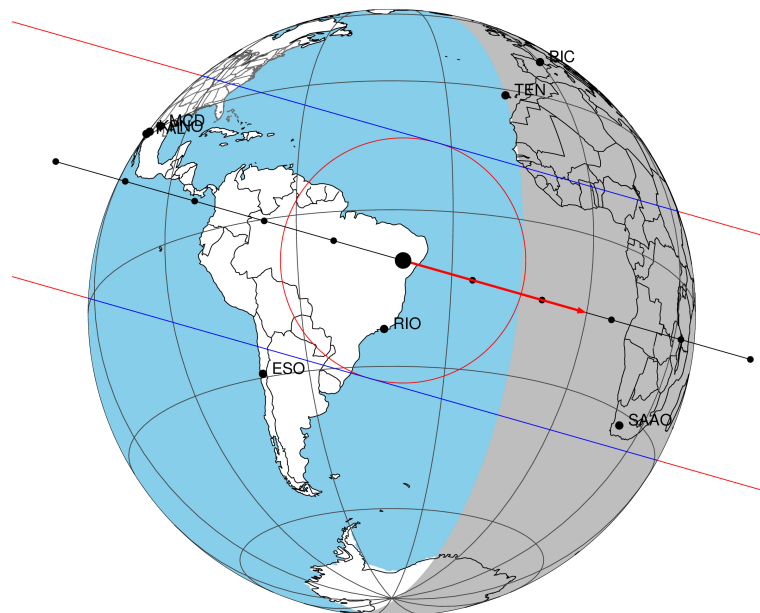


target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2045-09-23T18:55:35.990  
 Event type : Pgt  
 : Titan occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 6244790265504581248  
 2Mass ID (if available) : 16183256-1944451

ICRS Star Coord at Epoch: 16h 18m 32.55903s -19:44:45.43662s  
 RUWE (>1.4 is poor) : 0.99  
 K magnitude : 14.166  
 G magnitude : 16.677  
 RP magnitude : 15.895  
 BP magnitude : 17.301  
 DUPflag : 0  
 Distance (au) : 10.389  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 25.27  
 Sun-Target sep (deg) : 65.70  
 Sun-Moon sep (deg) : 87.02  
 B (ring opening deg) : 25.67  
 PA of pole (deg) : 3.09  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.150  
 C/A sky separation (km) : 1131.3  
 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

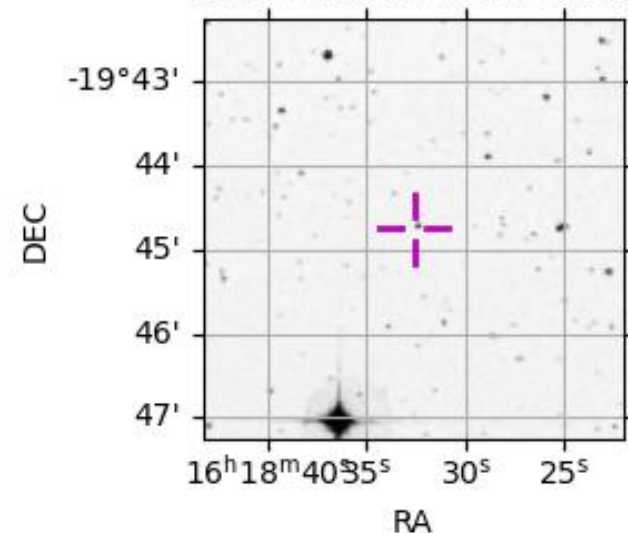
Titan 2045-09-23T18:55:35 K14.17 G16.68 dots 60.0 sec  
 Pgt



2045-09-23T18:55:35.9900 α: 16 18 32.5590 δ: -19 44 45.437 C/A 0.149" PA 15.94 deg v\_sky +25.28 km/s D 10.39 AU  
 Credit: Styled after SORA/Lucky Star

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	+ +	SEP 23 18:58 - SEP 23 19:00	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

6244790265504581248



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2045-09-23T18:59:04.710
Event type          : Pgt
: Titan occs: geocentric, topocentric
: 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     : 6244790265504581248
2Mass ID (if available) : 16183256-1944451
ICRS Star Coord at Epoch: 16h 18m 32.55903s -19:44:45.43662s
RUWE (>1.4 is poor) : 0.99
K magnitude         : 14.166
G magnitude         : 16.677
RP magnitude        : 15.895
BP magnitude        : 17.301
DUPflag            : 0
Distance (au)      : 10.389
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 25.27
Sun-Target sep (deg) : 65.70
Sun-Moon sep (deg)  : 87.49
B (ring opening deg) : 25.67
PA of pole (deg)    : 3.09
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.281
C/A sky separation (km) : 2114.4
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	2045-09-23T18:58:06.091	32.77	-30.58	2575.1	-56.61	-56.62
Titan	E	2045-09-23T19:00:03.339	32.35	-30.96	2575.1	-37.53	-37.55

