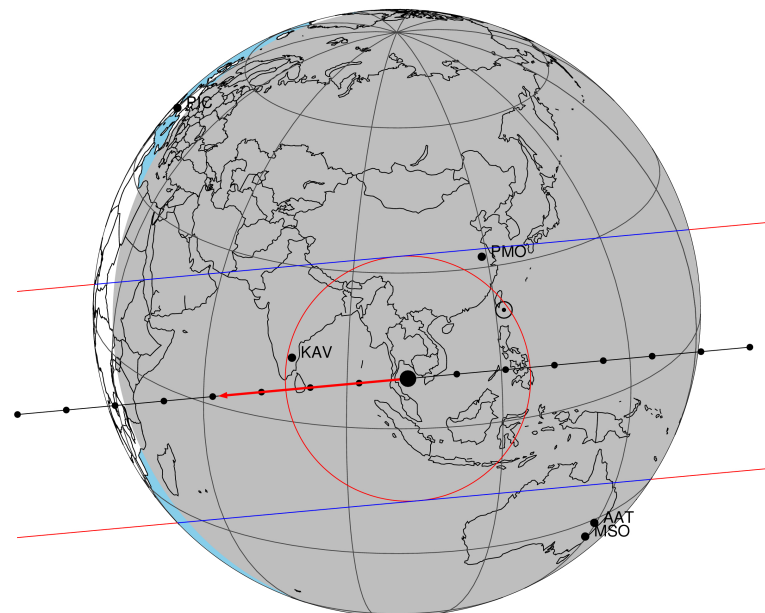


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2033-01-12T16:01:09.080
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3423759400784715648
 2Mass ID (if available) : 06071376+2229078

Titan 2033-01-12T16:01:09 K13.70 G16.08 dots 60.0 sec
 Pgt

ICRS Star Coord at Epoch: 06h 07m 13.76538s +22:29:07.92272s
 RUWE (>1.4 is poor) : 1.06
 K magnitude : 13.698
 G magnitude : 16.079
 RP magnitude : 15.301
 BP magnitude : 16.709
 DUPflag : 0
 Distance (au) : 8.089
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -17.16
 Sun-Target sep (deg) : 159.34
 Sun-Moon sep (deg) : 13.53
 B (ring opening deg) : -26.40
 PA of pole (deg) : -5.80
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.238
 C/A sky separation (km) : 1393.9
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

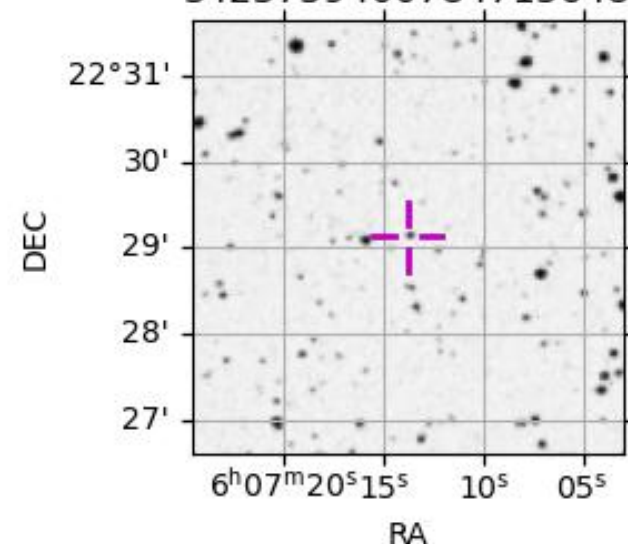


2033-01-12T16:01:09.0800 α: 06 07 13.7654 δ: +22 29 07.923 C/A 0.238" PA 174.73 deg v_sky -17.16 km/s D 08.09 AU
 Credit: Styled after SORA/Lucky Star

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	+ +	JAN 12 15:58 - JAN 12 16:00	Pie
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			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	JAN 12 16:00 - JAN 12 16:05	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

3423759400784715648



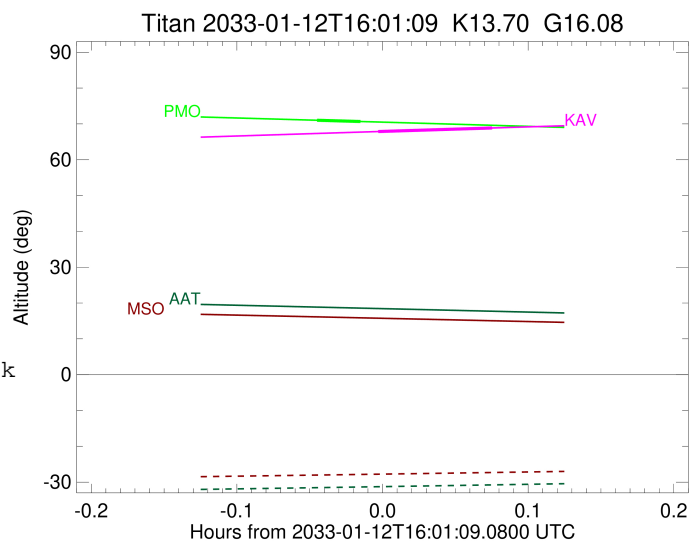
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2033-01-12T15:59:21.720
Event type          : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code       : PMO
Location            : Purple Mtn Obs. Nanking
Latitude (deg)      : 32.06667
E. Longitude (deg)  : 118.82089
Altitude (km)       : 0.364
Gaia source ID      : 3423759400784715648
2Mass ID (if available) : 06071376+2229078
ICRS Star Coord at Epoch: 06h 07m 13.76538s +22:29:07.92272s
RUWE (>1.4 is poor) : 1.06
K magnitude          : 13.698
G magnitude          : 16.079
RP magnitude         : 15.301
BP magnitude         : 16.709
DUPflag             : 0
Distance (au)       : 8.089
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -17.16
Sun-Target sep (deg) : 159.34
Sun-Moon sep (deg)  : 14.03
B (ring opening deg) : -26.40
PA of pole (deg)    : -5.80
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.407
C/A sky separation (km) : 2388.8
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	2033-01-12T15:58:26.907	71.01	-79.11	2575.1	56.49	56.51
Titan	E	2033-01-12T16:00:16.542	70.66	-79.23	2575.0	55.90	55.91



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2033-01-12T16:03:18.920
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     : 3423759400784715648
2Mass ID (if available) : 06071376+2229078
ICRS Star Coord at Epoch: 06h 07m 13.76538s +22:29:07.92272s
RUWE (>1.4 is poor) : 1.06
K magnitude         : 13.698
G magnitude         : 16.079
RP magnitude        : 15.301
BP magnitude        : 16.709
DUPflag            : 0
Distance (au)      : 8.089
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -17.16
Sun-Target sep (deg) : 159.34
Sun-Moon sep (deg)  : 13.39
B (ring opening deg) : -26.40
PA of pole (deg)   : -5.80
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.107
C/A sky separation (km) : 627.5
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	2033-01-12T16:00:56.822	67.85	-48.00	2575.1	13.38	13.39
Titan	E	2033-01-12T16:05:41.043	68.86	-49.10	2575.1	11.84	11.85

