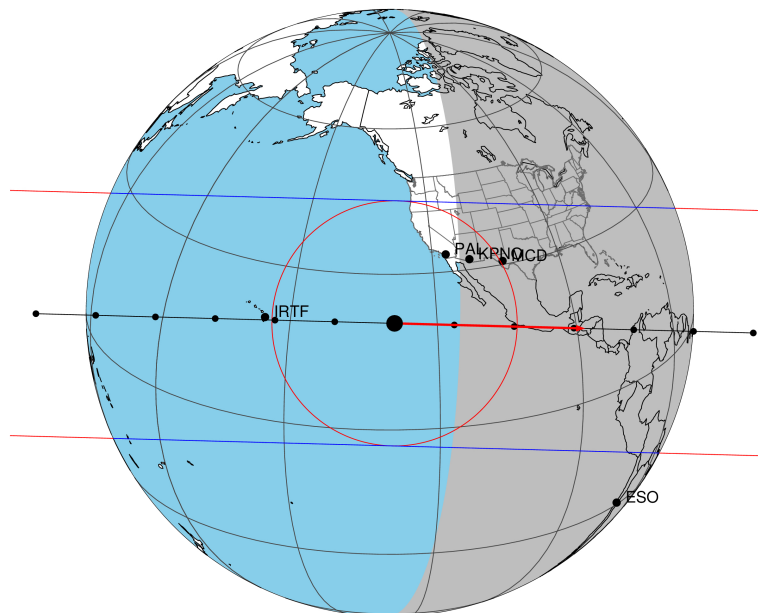


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2033-04-04T01:52:40.920
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3423815299781257088
 2Mass ID (if available) : 06031203+2243076

ICRS Star Coord at Epoch: 06h 03m 12.01668s +22:43:07.12120s
 RUWE (>1.4 is poor) : 1.14
 K magnitude : 14.827
 G magnitude : 18.336
 RP magnitude : 17.274
 BP magnitude : 19.225
 DUPflag : 0
 Distance (au) : 9.201
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 20.92
 Sun-Target sep (deg) : 76.58
 Sun-Moon sep (deg) : 18.03
 B (ring opening deg) : -26.72
 PA of pole (deg) : -5.74
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.034
 C/A sky separation (km) : 227.7
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

Titan 2033-04-04T01:52:40 K14.83 G18.34 dots 60.0 sec
 Pgt

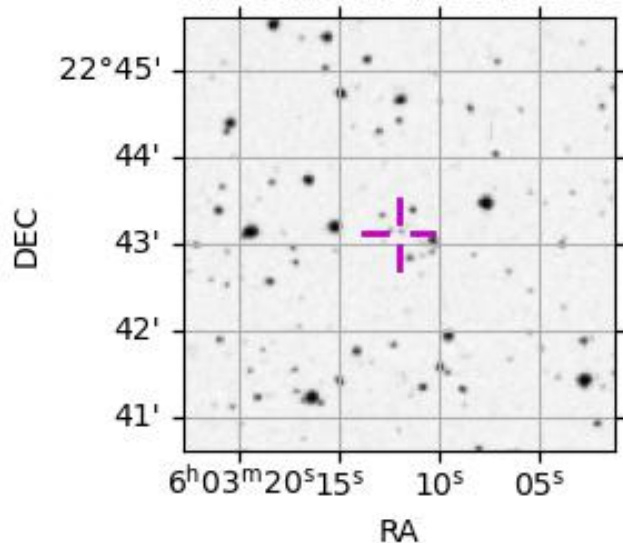


2033-04-04T01:52:40.9200 α: 06 03 12.0167 δ: +22 43 07.121 C/A 0.033" PA 181.57 deg v_sky +20.93 km/s D 09.20 AU
 Credit: Styled after SORA/Lucky Star

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			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	APR 04 01:52 - APR 04 01:56	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

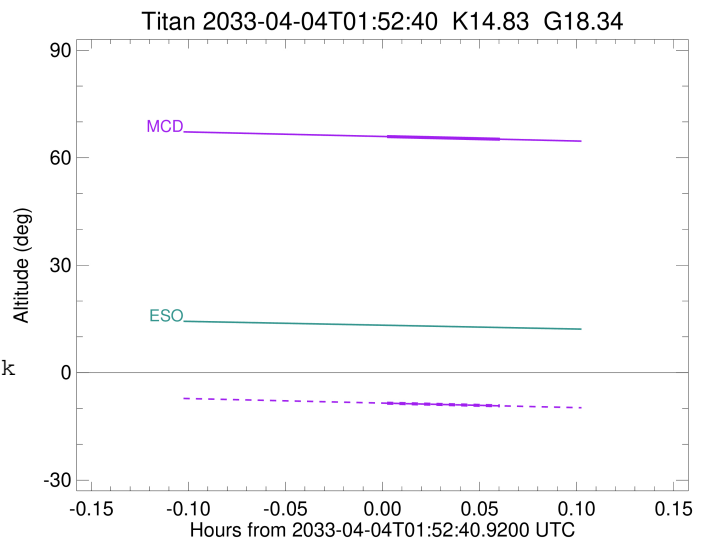
3423815299781257088



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2033-04-04T01:54:34.210
Event type           : Pgt
: Titan occs: geocentric, topocentric
: 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       : 3423815299781257088
2Mass ID (if available) : 06031203+2243076
ICRS Star Coord at Epoch: 06h 03m 12.01668s +22:43:07.12120s
RUWE (>1.4 is poor) : 1.14
K magnitude          : 14.827
G magnitude          : 18.336
RP magnitude         : 17.274
BP magnitude         : 19.225
DUPflag             : 0
Distance (au)        : 9.201
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 20.92
Sun-Target sep (deg) : 76.58
Sun-Moon sep (deg)   : 18.68
B (ring opening deg) : -26.72
PA of pole (deg)     : -5.74
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.207
C/A sky separation (km) : 1379.6
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	2033-04-04T01:52:48.502	65.90	-8.52	2575.1	22.09	22.10
Titan	E	2033-04-04T01:56:19.896	65.15	-9.26	2575.1	34.95	34.96