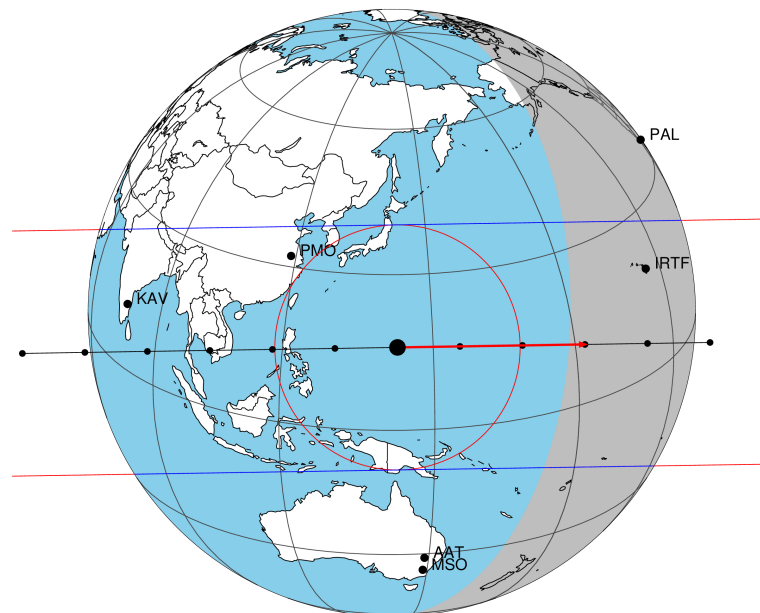


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2033-04-29T06:16:21.570
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3425048921766933632
 2Mass ID (if available) : 06115291+2247575

ICRS Star Coord at Epoch: 06h 11m 52.91394s +22:47:57.53864s
 RUWE (>1.4 is poor) : 0.94
 K magnitude : 12.198
 G magnitude : 15.609
 RP magnitude : 14.637
 BP magnitude : 16.570
 DUPflag : 0
 Distance (au) : 9.566
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 21.88
 Sun-Target sep (deg) : 53.94
 Sun-Moon sep (deg) : 51.93
 B (ring opening deg) : -26.60
 PA of pole (deg) : -5.90
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.105
 C/A sky separation (km) : 731.7
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

Titan 2033-04-29T06:16:21 K12.20 G15.61 dots 60.0 sec
 Pgt

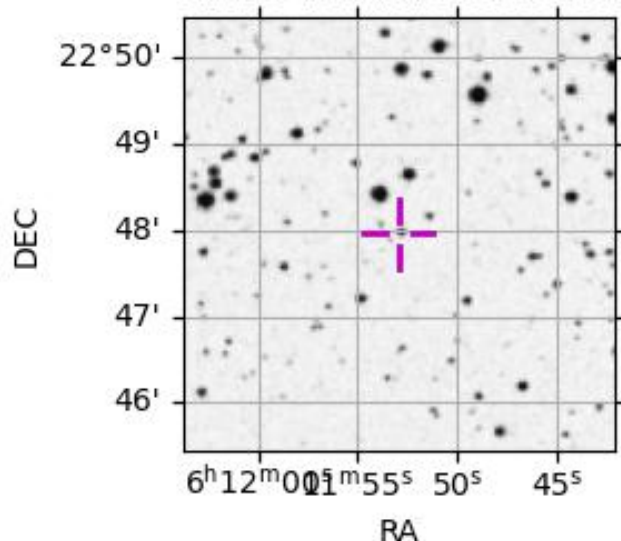


2033-04-29T06:16:21.5700 α: 06 11 52.9139 δ: +22 47 57.539 C/A 0.105" PA 179.11 deg v_sky +21.88 km/s D 09.57 AU
 Credit: Styled after SORA/Lucky Star

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			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+	APR 29 06:18 - APR 29 06:22	Pie
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

3425048921766933632



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2033-04-29T06:20:27.690
Event type           : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code        : IRTF
Location             : Mauna Kea/IRTF
Latitude (deg)       : 19.82622
E. Longitude (deg)   : 204.52800
Altitude (km)        : 4.168
Gaia source ID       : 3425048921766933632
2Mass ID (if available) : 06115291+2247575
ICRS Star Coord at Epoch: 06h 11m 52.91394s +22:47:57.53864s
RUWE (>1.4 is poor) : 0.94
K magnitude          : 12.198
G magnitude          : 15.609
RP magnitude         : 14.637
BP magnitude         : 16.570
DUPflag             : 0
Distance (au)        : 9.566
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 21.88
Sun-Target sep (deg) : 53.94
Sun-Moon sep (deg)   : 52.86
B (ring opening deg) : -26.60
PA of pole (deg)     : -5.90
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.233
C/A sky separation (km) : 1617.7
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	2033-04-29T06:18:55.285	31.35	-21.69	2575.1	29.59	29.61
Titan	E	2033-04-29T06:22:00.083	30.65	-22.35	2575.1	38.66	38.67

