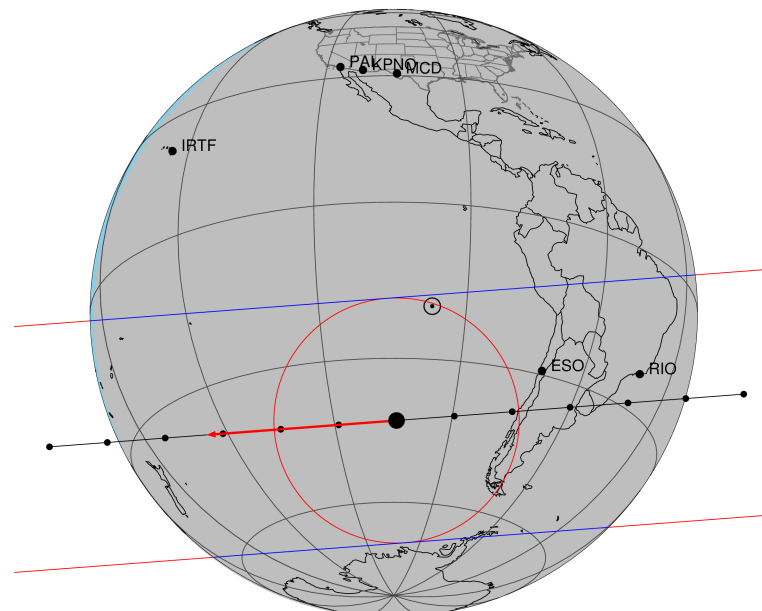


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2049-07-23T06:34:25.320
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 6772004476117485824
 2Mass ID (if available) : 19382940-2130164

Titan 2049-07-23T06:34:25 K14.74 G16.73 dots 60.0 sec
 Pgt

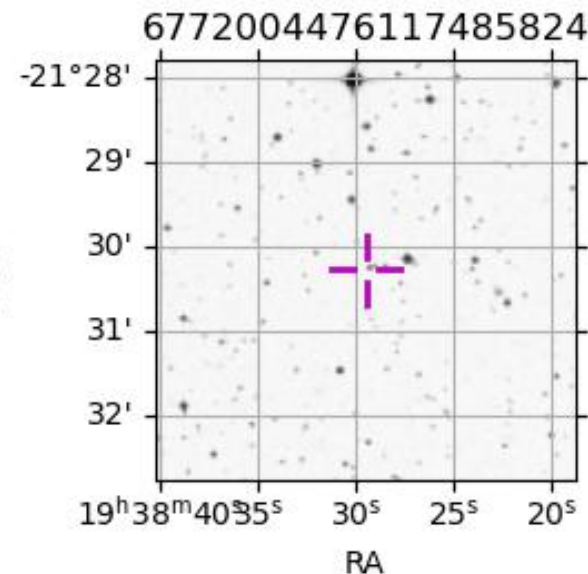
ICRS Star Coord at Epoch: 19h 38m 29.41596s -21:30:17.02592s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.745
 G magnitude : 16.728
 RP magnitude : 16.125
 BP magnitude : 17.160
 DUPflag : 0
 Distance (au) : 8.995
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -20.30
 Sun-Target sep (deg) : 172.62
 Sun-Moon sep (deg) : 114.94
 B (ring opening deg) : 23.05
 PA of pole (deg) : 6.90
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.345
 C/A sky separation (km) : 2250.1
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk



2049-07-23T06:34:25.3200 cc: 19 38 29.4160 s: -21 30 17.026 C/A 0.346" PA 175.65 deg v_sky -20.30 km/s D 08.99 AU
 Credit: Styled after SORA/Lucky Star

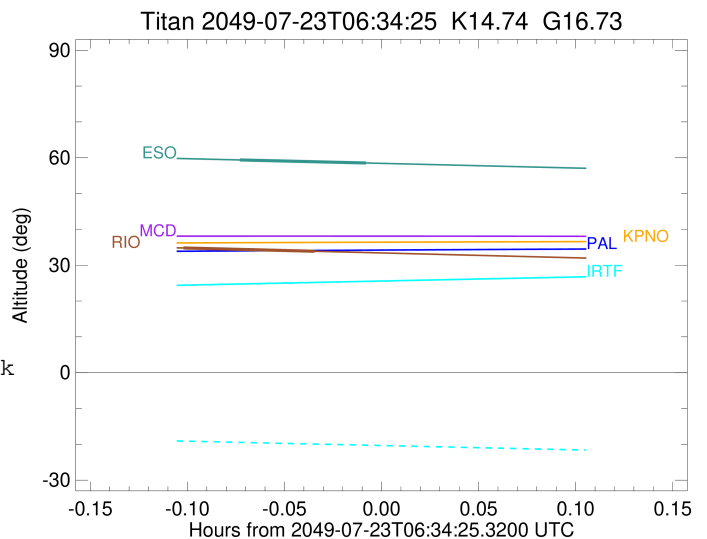
URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp
 Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
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	+ +	JUL 23 06:28 - JUL 23 06:32	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	JUL 23 06:30 - JUL 23 06:33	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



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2049-07-23T06:30:19.350
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       : 6772004476117485824
2Mass ID (if available) : 19382940-2130164
ICRS Star Coord at Epoch: 19h 38m 29.41596s -21:30:17.02592s
RUWE (>1.4 is poor) : 1.02
K magnitude           : 14.745
G magnitude           : 16.728
RP magnitude         : 16.125
BP magnitude         : 17.160
DUPflag              : 0
Distance (au)        : 8.995
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -20.30
Sun-Target sep (deg) : 172.62
Sun-Moon sep (deg)   : 115.70
B (ring opening deg) : 23.05
PA of pole (deg)     : 6.90
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.092
C/A sky separation (km) : 603.0
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	2049-07-23T06:28:17.293	34.81	-41.52	2575.2	2.50	2.50
Titan	E	2049-07-23T06:32:21.447	33.89	-40.59	2575.1	22.31	22.32

```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2049-07-23T06:31:59.770
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       : 6772004476117485824
2Mass ID (if available) : 19382940-2130164
ICRS Star Coord at Epoch: 19h 38m 29.41596s -21:30:17.02592s
RUWE (>1.4 is poor) : 1.02
K magnitude          : 14.745
G magnitude          : 16.728
RP magnitude         : 16.125
BP magnitude         : 17.160
DUPflag             : 0
Distance (au)        : 8.995
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -20.30
Sun-Target sep (deg) : 172.62
Sun-Moon sep (deg)   : 115.83
B (ring opening deg) : 23.05
PA of pole (deg)     : 6.90
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.125
C/A sky separation (km) : 816.7
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	2049-07-23T06:30:01.440	59.38	-65.42	2575.2	6.94	6.94
Titan	E	2049-07-23T06:33:58.118	58.52	-64.59	2575.1	26.89	26.90

