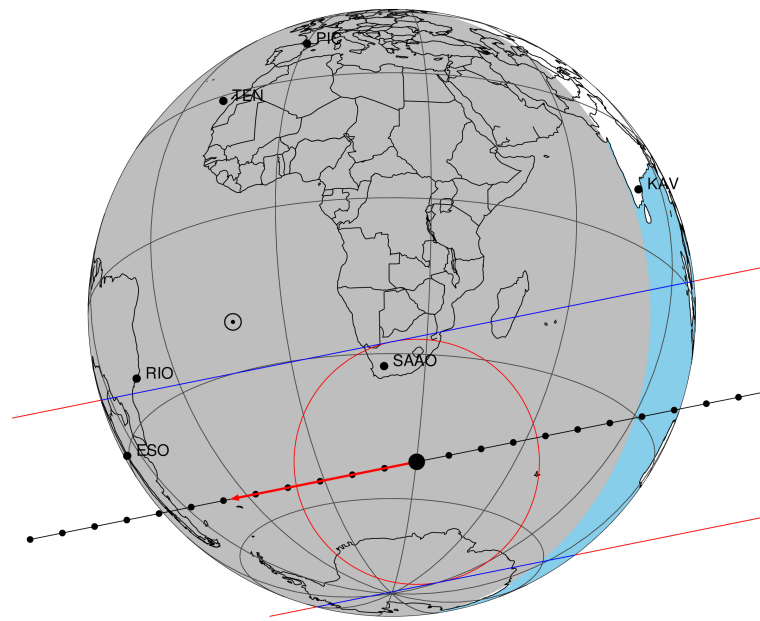


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-05-23T00:42:18.710
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4066731084629225216
 2Mass ID (if available) : 18115835-2217458

ICRS Star Coord at Epoch: 18h 11m 58.34826s -22:17:45.98268s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 13.312
 G magnitude : 15.048
 RP magnitude : 14.445
 BP magnitude : 15.463
 DUPflag : 0
 Distance (au) : 9.175
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -11.50
 Sun-Target sep (deg) : 148.41
 Sun-Moon sep (deg) : 128.10
 B (ring opening deg) : 26.10
 PA of pole (deg) : 5.88
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.480
 C/A sky separation (km) : 3191.0
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

Titan 2047-05-23T00:42:18 K13.31 G15.05 dots 60.0 sec
 Pt

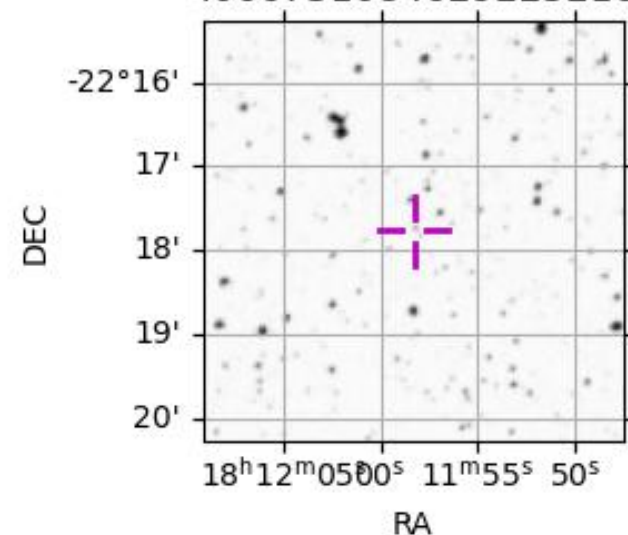


2047-05-23T00:42:18.7100 cc: 18 11 58.3483 s: -22 17 45.983 C/A 0.477" PA 168.63 deg v_sky -11.49 km/s D 09.18 AU
 Credit: Styled after SORA/Lucky Star

Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	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	+ +	MAY 23 00:47 - MAY 23 00:54	Pie
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	MAY 23 00:40 - MAY 23 00:44	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

4066731084629225216



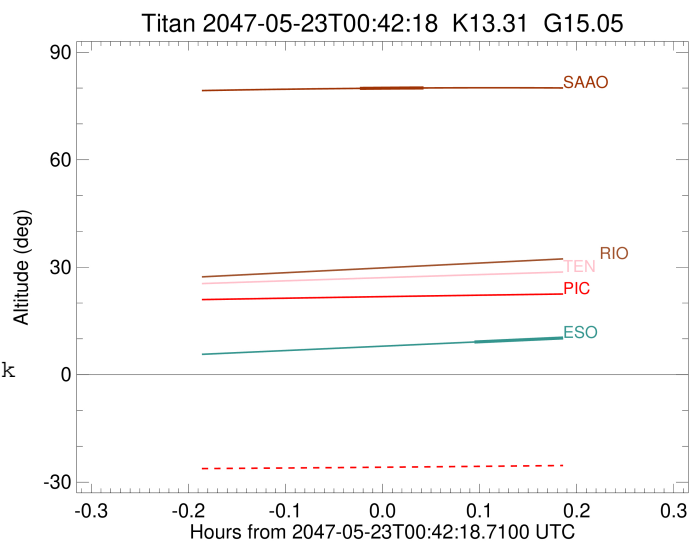
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-05-23T00:51:02.570
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       : 4066731084629225216
2Mass ID (if available) : 18115835-2217458
ICRS Star Coord at Epoch: 18h 11m 58.34826s -22:17:45.98268s
RUWE (>1.4 is poor) : 0.96
K magnitude           : 13.312
G magnitude           : 15.048
RP magnitude          : 14.445
BP magnitude          : 15.463
DUPflag              : 0
Distance (au)        : 9.175
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -11.50
Sun-Target sep (deg) : 148.41
Sun-Moon sep (deg)   : 127.68
B (ring opening deg) : 26.10
PA of pole (deg)     : 5.88
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.221
C/A sky separation (km): 1467.7
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	2047-05-23T00:47:58.929	9.11	-37.26	2575.1	14.99	14.99
Titan	E	2047-05-23T00:54:06.059	10.37	-38.59	2575.1	45.64	45.65



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-05-23T00:42:51.930
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        : 4066731084629225216
2Mass ID (if available) : 18115835-2217458
ICRS Star Coord at Epoch: 18h 11m 58.34826s -22:17:45.98268s
RUWE (>1.4 is poor)  : 0.96
K magnitude           : 13.312
G magnitude           : 15.048
RP magnitude          : 14.445
BP magnitude          : 15.463
DUPflag              : 0
Distance (au)         : 9.175
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -11.50
Sun-Target sep (deg)  : 148.41
Sun-Moon sep (deg)    : 128.76
B (ring opening deg)  : 26.10
PA of pole (deg)      : 5.88
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.322
C/A sky separation (km) : 2144.6
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	2047-05-23T00:40:51.922	79.90	-59.31	2575.0	34.84	34.86
Titan	E	2047-05-23T00:44:51.922	80.03	-58.49	2575.1	59.32	59.33

