

target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2048-08-05T05:40:37.920
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4079276958972707328
 2Mass ID (if available) : 18421893-2234592

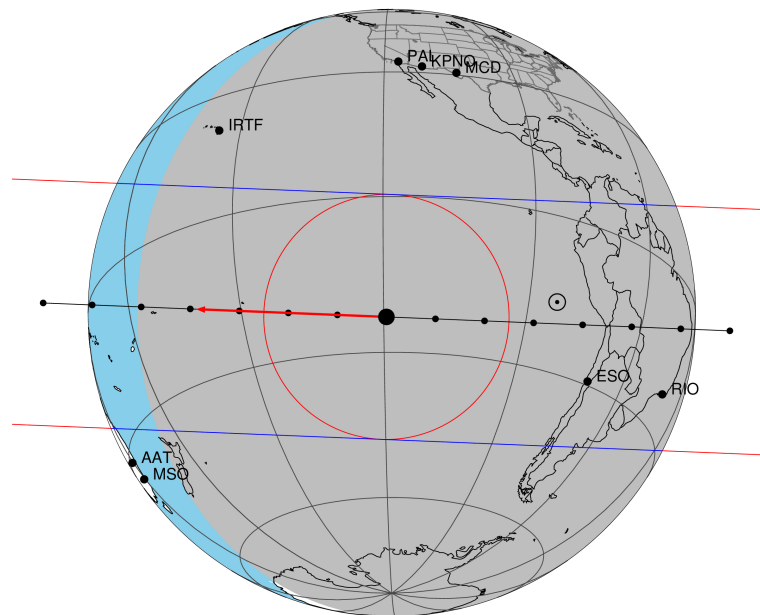
ICRS Star Coord at Epoch: 18h 42m 18.92906s -22:34:59.44758s
 RUWE (>1.4 is poor) : 0.94
 K magnitude : 12.850
 G magnitude : 15.770
 RP magnitude : 14.880
 BP magnitude : 16.563
 DUPflag : 0
 Distance (au) : 9.166
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -17.18
 Sun-Target sep (deg) : 146.94
 Sun-Moon sep (deg) : 162.70
 B (ring opening deg) : 25.63
 PA of pole (deg) : 6.38
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.012
 C/A sky separation (km) : 78.1
 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			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	+ +	AUG 05 05:33 - AUG 05 05:37	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	AUG 05 05:34 - AUG 05 05:38	Pie
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

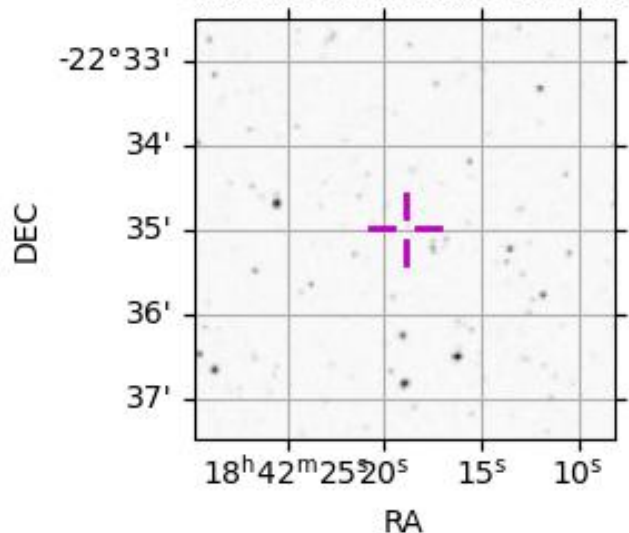
Titan 2048-08-05T05:40:37 K12.85 G15.77 dots 60.0 sec
 Pgt



2048-08-05T05:40:37.9200 cc: 18 42 18.9291 d: -22 34 59.448 C/A 0.014" PA 182.57 deg v_sky -17.18 km/s D 09.17 AU

Credit: Styled after SORA/Lucky Star

4079276958972707328



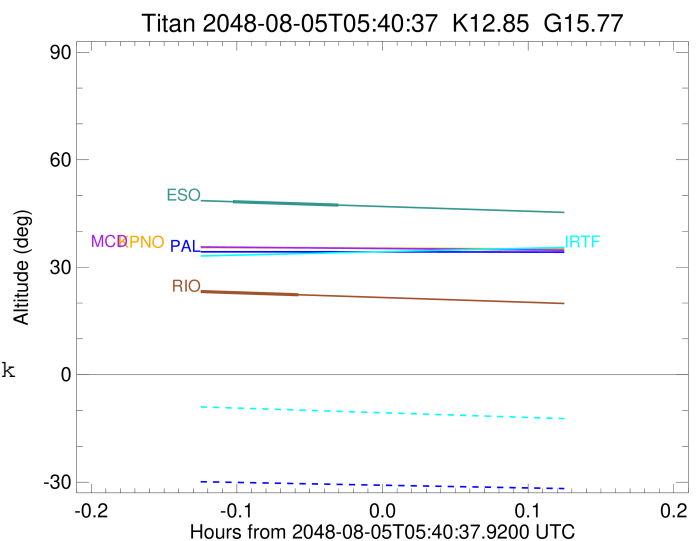
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2048-08-05T05:35:05.600
Event type           : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code        : RIO
Location             : Rio de Janeiro
Latitude (deg)       : -22.89506
E. Longitude (deg)   : 316.77708
Altitude (km)        : 0.033
Gaia source ID       : 4079276958972707328
2Mass ID (if available) : 18421893-2234592
ICRS Star Coord at Epoch: 18h 42m 18.92906s -22:34:59.44758s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 12.850
G magnitude           : 15.770
RP magnitude          : 14.880
BP magnitude          : 16.563
DUPflag              : 0
Distance (au)         : 9.166
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.18
Sun-Target sep (deg) : 146.94
Sun-Moon sep (deg)   : 163.52
B (ring opening deg) : 25.63
PA of pole (deg)     : 6.38
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.206
C/A sky separation (km): 1367.0
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

```

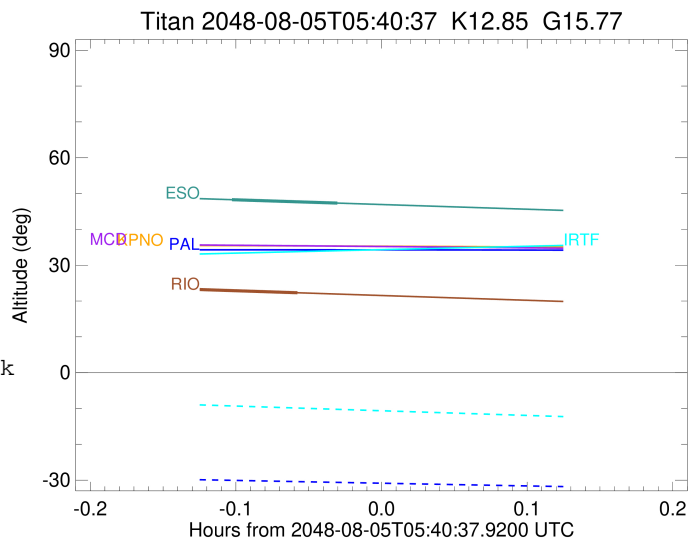
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2048-08-05T05:32:59.576	23.23	-53.33	2575.1	-31.67	-31.68
Titan	E	2048-08-05T05:37:11.677	22.30	-52.36	2575.1	-25.49	-25.50



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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2048-08-05T05:36:39.170
Event type          : Pgt
                    : Titan occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : ESO
Location            : European Southern Obs. (3.6m)
Latitude (deg)      : -29.26097
E. Longitude (deg)  : 289.26831
Altitude (km)       : 2.400
Gaia source ID      : 4079276958972707328
2Mass ID (if available) : 18421893-2234592
ICRS Star Coord at Epoch: 18h 42m 18.92906s -22:34:59.44758s
RUWE (>1.4 is poor) : 0.94
K magnitude          : 12.850
G magnitude          : 15.770
RP magnitude         : 14.880
BP magnitude         : 16.563
DUPflag             : 0
Distance (au)        : 9.166
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.18
Sun-Target sep (deg) : 146.94
Sun-Moon sep (deg)  : 163.41
B (ring opening deg) : 25.63
PA of pole (deg)    : 6.38
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.177
C/A sky separation (km): 1174.5
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

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Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2048-08-05T05:34:28.002	48.28	-73.82	2575.1	-27.54	-27.55
Titan	E	2048-08-05T05:38:50.396	47.32	-73.15	2575.1	-21.00	-21.01