

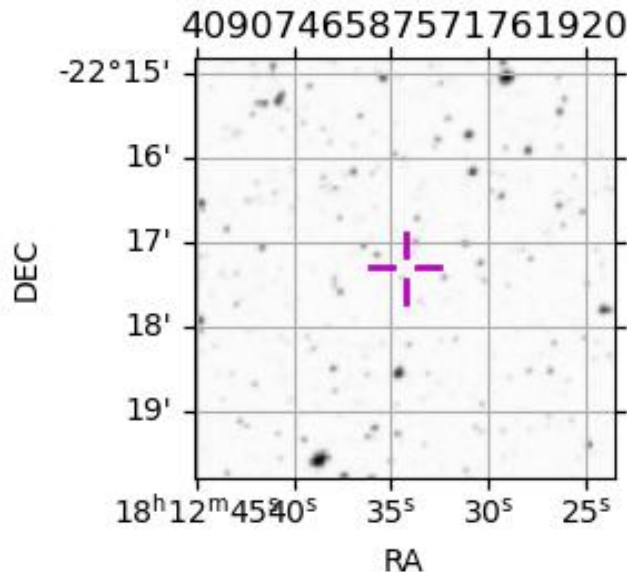
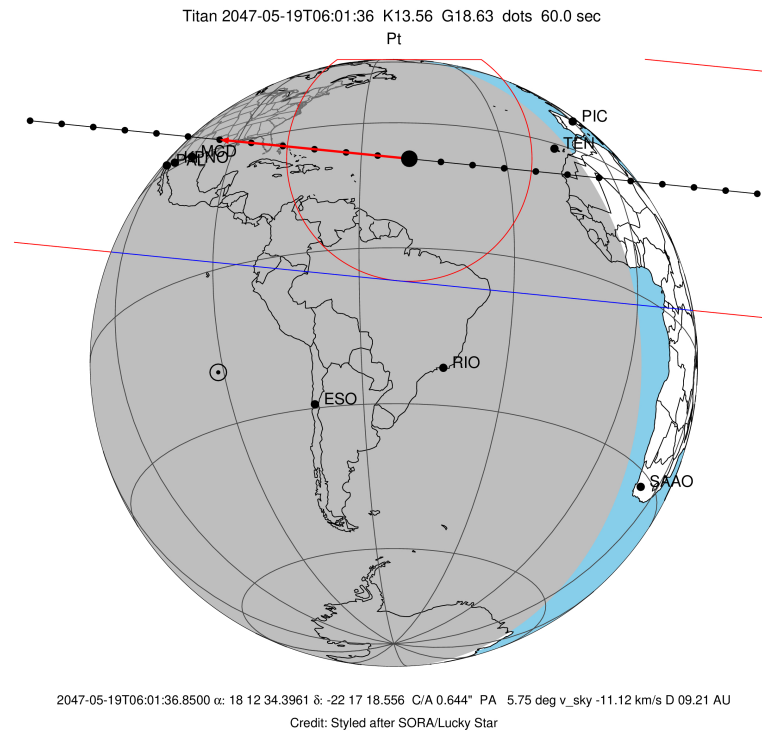
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-05-19T06:01:36.850
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4090746587571761920
 2Mass ID (if available) : 18123440-2217181

ICRS Star Coord at Epoch: 18h 12m 34.39607s -22:17:18.55612s
 RUWE (>1.4 is poor) : 1.06
 K magnitude : 13.564
 G magnitude : 18.631
 RP magnitude : 17.238
 BP magnitude : 20.534
 DUPflag : 0
 Distance (au) : 9.209
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -11.12
 Sun-Target sep (deg) : 144.64
 Sun-Moon sep (deg) : 83.28
 B (ring opening deg) : 26.07
 PA of pole (deg) : 5.89
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.646
 C/A sky separation (km) : 4311.5
 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

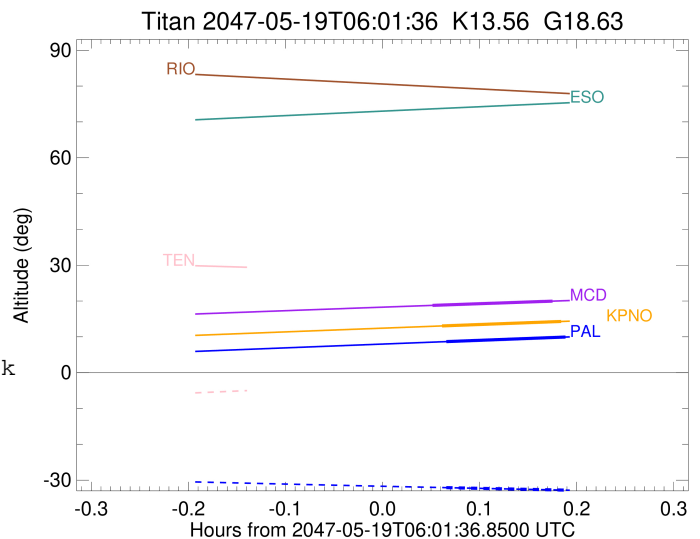
Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	MAY 19 06:05 - MAY 19 06:12	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	MAY 19 06:05 - MAY 19 06:12	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	MAY 19 06:04 - MAY 19 06:12	Pie
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			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-05-19T06:09:13.350
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Observer code : PAL
 Location : Palomar Mt (200")
 Latitude (deg) : 33.35622
 E. Longitude (deg) : 243.13601
 Altitude (km) : 1.706
 Gaia source ID : 4090746587571761920
 2Mass ID (if available) : 18123440-2217181
 ICRS Star Coord at Epoch: 18h 12m 34.39607s -22:17:18.55612s
 RUWE (>1.4 is poor) : 1.06
 K magnitude : 13.564
 G magnitude : 18.631
 RP magnitude : 17.238
 BP magnitude : 20.534
 DUPflag : 0
 Distance (au) : 9.209
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -11.12
 Sun-Target sep (deg) : 144.64
 Sun-Moon sep (deg) : 83.47
 B (ring opening deg) : 26.07
 PA of pole (deg) : 5.89
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.088
 C/A sky separation (km) : 584.5
 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

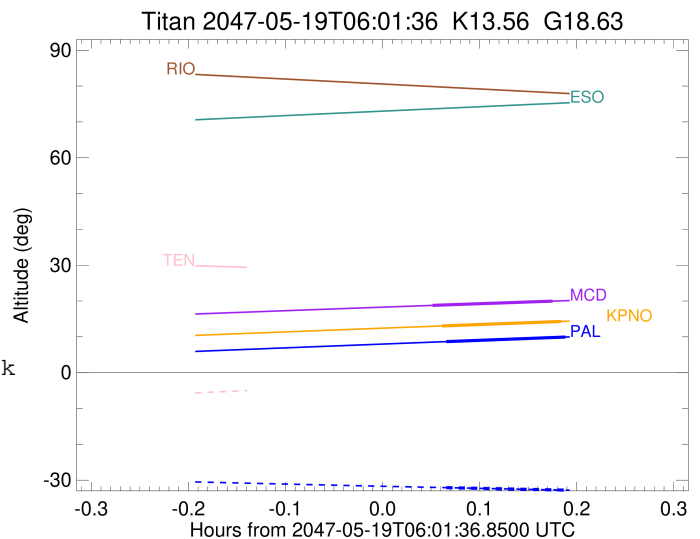
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2047-05-19T06:05:31.107	8.66	-32.09	2575.1	-12.57	-12.58
Titan	E	2047-05-19T06:12:55.547	9.94	-32.78	2575.1	-10.95	-10.95



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-05-19T06:08:57.600
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Observer code : KPNO
 Location : Kitt Peak Natl Obs
 Latitude (deg) : 31.96333
 E. Longitude (deg) : 248.40000
 Altitude (km) : 2.120
 Gaia source ID : 4090746587571761920
 2Mass ID (if available) : 18123440-2217181
 ICRS Star Coord at Epoch: 18h 12m 34.39607s -22:17:18.55612s
 RUWE (>1.4 is poor) : 1.06
 K magnitude : 13.564
 G magnitude : 18.631
 RP magnitude : 17.238
 BP magnitude : 20.534
 DUPflag : 0
 Distance (au) : 9.209
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -11.12
 Sun-Target sep (deg) : 144.64
 Sun-Moon sep (deg) : 83.54
 B (ring opening deg) : 26.07
 PA of pole (deg) : 5.89
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.077
 C/A sky separation (km) : 513.2
 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	2047-05-19T06:05:14.662	13.04	-35.20	2575.1	-11.11	-11.12
Titan	E	2047-05-19T06:12:40.509	14.29	-35.78	2575.1	-9.50	-9.51



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-05-19T06:08:25.190
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Observer code : MCD
 Location : McDonald Obs. 2.7m
 Latitude (deg) : 30.67158
 E. Longitude (deg) : 255.97844
 Altitude (km) : 2.075
 Gaia source ID : 4090746587571761920
 2Mass ID (if available) : 18123440-2217181
 ICRS Star Coord at Epoch: 18h 12m 34.39607s -22:17:18.55612s
 RUWE (>1.4 is poor) : 1.06
 K magnitude : 13.564
 G magnitude : 18.631
 RP magnitude : 17.238
 BP magnitude : 20.534
 DUPflag : 0
 Distance (au) : 9.209
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -11.12
 Sun-Target sep (deg) : 144.64
 Sun-Moon sep (deg) : 83.62
 B (ring opening deg) : 26.07
 PA of pole (deg) : 5.89
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.054
 C/A sky separation (km) : 361.7
 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	2047-05-19T06:04:40.840	18.78	-38.44	2575.1	-8.01	-8.02
Titan	E	2047-05-19T06:12:09.502	19.97	-38.81	2575.1	-6.47	-6.47

