

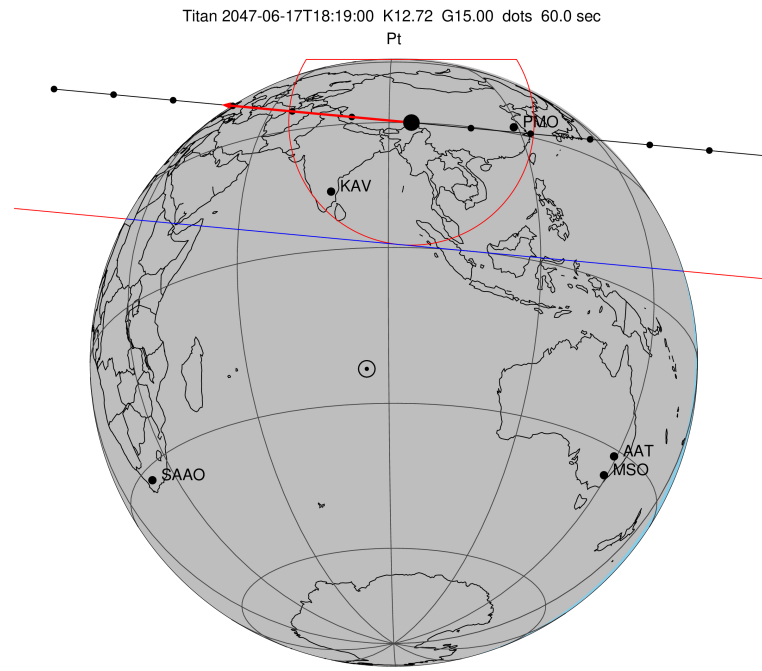
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-06-17T18:19:00.880
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4069858409245498112
 2Mass ID (if available) : 18040954-2221099

ICRS Star Coord at Epoch: 18h 04m 09.54966s -22:21:10.64625s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 12.716
 G magnitude : 14.999
 RP magnitude : 14.289
 BP magnitude : 15.557
 DUPflag : 0
 Distance (au) : 9.033
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -20.94
 Sun-Target sep (deg) : 174.77
 Sun-Moon sep (deg) : 111.57
 B (ring opening deg) : 26.34
 PA of pole (deg) : 5.74
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.774
 C/A sky separation (km) : 5070.5
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

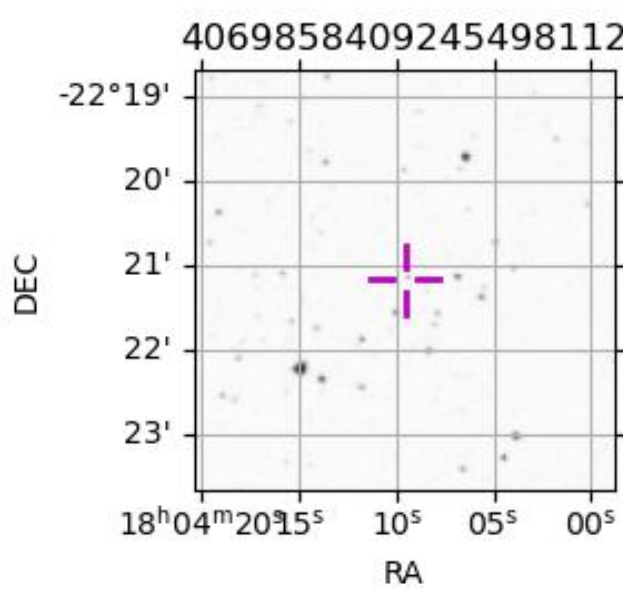
URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

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

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	+ +	JUN 17 18:15 - JUN 17 18:19	Pie
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	+ +	JUN 17 18:18 - JUN 17 18:21	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			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



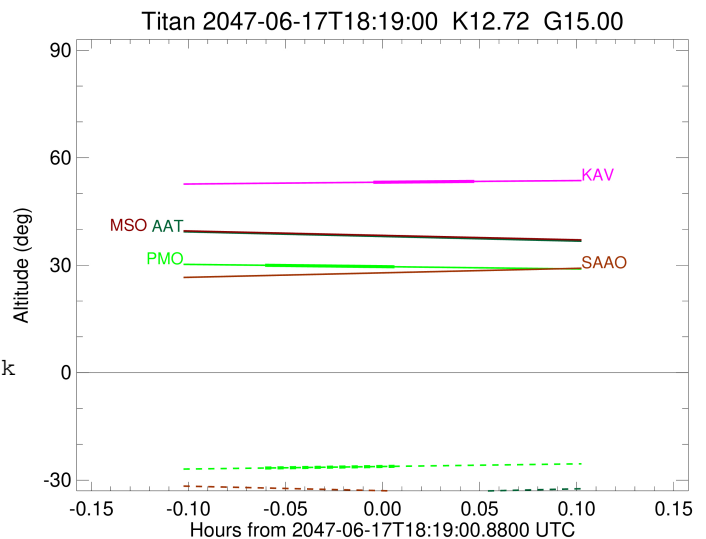
2047-06-17T18:19:00.8800 α: 18 04 09.5497 δ: -22 21 10.646 C/A 0.772" PA 5.37 deg v_sky -20.94 km/s D 09.03 AU
 Credit: Styled after SORA/Lucky Star



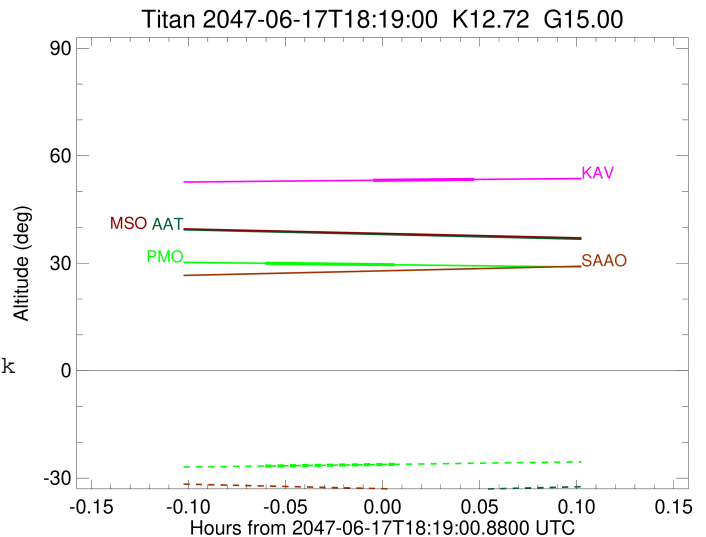
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-06-17T18:17:23.430
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Observer code : PMO
 Location : Purple Mtn Obs. Nanking
 Latitude (deg) : 32.06667
 E. Longitude (deg) : 118.82089
 Altitude (km) : 0.364
 Gaia source ID : 4069858409245498112
 2Mass ID (if available) : 18040954-2221099
 ICRS Star Coord at Epoch: 18h 04m 09.54966s -22:21:10.64625s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 12.716
 G magnitude : 14.999
 RP magnitude : 14.289
 BP magnitude : 15.557
 DUPflag : 0
 Distance (au) : 9.033
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -20.94
 Sun-Target sep (deg) : 174.77
 Sun-Moon sep (deg) : 112.14
 B (ring opening deg) : 26.34
 PA of pole (deg) : 5.74
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.011
 C/A sky separation (km) : 71.9
 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	2047-06-17T18:15:22.567	29.97	-26.62	2575.1	1.16	1.16
Titan	E	2047-06-17T18:19:24.312	29.55	-26.14	2575.1	1.66	1.66



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-06-17T18:20:17.360
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : 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 : 4069858409245498112
 2Mass ID (if available) : 18040954-2221099
 ICRS Star Coord at Epoch: 18h 04m 09.54966s -22:21:10.64625s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 12.716
 G magnitude : 14.999
 RP magnitude : 14.289
 BP magnitude : 15.557
 DUPflag : 0
 Distance (au) : 9.033
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -20.94
 Sun-Target sep (deg) : 174.77
 Sun-Moon sep (deg) : 112.19
 B (ring opening deg) : 26.34
 PA of pole (deg) : 5.74
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.245
 C/A sky separation (km) : 1605.2
 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	2047-06-17T18:18:43.172	53.14	-53.52	2575.1	-34.45	-34.47
Titan	E	2047-06-17T18:21:51.557	53.38	-53.65	2575.1	-33.47	-33.49