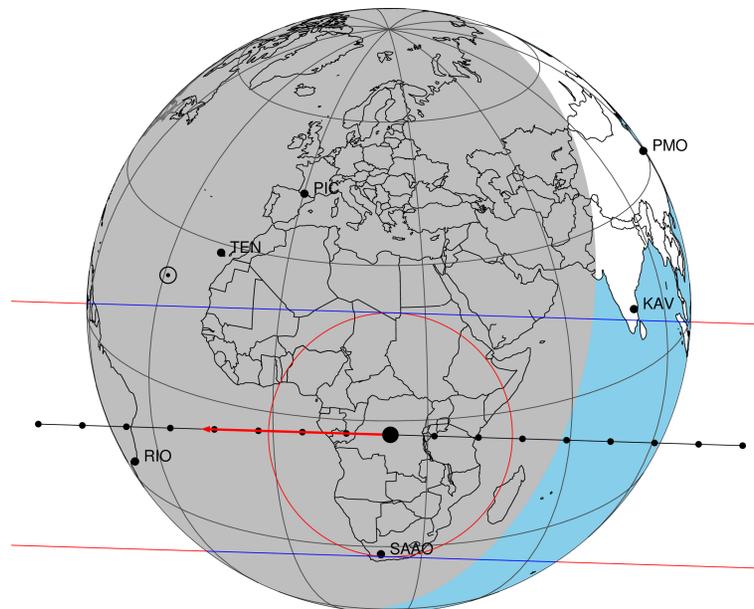


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2033-11-25T01:42:09.000
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 865960759445705472
 2Mass ID (if available) : 07274908+2132562

ICRS Star Coord at Epoch: 07h 27m 49.10990s +21:32:56.12177s
 RUWE (>1.4 is poor) : 1.46
 K magnitude : 14.498
 G magnitude : 16.929
 RP magnitude : 16.087
 BP magnitude : 17.424
 DUPflag : 0
 Distance (au) : 8.328
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -15.49
 Sun-Target sep (deg) : 132.27
 Sun-Moon sep (deg) : 165.78
 B (ring opening deg) : -23.39
 PA of pole (deg) : -6.83
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.434
 C/A sky separation (km) : 2619.4
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

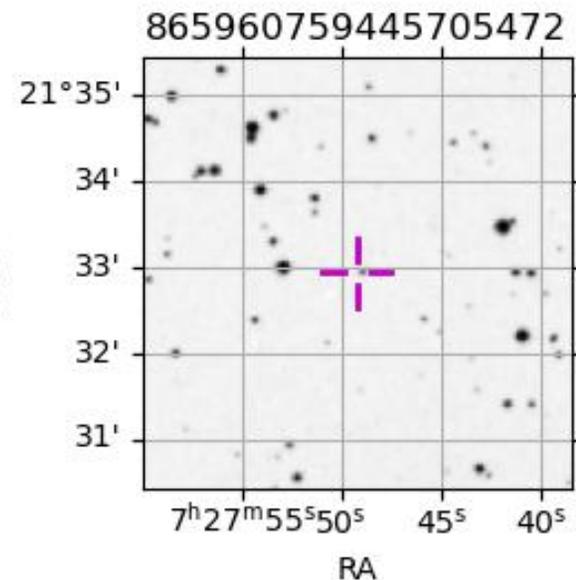
Titan 2033-11-25T01:42:09 K14.50 G16.93 dots 60.0 sec
 Pt



2033-11-25T01:42:09.0000 α : 07 27 49.1099 δ : +21 32 56.122 C/A 0.435" PA 181.75 deg v_sky -15.50 km/s D 08.33 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	+ +	NOV 25 01:45 - NOV 25 01:50	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3			Pnn
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	NOV 25 01:41 - NOV 25 01:42	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



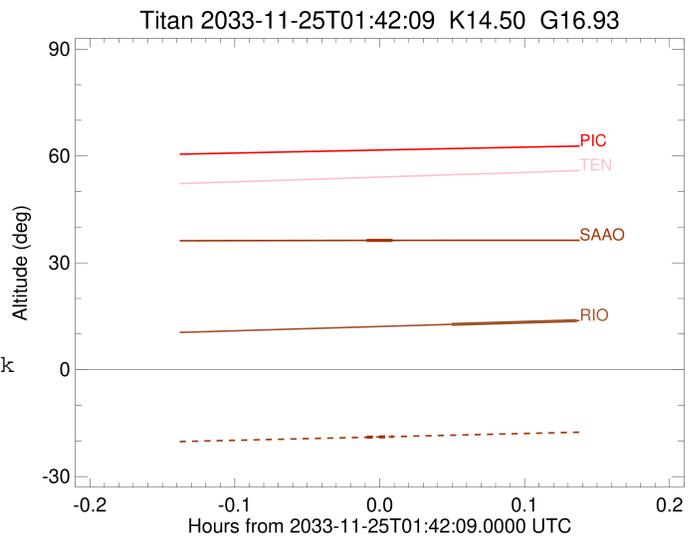
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2033-11-25T01:47:43.450
Event type          : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code       : RIO
Location           : Rio de Janeiro
Latitude (deg)     : -22.89506
E. Longitude (deg) : 316.77708
Altitude (km)      : 0.033
Gaia source ID     : 865960759445705472
2Mass ID (if available) : 07274908+2132562
ICRS Star Coord at Epoch: 07h 27m 49.10990s +21:32:56.12177s
RUWE (>1.4 is poor) : 1.46
K magnitude         : 14.498
G magnitude         : 16.929
RP magnitude        : 16.087
BP magnitude        : 17.424
DUPflag            : 0
Distance (au)      : 8.328
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -15.49
Sun-Target sep (deg) : 132.27
Sun-Moon sep (deg)  : 165.00
B (ring opening deg) : -23.39
PA of pole (deg)    : -6.83
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.130
C/A sky separation (km) : 782.3
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

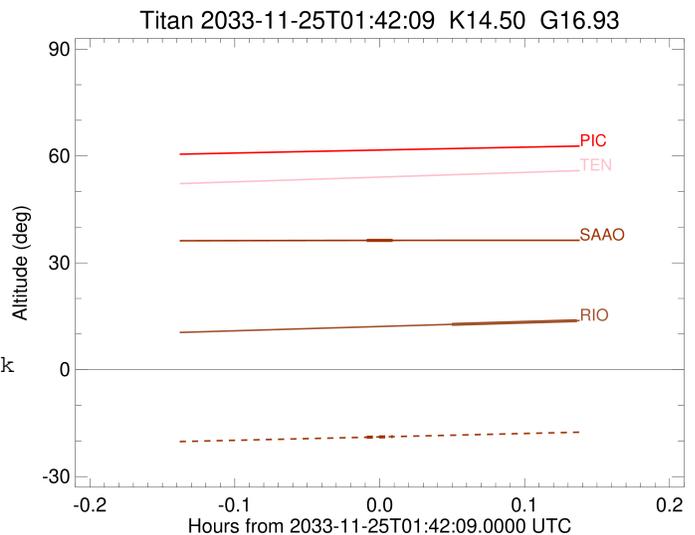
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2033-11-25T01:45:07.036	12.72	-44.48	2575.2	-7.90	-7.90
Titan	E	2033-11-25T01:50:19.836	13.76	-44.83	2575.1	-24.40	-24.41



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2033-11-25T01:42:08.670
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       : 865960759445705472
2Mass ID (if available) : 07274908+2132562
ICRS Star Coord at Epoch: 07h 27m 49.10990s +21:32:56.12177s
RUWE (>1.4 is poor) : 1.46
K magnitude           : 14.498
G magnitude           : 16.929
RP magnitude          : 16.087
BP magnitude          : 17.424
DUPflag              : 0
Distance (au)        : 8.328
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.49
Sun-Target sep (deg) : 132.27
Sun-Moon sep (deg)   : 165.74
B (ring opening deg) : -23.39
PA of pole (deg)     : -6.83
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.417
C/A sky separation (km) : 2517.9
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	2033-11-25T01:41:34.712	36.29	-18.97	2575.1	-59.19	-59.20
Titan	E	2033-11-25T01:42:42.632	36.30	-18.79	2575.1	-66.36	-66.37