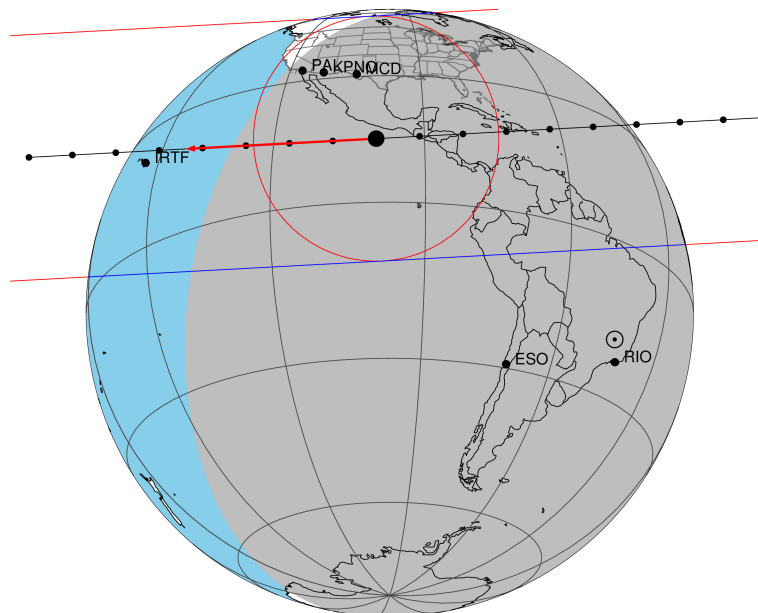


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2046-07-28T03:07:26.660
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4127644101844166912
 2Mass ID (if available) : 17013541-2119174

ICRS Star Coord at Epoch: 17h 01m 35.41692s -21:19:17.78706s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.601
 G magnitude : 16.812
 RP magnitude : 16.138
 BP magnitude : 17.312
 DUPflag : 0
 Distance (au) : 9.325
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -15.20
 Sun-Target sep (deg) : 131.79
 Sun-Moon sep (deg) : 159.90
 B (ring opening deg) : 26.59
 PA of pole (deg) : 4.31
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.541
 C/A sky separation (km) : 3656.6
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

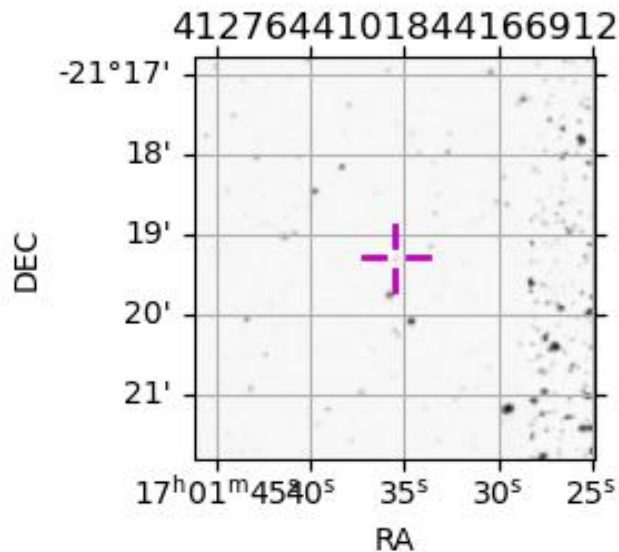
Titan 2046-07-28T03:07:26 K14.60 G16.81 dots 60.0 sec
Pt



2046-07-28T03:07:26.6600 cc: 17 01 35.4169 s: -21 19 17.787 C/A 0.543" PA 356.90 deg v_sky -15.21 km/s D 09.33 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	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	+ +	JUL 28 03:06 - JUL 28 03:10	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	JUL 28 03:05 - JUL 28 03:10	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



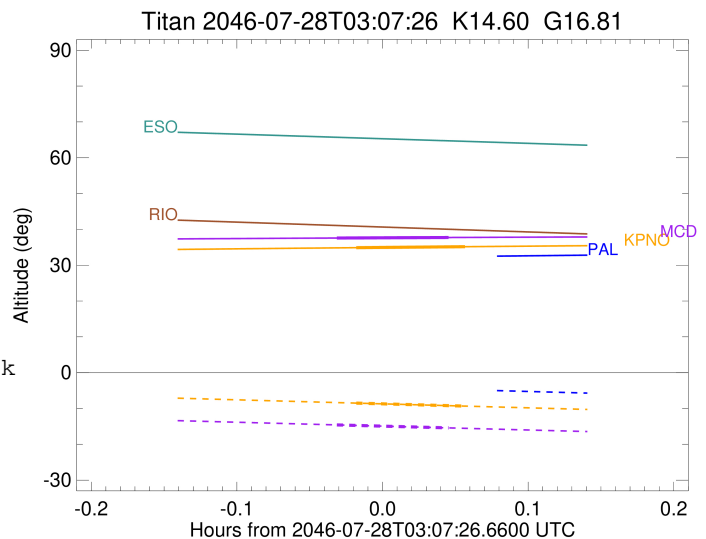
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2046-07-28T03:08:36.450
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     : 4127644101844166912
2Mass ID (if available) : 17013541-2119174
ICRS Star Coord at Epoch: 17h 01m 35.41692s -21:19:17.78706s
RUWE (>1.4 is poor) : 1.00
K magnitude         : 14.601
G magnitude         : 16.812
RP magnitude        : 16.138
BP magnitude        : 17.312
DUPflag            : 0
Distance (au)      : 9.325
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -15.20
Sun-Target sep (deg) : 131.79
Sun-Moon sep (deg)  : 160.04
B (ring opening deg) : 26.59
PA of pole (deg)    : 4.31
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.215
C/A sky separation (km) : 1454.0
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	2046-07-28T03:06:20.129	34.88	-8.49	2575.1	23.88	23.89
Titan	E	2046-07-28T03:10:52.757	35.16	-9.34	2575.1	36.61	36.62



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2046-07-28T03:07:52.280
 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 : 4127644101844166912
 2Mass ID (if available) : 17013541-2119174
 ICRS Star Coord at Epoch: 17h 01m 35.41692s -21:19:17.78706s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.601
 G magnitude : 16.812
 RP magnitude : 16.138
 BP magnitude : 17.312
 DUPflag : 0
 Distance (au) : 9.325
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -15.20
 Sun-Target sep (deg) : 131.79
 Sun-Moon sep (deg) : 160.14
 B (ring opening deg) : 26.59
 PA of pole (deg) : 4.31
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.203
 C/A sky separation (km) : 1375.2
 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	2046-07-28T03:05:32.760	37.58	-14.58	2575.1	22.11	22.12
Titan	E	2046-07-28T03:10:11.791	37.73	-15.42	2575.1	34.80	34.82

