

target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-07-21T20:28:30.980
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4070253816806011136
 2Mass ID (if available) : 17535773-2223281

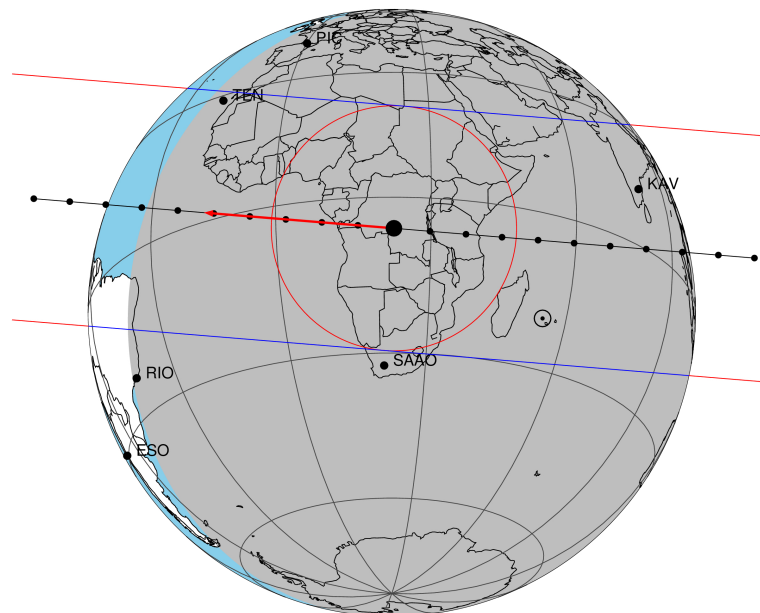
ICRS Star Coord at Epoch: 17h 53m 57.72759s -22:23:28.47439s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 12.054
 G magnitude : 17.279
 RP magnitude : 16.001
 BP magnitude : 19.319
 DUPflag : 0
 Distance (au) : 9.156
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -12.66
 Sun-Target sep (deg) : 150.22
 Sun-Moon sep (deg) : 163.44
 B (ring opening deg) : 26.61
 PA of pole (deg) : 5.54
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.268
 C/A sky separation (km) : 1780.8
 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

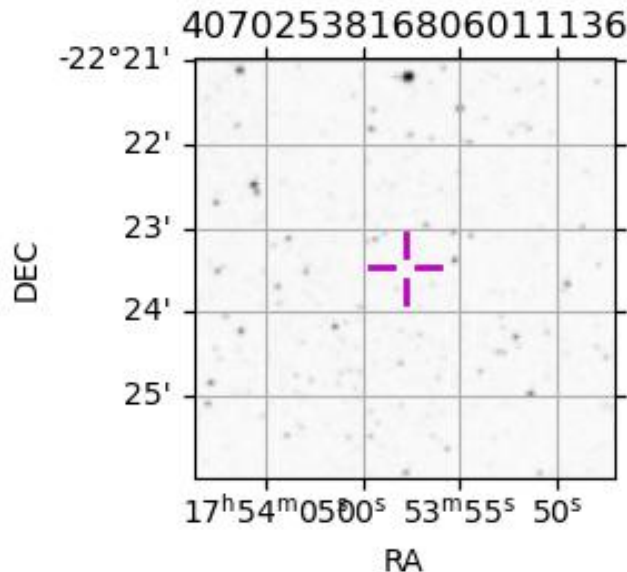
Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5	+ +	JUL 21 20:32 - JUL 21 20:34	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	JUL 21 20:19 - JUL 21 20:25	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

Titan 2047-07-21T20:28:30 K12.05 G17.28 dots 60.0 sec
 Pgt



2047-07-21T20:28:30.9800 α: 17 53 57.7276 δ: -22 23 28.474 C/A 0.267" PA 4.71 deg v_sky -12.65 km/s D 09.16 AU

Credit: Styled after SORA/Lucky Star



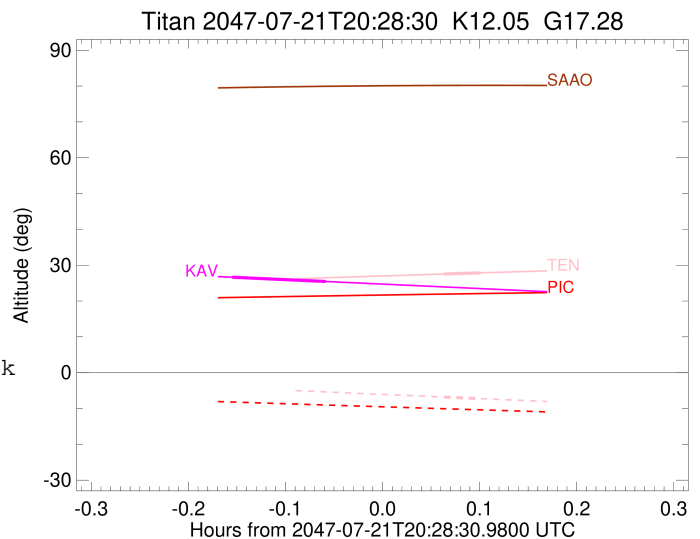
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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-07-21T20:33:27.950
Event type           : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code        : TEN
Location             : Teide Obs./Tenerife
Latitude (deg)       : 28.30050
E. Longitude (deg)   : 343.48909
Altitude (km)        : 2.395
Gaia source ID       : 4070253816806011136
2Mass ID (if available) : 17535773-2223281
ICRS Star Coord at Epoch: 17h 53m 57.72759s -22:23:28.47439s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 12.054
G magnitude          : 17.279
RP magnitude         : 16.001
BP magnitude         : 19.319
DUPflag             : 0
Distance (au)        : 9.156
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -12.66
Sun-Target sep (deg) : 150.22
Sun-Moon sep (deg)   : 164.09
B (ring opening deg) : 26.61
PA of pole (deg)     : 5.54
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.363
C/A sky separation (km): 2413.2
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

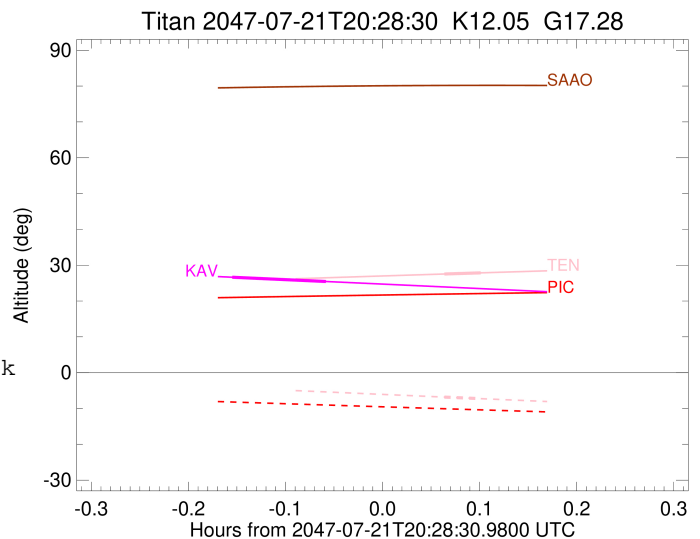
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x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2047-07-21T20:32:18.634	27.54	-6.81	2575.1	56.12	56.14
Titan	E	2047-07-21T20:34:37.262	27.86	-7.26	2575.1	57.69	57.70



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-07-21T20:22:07.670
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : 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 : 4070253816806011136
 2Mass ID (if available) : 17535773-2223281
 ICRS Star Coord at Epoch: 17h 53m 57.72759s -22:23:28.47439s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 12.054
 G magnitude : 17.279
 RP magnitude : 16.001
 BP magnitude : 19.319
 DUPflag : 0
 Distance (au) : 9.156
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -12.66
 Sun-Target sep (deg) : 150.22
 Sun-Moon sep (deg) : 162.85
 B (ring opening deg) : 26.61
 PA of pole (deg) : 5.54
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.188
 C/A sky separation (km) : 1250.4
 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	2047-07-21T20:19:13.667	26.64	-50.65	2575.1	25.48	25.50
Titan	E	2047-07-21T20:25:01.786	25.44	-49.85	2575.1	25.98	25.99