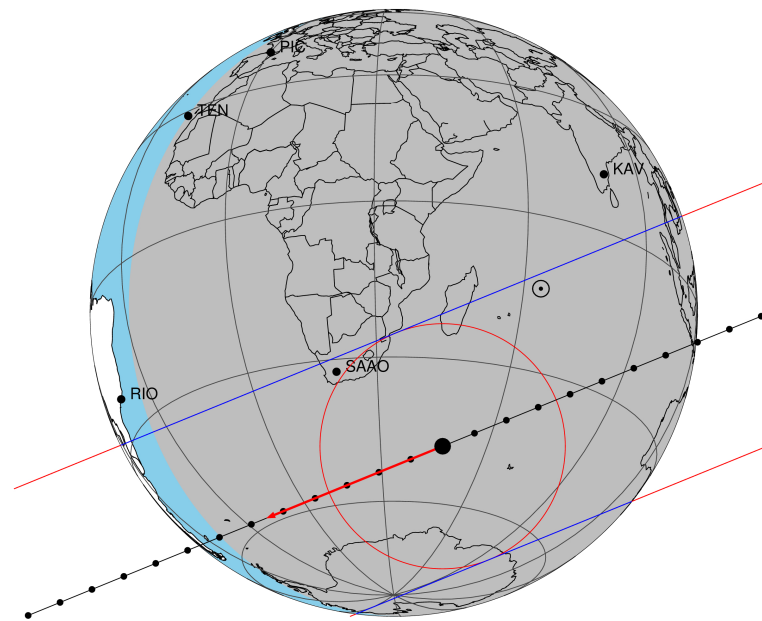


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2049-08-13T19:49:52.570
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 6772120234077030016
 2Mass ID (if available) : 19323955-2145270

Titan 2049-08-13T19:49:52 K13.32 G15.13 dots 60.0 sec
 Pt

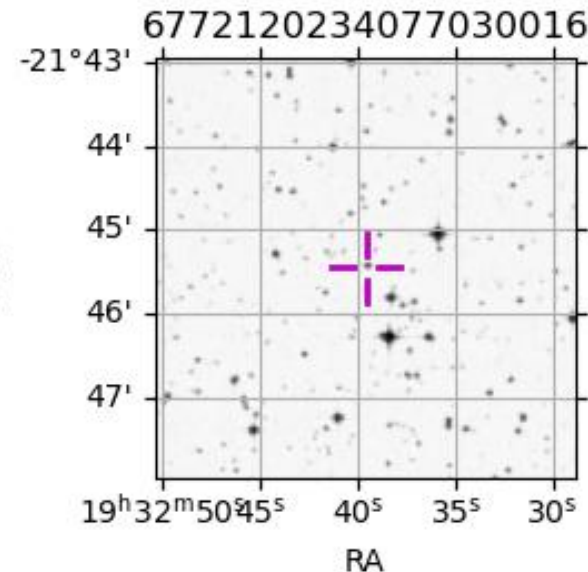
ICRS Star Coord at Epoch: 19h 32m 39.54239s -21:45:27.35648s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 13.316
 G magnitude : 15.133
 RP magnitude : 14.517
 BP magnitude : 15.584
 DUPflag : 0
 Distance (au) : 9.114
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -12.05
 Sun-Target sep (deg) : 150.61
 Sun-Moon sep (deg) : 35.92
 B (ring opening deg) : 23.46
 PA of pole (deg) : 6.88
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.455
 C/A sky separation (km) : 3009.2
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk



2049-08-13T19:49:52.5700 cc: 19 32 39.5424 d: -21 45 27.356 C/A 0.451" PA 157.78 deg v_sky -12.05 km/s D 09.11 AU
 Credit: Styled after SORA/Lucky Star

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

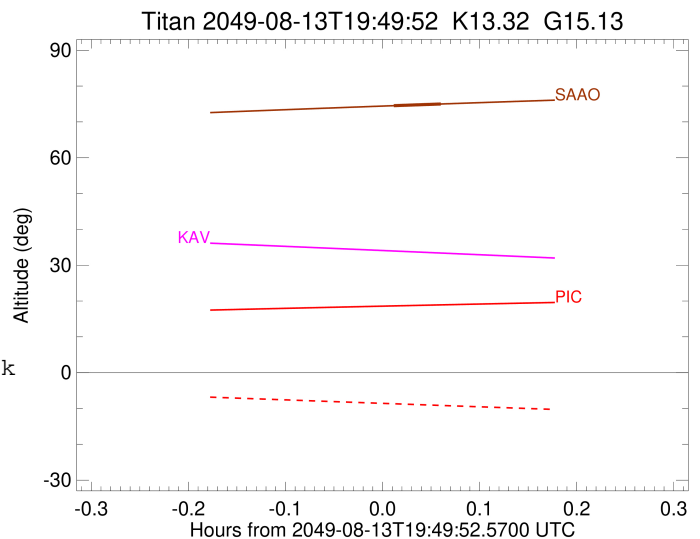
Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	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			Pnn
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	AUG 13 19:50 - AUG 13 19:53	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2049-08-13T19:52:01.550
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       : 6772120234077030016
2Mass ID (if available) : 19323955-2145270
ICRS Star Coord at Epoch: 19h 32m 39.54239s -21:45:27.35648s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 13.316
G magnitude          : 15.133
RP magnitude         : 14.517
BP magnitude         : 15.584
DUPflag             : 0
Distance (au)        : 9.114
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -12.05
Sun-Target sep (deg) : 150.61
Sun-Moon sep (deg)   : 36.70
B (ring opening deg) : 23.46
PA of pole (deg)     : 6.88
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.352
C/A sky separation (km): 2329.4
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	2049-08-13T19:50:33.123	74.52	-47.24	2575.2	32.82	32.83
Titan	E	2049-08-13T19:53:29.963	74.99	-47.85	2575.1	66.32	66.33