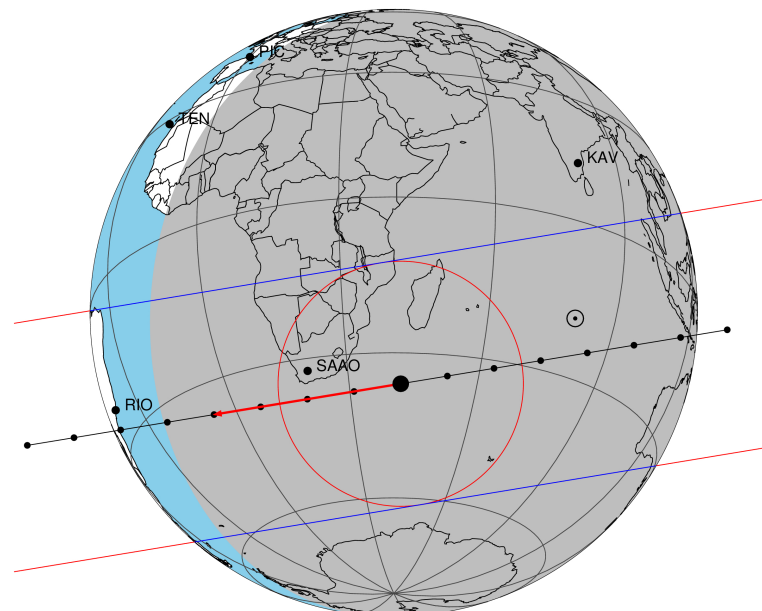


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-07-28T18:48:12.740
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4070232964782807552
 2Mass ID (if available) : 17524043-2225571

Titan 2047-07-28T18:48:12 K12.38 G17.42 dots 60.0 sec
 Pgt

ICRS Star Coord at Epoch: 17h 52m 40.43646s -22:25:57.77411s
 RUWE (>1.4 is poor) : 1.05
 K magnitude : 12.383
 G magnitude : 17.424
 RP magnitude : 15.828
 BP magnitude : 18.710
 DUPflag : 0
 Distance (au) : 9.212
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.55
 Sun-Target sep (deg) : 143.31
 Sun-Moon sep (deg) : 68.58
 B (ring opening deg) : 26.68
 PA of pole (deg) : 5.52
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.226
 C/A sky separation (km) : 1512.1
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

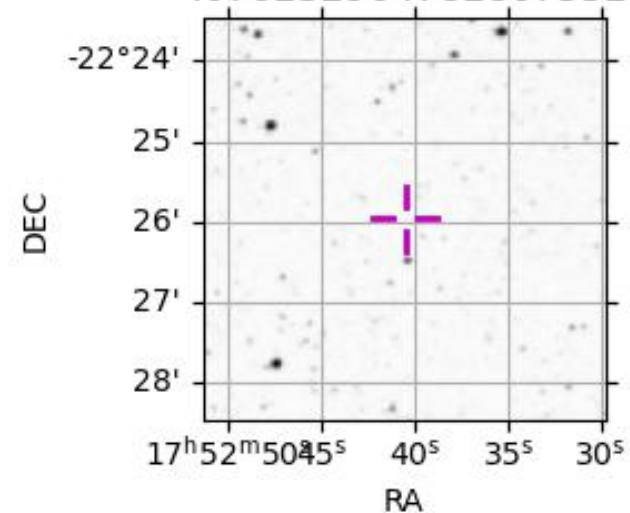


2047-07-28T18:48:12.7400 cc: 17 52 40.4365 s: -22 25 57.774 C/A 0.224" PA 170.61 deg v_sky -16.55 km/s D 09.21 AU
 Credit: Styled after SORA/Lucky Star

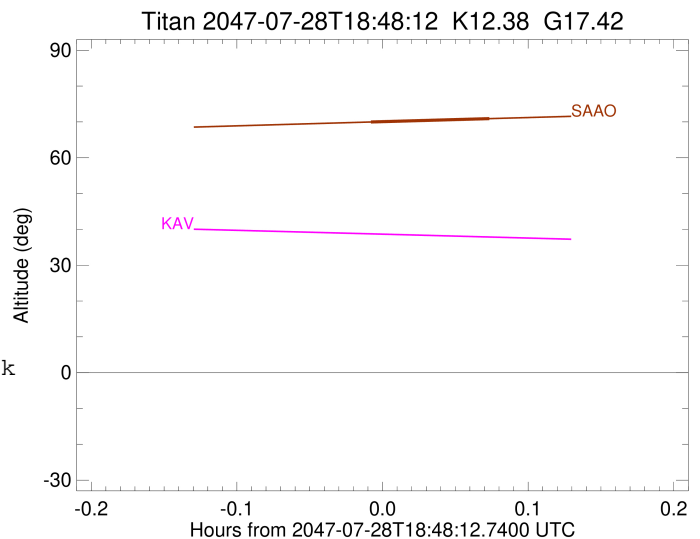
URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp
 Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	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	+ +	JUL 28 18:47 - JUL 28 18:52	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

4070232964782807552



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-07-28T18:50:10.230
 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 : 4070232964782807552
 2Mass ID (if available) : 17524043-2225571
 ICRS Star Coord at Epoch: 17h 52m 40.43646s -22:25:57.77411s
 RUWE (>1.4 is poor) : 1.05
 K magnitude : 12.383
 G magnitude : 17.424
 RP magnitude : 15.828
 BP magnitude : 18.710
 DUPflag : 0
 Distance (au) : 9.212
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.55
 Sun-Target sep (deg) : 143.31
 Sun-Moon sep (deg) : 69.34
 B (ring opening deg) : 26.68
 PA of pole (deg) : 5.52
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.095
 C/A sky separation (km) : 631.5
 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



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	2047-07-28T18:47:42.719	69.96	-35.88	2575.2	-0.60	-0.60
Titan	E	2047-07-28T18:52:37.710	70.91	-36.92	2575.1	25.71	25.72