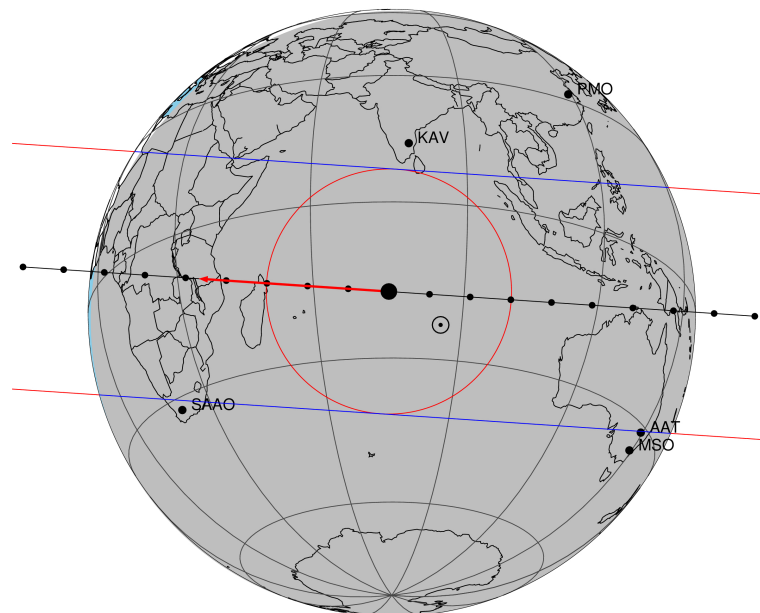


target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2046-06-19T18:18:54.340  
 Event type : Pgt  
 : Titan occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4115636060461219328  
 2Mass ID (if available) : 17110066-2123216

Titan 2046-06-19T18:18:54 K13.54 G15.91 dots 60.0 sec  
 Pgt

ICRS Star Coord at Epoch: 17h 11m 00.65087s -21:23:21.91104s  
 RUWE (>1.4 is poor) : 1.36  
 K magnitude : 13.538  
 G magnitude : 15.911  
 RP magnitude : 15.141  
 BP magnitude : 16.480  
 DUPflag : 0  
 Distance (au) : 9.038  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -14.26  
 Sun-Target sep (deg) : 170.47  
 Sun-Moon sep (deg) : 24.46  
 B (ring opening deg) : 26.49  
 PA of pole (deg) : 4.54  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.067  
 C/A sky separation (km) : 441.3  
 NAIF SPICE kernels : RAJobs\_U111+rgf16.spk

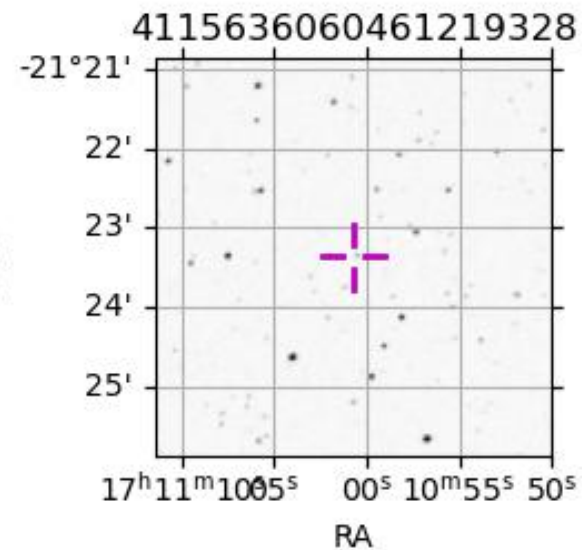


2046-06-19T18:18:54.3400 α: 17 11 00.6509 δ: -21 23 21.911 C/A 0.068" PA 3.85 deg v\_sky -14.26 km/s D 09.04 AU  
 Credit: Styled after SORA/Lucky Star

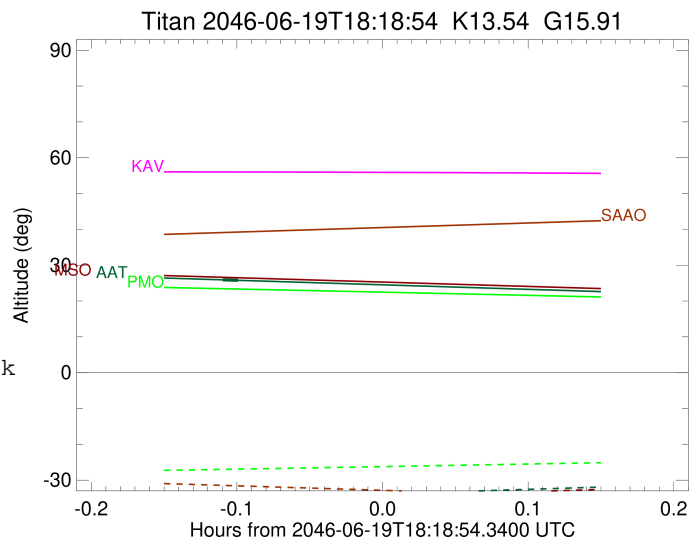
URKALLv1.spk  
 naif0012.tls  
 nep097.bsp  
 nep101.bsp  
 sat4401.bsp

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

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
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	+ +	JUN 19 18:12 - JUN 19 18:12	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2046-06-19T18:12:38.810  
 Event type : Pgt  
 : Titan occs: geocentric, topocentric  
 : Not a ringed target  
 Observer code : AAT  
 Location : Siding Spring (AAT)  
 Latitude (deg) : -31.27703  
 E. Longitude (deg) : 149.06608  
 Altitude (km) : 1.164  
 Gaia source ID : 4115636060461219328  
 2Mass ID (if available) : 17110066-2123216  
 ICRS Star Coord at Epoch: 17h 11m 00.65087s -21:23:21.91104s  
 RUWE (>1.4 is poor) : 1.36  
 K magnitude : 13.538  
 G magnitude : 15.911  
 RP magnitude : 15.141  
 BP magnitude : 16.480  
 DUPflag : 0  
 Distance (au) : 9.038  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -14.26  
 Sun-Target sep (deg) : 170.47  
 Sun-Moon sep (deg) : 23.86  
 B (ring opening deg) : 26.49  
 PA of pole (deg) : 4.54  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.390  
 C/A sky separation (km) : 2558.1  
 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



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	2046-06-19T18:12:18.319	25.91	-35.23	2575.1	-62.80	-62.81
Titan	E	2046-06-19T18:12:59.287	25.77	-35.09	2575.0	-62.73	-62.75