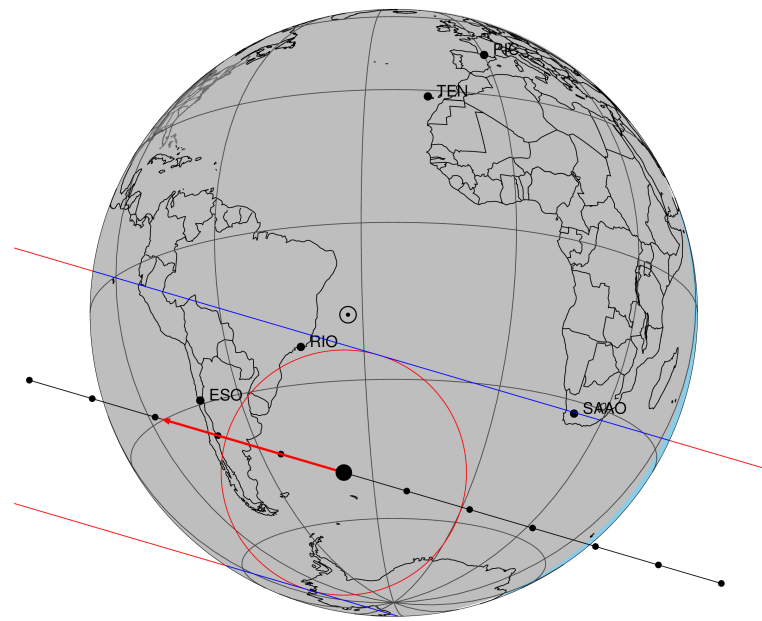


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2044-05-09T02:08:03.620
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 6261341866874029952
 2Mass ID (if available) : 15403104-1712229

Titan 2044-05-09T02:08:03 K11.55 G13.15 dots 60.0 sec
 Pt

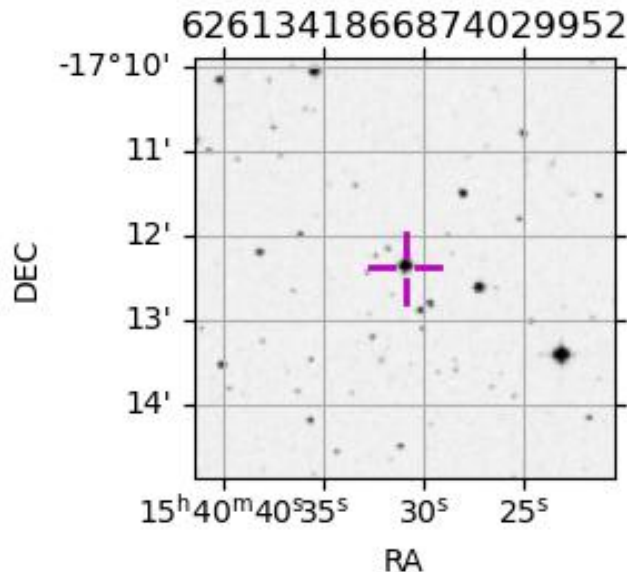
ICRS Star Coord at Epoch: 15h 40m 31.03890s -17:12:23.29955s
 RUWE (>1.4 is poor) : 2.70
 K magnitude : 11.551
 G magnitude : 13.154
 RP magnitude : 12.618
 BP magnitude : 13.519
 DUPflag : 0
 Distance (au) : 8.942
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -22.94
 Sun-Target sep (deg) : 171.32
 Sun-Moon sep (deg) : 41.98
 B (ring opening deg) : 23.53
 PA of pole (deg) : 1.93
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.541
 C/A sky separation (km) : 3511.4
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp



2044-05-09T02:08:03.6200 ra: 15 40 31.0389 d: -17 12 23.300 C/A 0.542" PA 196.37 deg v_sky -22.95 km/s D 08.94 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	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	+ +	MAY 09 02:08 - MAY 09 02:10	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	MAY 09 02:08 - MAY 09 02:12	Pie
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	MAY 09 02:04 - MAY 09 02:05	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



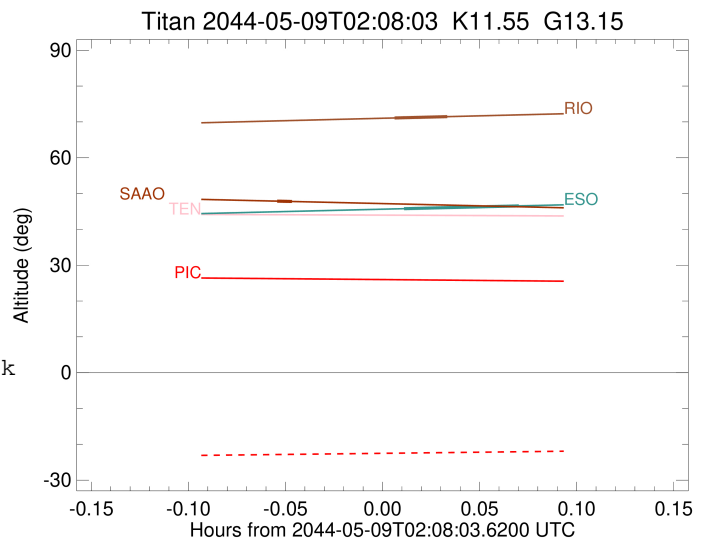
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2044-05-09T02:09:15.030
Event type            : Pt
: Titan occs: topocentric, not geocentric
: 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       : 6261341866874029952
2Mass ID (if available) : 15403104-1712229
ICRS Star Coord at Epoch: 15h 40m 31.03890s -17:12:23.29955s
RUWE (>1.4 is poor) : 2.70
K magnitude           : 11.551
G magnitude           : 13.154
RP magnitude          : 12.618
BP magnitude          : 13.519
DUPflag              : 0
Distance (au)         : 8.942
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -22.94
Sun-Target sep (deg) : 171.32
Sun-Moon sep (deg)   : 42.37
B (ring opening deg) : 23.53
PA of pole (deg)     : 1.93
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.356
C/A sky separation (km) : 2305.9
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	2044-05-09T02:08:25.883	71.09	-79.07	2575.0	63.59	63.60
Titan	E	2044-05-09T02:10:04.187	71.46	-79.41	2575.1	44.19	44.21



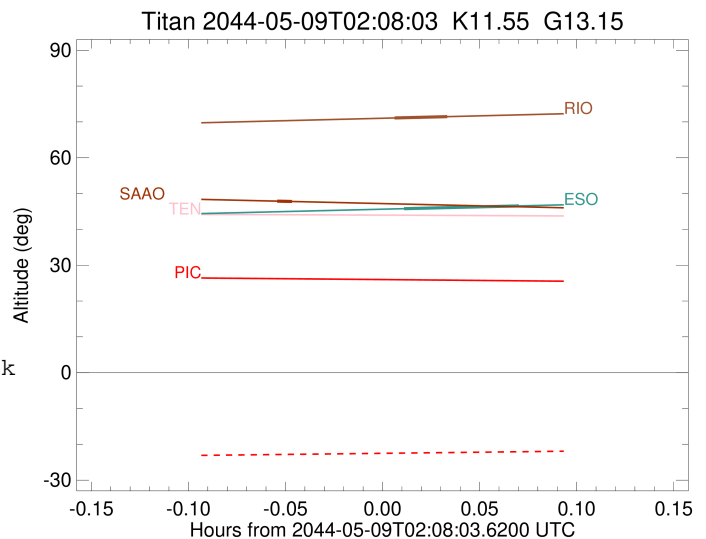
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2044-05-09T02:10:30.030
Event type           : Pt
: Titan occs: topocentric, not geocentric
: 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       : 6261341866874029952
2Mass ID (if available) : 15403104-1712229
ICRS Star Coord at Epoch: 15h 40m 31.03890s -17:12:23.29955s
RUWE (>1.4 is poor) : 2.70
K magnitude          : 11.551
G magnitude          : 13.154
RP magnitude         : 12.618
BP magnitude         : 13.519
DUPflag             : 0
Distance (au)        : 8.942
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -22.94
Sun-Target sep (deg) : 171.32
Sun-Moon sep (deg)  : 42.01
B (ring opening deg) : 23.53
PA of pole (deg)    : 1.93
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.100
C/A sky separation (km) : 650.1
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	2044-05-09T02:08:42.564	45.77	-53.71	2575.1	26.10	26.11
Titan	E	2044-05-09T02:12:17.487	46.55	-54.48	2575.2	0.51	0.51



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2044-05-09T02:05:01.880
Event type            : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code         : SAAO
Location              : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)       : -32.37953
E. Longitude (deg)   : 20.81070
Altitude (km)        : 1.768
Gaia source ID       : 6261341866874029952
2Mass ID (if available) : 15403104-1712229
ICRS Star Coord at Epoch: 15h 40m 31.03890s -17:12:23.29955s
RUWE (>1.4 is poor) : 2.70
K magnitude           : 11.551
G magnitude           : 13.154
RP magnitude          : 12.618
BP magnitude          : 13.519
DUPflag              : 0
Distance (au)        : 8.942
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -22.94
Sun-Target sep (deg) : 171.32
Sun-Moon sep (deg)   : 42.87
B (ring opening deg) : 23.53
PA of pole (deg)     : 1.93
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.393
C/A sky separation (km) : 2551.4
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	2044-05-09T02:04:46.893	47.88	-40.31	2575.1	65.60	65.61
Titan	E	2044-05-09T02:05:16.870	47.78	-40.21	2575.1	58.08	58.09

