22:23:48.43390s  
 RUWE (>1.4 is poor) : 1.04  
 K magnitude : 10.954  
 G magnitude : 15.694  
 RP magnitude : 14.467  
 BP magnitude : 17.369  
 DUPflag : 0  
 Distance (au) : 9.030  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -25.45  
 Sun-Target sep (deg) : 172.44  
 Sun-Moon sep (deg) : 91.32  
 B (ring opening deg) : 26.46  
 PA of pole (deg) : 5.67  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.497  
 C/A sky separation (km) : 3255.0  
 NAIF SPICE kernels : RAJobs\_U111+rgf16.spk  
 URKALLv1.spk  
 naif0012.tls  
 nep097.bsp  
 nep101.bsp  
 sat4401.bsp

Titan 2047-06-30T01:39:22 K10.95 G15.69 dots 60.0 sec  
 Pt



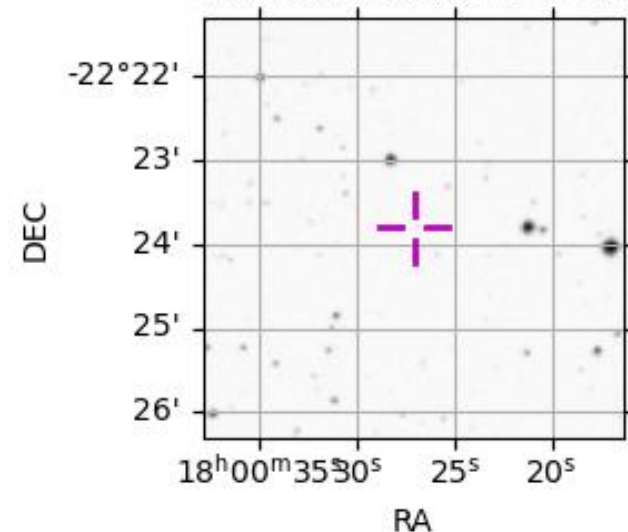
2047-06-30T01:39:22.4000 α: 18 00 27.0747 δ: -22 23 48.434 C/A 0.497" PA 180.16 deg v\_sky -25.46 km/s D 09.03 AU

Credit: Styled after SORA/Lucky Star

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	+ +	JUN 30 01:40 - JUN 30 01:42	Pie
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUN 30 01:35 - JUN 30 01:38	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

4069543364803980160



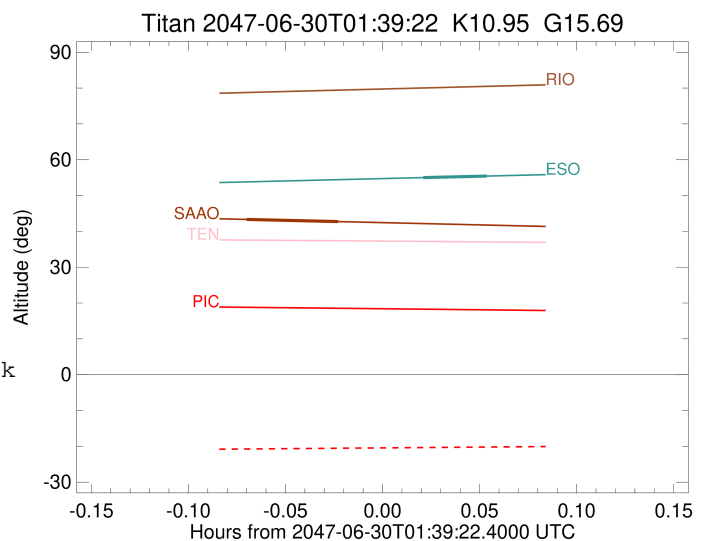
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-06-30T01:41:37.130
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       : 4069543364803980160
2Mass ID (if available) : 18002707-2223483
ICRS Star Coord at Epoch: 18h 00m 27.07474s -22:23:48.43390s
RUWE (>1.4 is poor) : 1.04
K magnitude           : 10.954
G magnitude           : 15.694
RP magnitude          : 14.467
BP magnitude          : 17.369
DUPflag              : 0
Distance (au)        : 9.030
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -25.45
Sun-Target sep (deg) : 172.44
Sun-Moon sep (deg)   : 92.14
B (ring opening deg) : 26.46
PA of pole (deg)     : 5.67
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.316
C/A sky separation (km): 2067.1
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	2047-06-30T01:40:37.555	55.00	-48.13	2575.1	41.44	41.45
Titan	E	2047-06-30T01:42:36.703	55.44	-48.56	2575.1	50.19	50.21



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-06-30T01:36:35.380
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       : 4069543364803980160
2Mass ID (if available) : 18002707-2223483
ICRS Star Coord at Epoch: 18h 00m 27.07474s -22:23:48.43390s
RUWE (>1.4 is poor) : 1.04
K magnitude          : 10.954
G magnitude          : 15.694
RP magnitude         : 14.467
BP magnitude         : 17.369
DUPflag             : 0
Distance (au)        : 9.030
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -25.45
Sun-Target sep (deg) : 172.44
Sun-Moon sep (deg)   : 91.96
B (ring opening deg) : 26.46
PA of pole (deg)     : 5.67
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.208
C/A sky separation (km) : 1363.6
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	2047-06-30T01:35:10.379	43.33	-50.54	2575.1	23.74	23.75
Titan	E	2047-06-30T01:38:00.387	42.73	-49.94	2575.1	32.79	32.80

