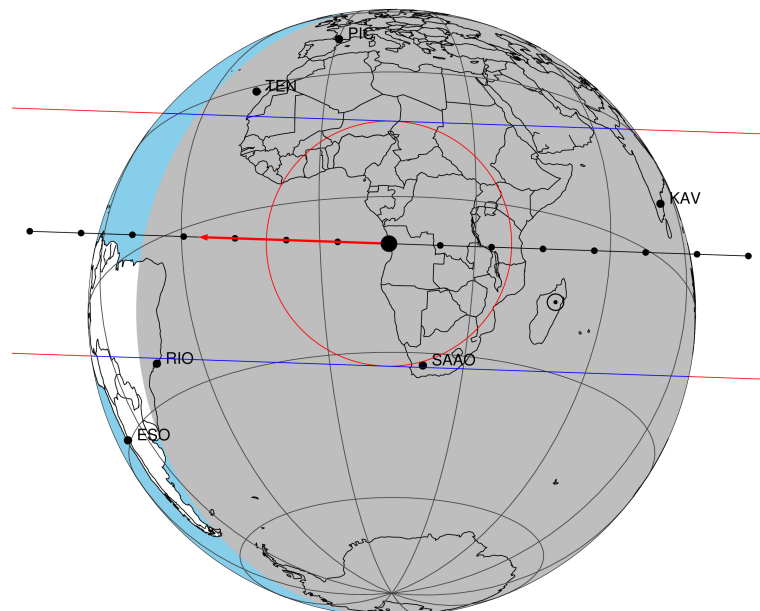


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2048-08-04T20:53:23.010
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4079276855923793280
 2Mass ID (if available) : 18422496-2235023

ICRS Star Coord at Epoch: 18h 42m 24.96554s -22:35:02.82796s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.361
 G magnitude : 17.805
 RP magnitude : 16.964
 BP magnitude : 18.480
 DUPflag : 0
 Distance (au) : 9.162
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -17.97
 Sun-Target sep (deg) : 147.31
 Sun-Moon sep (deg) : 158.34
 B (ring opening deg) : 25.63
 PA of pole (deg) : 6.38
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.220
 C/A sky separation (km) : 1462.1
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

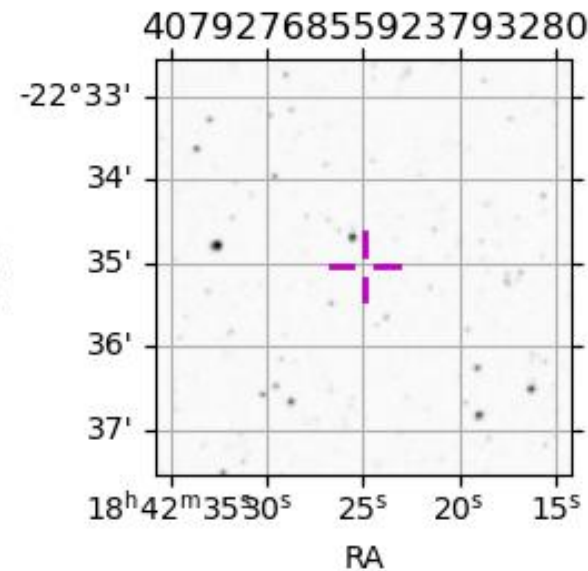
Titan 2048-08-04T20:53:23 K14.36 G17.80 dots 60.0 sec
 Pgt



2048-08-04T20:53:23.0100 α: 18 42 24.9655 δ: -22 35 02.828 C/A 0.218" PA 1.99 deg v_sky -17.97 km/s D 09.16 AU
 Credit: Styled after SORA/Lucky Star

URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp
 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	+ +	AUG 04 20:46 - AUG 04 20:50	Pie
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 04 20:52 - AUG 04 20:53	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



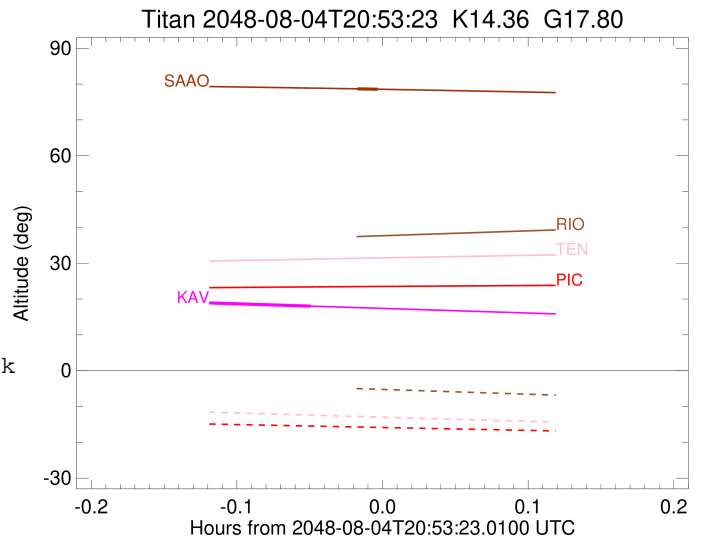
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2048-08-04T20:48:16.910
Event type           : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code        : KAV
Location             : Kavalur Observatory
Latitude (deg)       : 12.57556
E. Longitude (deg)  : 78.83167
Altitude (km)        : 0.722
Gaia source ID       : 4079276855923793280
2Mass ID (if available) : 18422496-2235023
ICRS Star Coord at Epoch: 18h 42m 24.96554s -22:35:02.82796s
RUWE (>1.4 is poor) : 1.02
K magnitude           : 14.361
G magnitude           : 17.805
RP magnitude          : 16.964
BP magnitude          : 18.480
DUPflag              : 0
Distance (au)        : 9.162
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.97
Sun-Target sep (deg) : 147.31
Sun-Moon sep (deg)   : 159.21
B (ring opening deg) : 25.63
PA of pole (deg)     : 6.38
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.155
C/A sky separation (km) : 1032.7
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	2048-08-04T20:46:07.216	18.93	-49.06	2575.1	17.69	17.70
Titan	E	2048-08-04T20:50:26.655	18.01	-48.31	2575.1	24.67	24.69

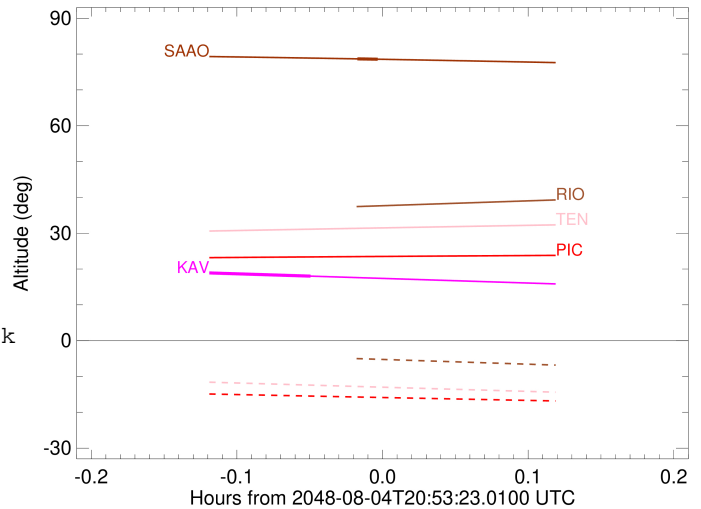


```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2048-08-04T20:52:45.730
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       : 4079276855923793280
2Mass ID (if available) : 18422496-2235023
ICRS Star Coord at Epoch: 18h 42m 24.96554s -22:35:02.82796s
RUWE (>1.4 is poor) : 1.02
K magnitude           : 14.361
G magnitude           : 17.805
RP magnitude          : 16.964
BP magnitude          : 18.480
DUPflag              : 0
Distance (au)        : 9.162
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.97
Sun-Target sep (deg) : 147.31
Sun-Moon sep (deg)   : 158.73
B (ring opening deg) : 25.63
PA of pole (deg)     : 6.38
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.381
C/A sky separation (km): 2528.5
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 2048-08-04T20:53:23 K14.36 G17.80



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	2048-08-04T20:52:19.194	78.66	-60.72	2575.0	-63.61	-63.62
Titan	E	2048-08-04T20:53:12.277	78.56	-60.89	2575.1	-60.42	-60.43