

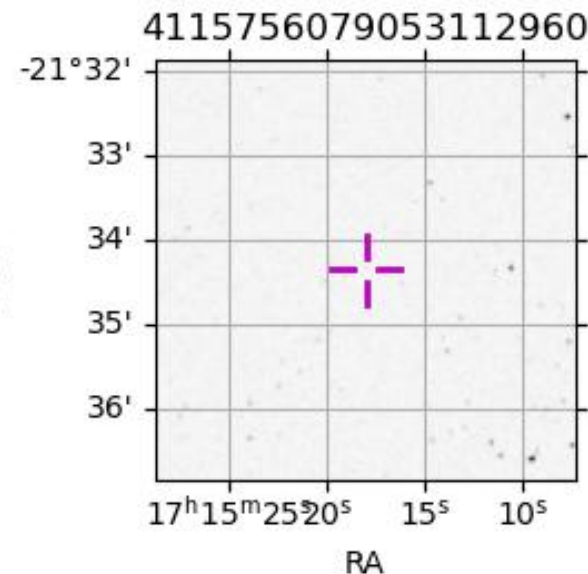
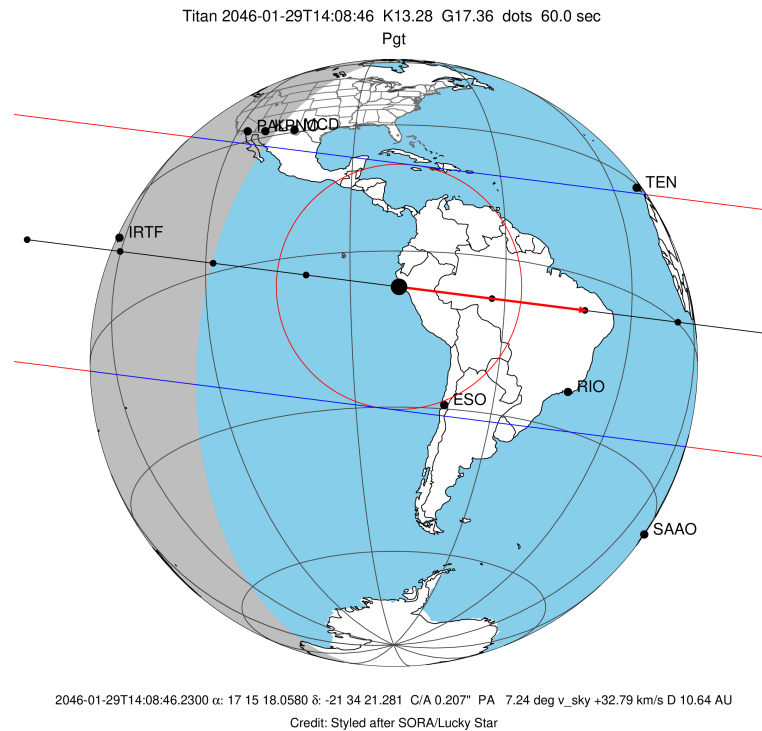
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2046-01-29T14:08:46.230
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4115756079053112960
 2Mass ID (if available) : 17151804-2134212

ICRS Star Coord at Epoch: 17h 15m 18.05803s -21:34:21.28056s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 13.279
 G magnitude : 17.355
 RP magnitude : 16.254
 BP magnitude : 18.590
 DUPflag : 0
 Distance (au) : 10.640
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 32.79
 Sun-Target sep (deg) : 49.58
 Sun-Moon sep (deg) : 35.84
 B (ring opening deg) : 26.59
 PA of pole (deg) : 4.65
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.208
 C/A sky separation (km) : 1602.4
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

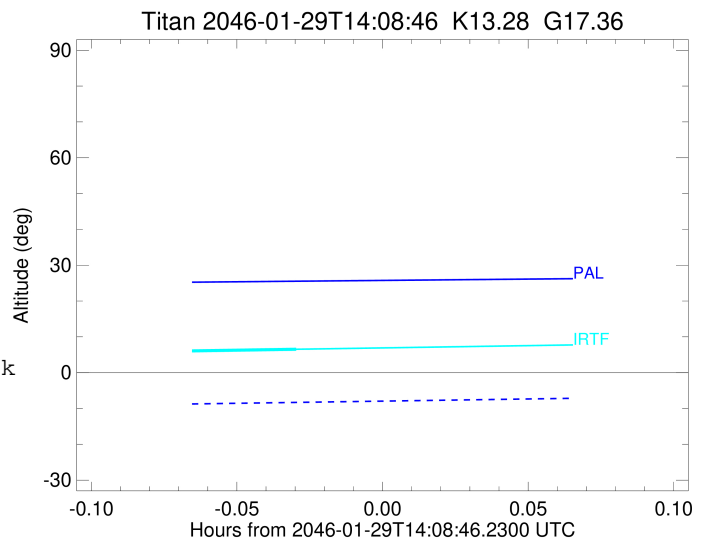
URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

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			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	+ +	JAN 29 14:04 - JAN 29 14:07	Pie
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			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2046-01-29T14:05:41.390
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Observer code : IRTF
 Location : Mauna Kea/IRTF
 Latitude (deg) : 19.82622
 E. Longitude (deg) : 204.52800
 Altitude (km) : 4.168
 Gaia source ID : 4115756079053112960
 2Mass ID (if available) : 17151804-2134212
 ICRS Star Coord at Epoch: 17h 15m 18.05803s -21:34:21.28056s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 13.279
 G magnitude : 17.355
 RP magnitude : 16.254
 BP magnitude : 18.590
 DUPflag : 0
 Distance (au) : 10.640
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 32.79
 Sun-Target sep (deg) : 49.58
 Sun-Moon sep (deg) : 35.25
 B (ring opening deg) : 26.59
 PA of pole (deg) : 4.65
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.035
 C/A sky separation (km) : 266.3
 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	2046-01-29T14:04:23.059	5.98	-40.56	2575.1	2.74	2.74
Titan	E	2046-01-29T14:06:59.722	6.53	-39.95	2575.1	7.87	7.88