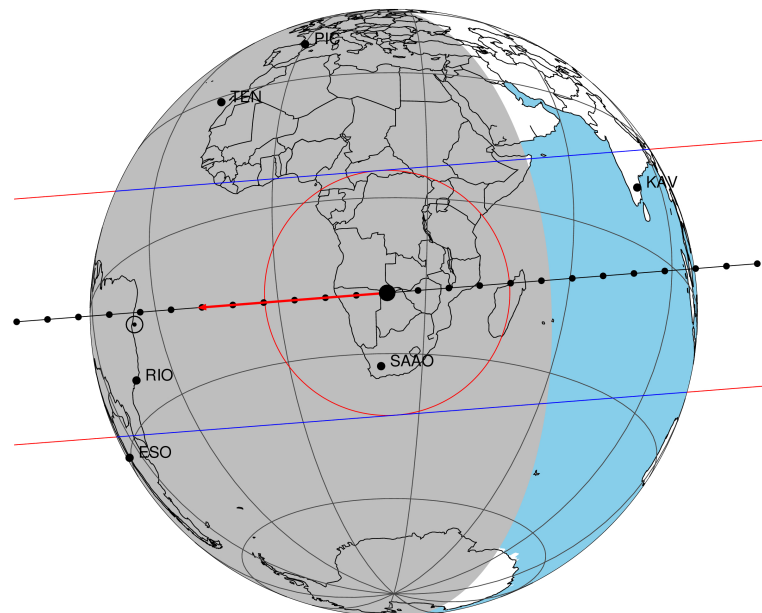


target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2047-04-26T02:28:38.400  
 Event type : Pgt  
 : Titan occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4090521561319423488  
 2Mass ID (if available) : 18163544-2218296

ICRS Star Coord at Epoch: 18h 16m 35.45913s -22:18:29.50961s  
 RUWE (>1.4 is poor) : 0.95  
 K magnitude : 13.550  
 G magnitude : 16.609  
 RP magnitude : 15.614  
 BP magnitude : 17.293  
 DUPflag : 0  
 Distance (au) : 9.479  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -10.83  
 Sun-Target sep (deg) : 121.31  
 Sun-Moon sep (deg) : 130.95  
 B (ring opening deg) : 26.00  
 PA of pole (deg) : 5.96  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.062  
 C/A sky separation (km) : 423.0  
 NAIF SPICE kernels : RAJobs\_U111+rgf16.spk

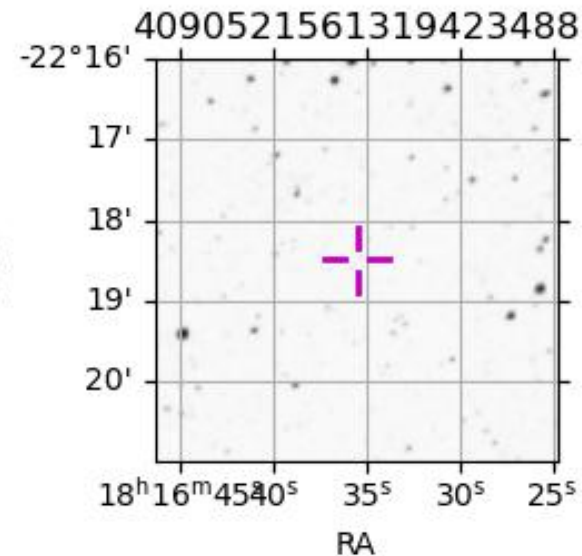
Titan 2047-04-26T02:28:38 K13.55 G16.61 dots 60.0 sec  
 Pgt



2047-04-26T02:28:38.400000 cc: 18 16 35.45910 d: -22 18 29.510 C/A 0.062" PA 355.49 deg v\_sky -10.83 km/s D 09.48 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	+ +	APR 26 02:33 - APR 26 02:40	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	+ +	APR 26 02:26 - APR 26 02:32	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

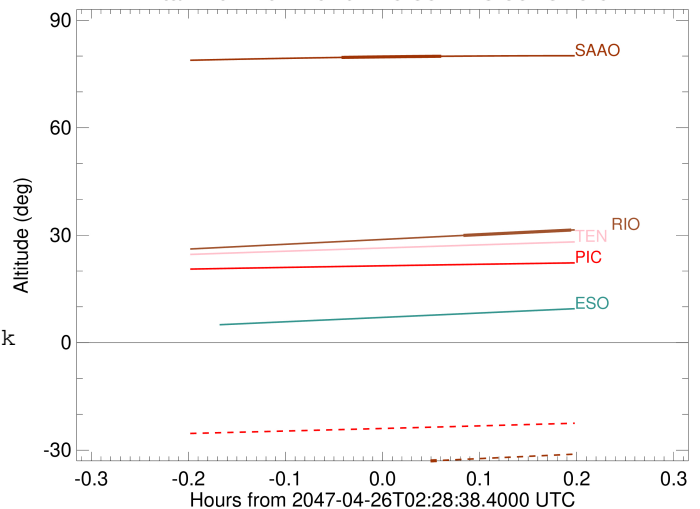


```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-04-26T02:36:59.070
Event type           : Pgt
: Titan occs: geocentric, topocentric
: 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       : 4090521561319423488
2Mass ID (if available) : 18163544-2218296
ICRS Star Coord at Epoch: 18h 16m 35.45913s -22:18:29.50961s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 13.550
G magnitude           : 16.609
RP magnitude         : 15.614
BP magnitude         : 17.293
DUPflag              : 0
Distance (au)        : 9.479
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -10.83
Sun-Target sep (deg) : 121.31
Sun-Moon sep (deg)   : 130.77
B (ring opening deg) : 26.00
PA of pole (deg)     : 5.96
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.190
C/A sky separation (km) : 1308.7
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

```

Titan 2047-04-26T02:28:38 K13.55 G16.61



x: target alt < 5.0 deg or sun > -5.0 deg

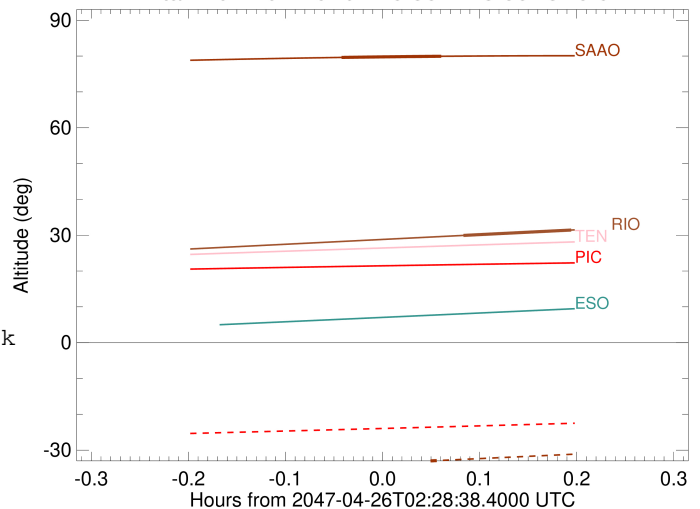
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2047-04-26T02:33:38.050	29.93	-79.86	2575.1	-36.69	-36.70
Titan	E	2047-04-26T02:40:19.943	31.44	-80.38	2575.2	-17.42	-17.42

```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-04-26T02:29:09.940
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     : 4090521561319423488
2Mass ID (if available) : 18163544-2218296
ICRS Star Coord at Epoch: 18h 16m 35.45913s -22:18:29.50961s
RUWE (>1.4 is poor) : 0.95
K magnitude         : 13.550
G magnitude         : 16.609
RP magnitude        : 15.614
BP magnitude        : 17.293
DUPflag            : 0
Distance (au)      : 9.479
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -10.83
Sun-Target sep (deg) : 121.31
Sun-Moon sep (deg)  : 131.57
B (ring opening deg) : 26.00
PA of pole (deg)    : 5.96
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.218
C/A sky separation (km) : 1498.1
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

```

Titan 2047-04-26T02:28:38 K13.55 G16.61



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	2047-04-26T02:26:03.339	79.61	-34.17	2575.1	-40.20	-40.22
Titan	E	2047-04-26T02:32:16.488	79.94	-32.86	2575.1	-22.56	-22.57