

target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2048-09-03T22:35:31.850
 Event type : Pt
 : Titan occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4079213878864993920
 2Mass ID (if available) : 18374947-2243520

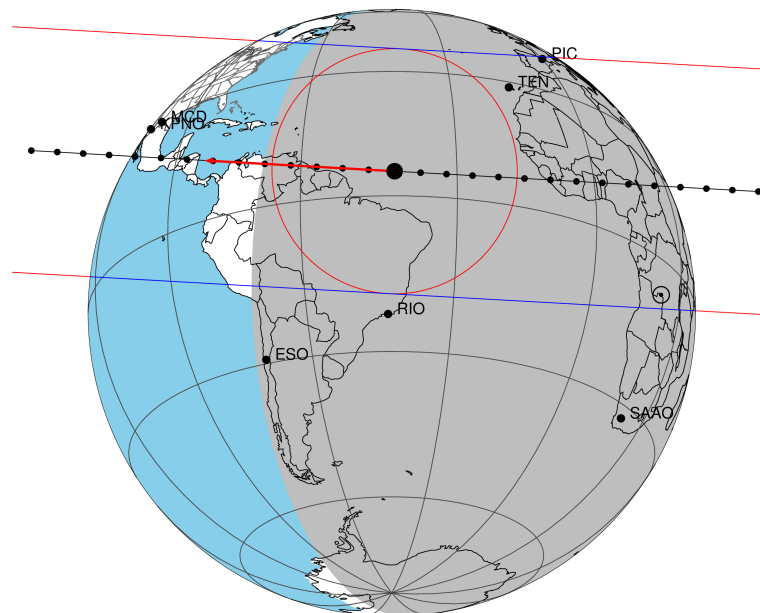
ICRS Star Coord at Epoch: 18h 37m 49.45631s -22:43:52.36144s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 13.923
 G magnitude : 16.832
 RP magnitude : 15.961
 BP magnitude : 17.563
 DUPflag : 0
 Distance (au) : 9.523
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -9.10
 Sun-Target sep (deg) : 117.30
 Sun-Moon sep (deg) : 167.70
 B (ring opening deg) : 25.89
 PA of pole (deg) : 6.32
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.432
 C/A sky separation (km) : 2986.9
 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	+ +	SEP 03 22:29 - SEP 03 22:31	Pie
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	+ +	SEP 03 22:28 - SEP 03 22:34	Pie
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			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

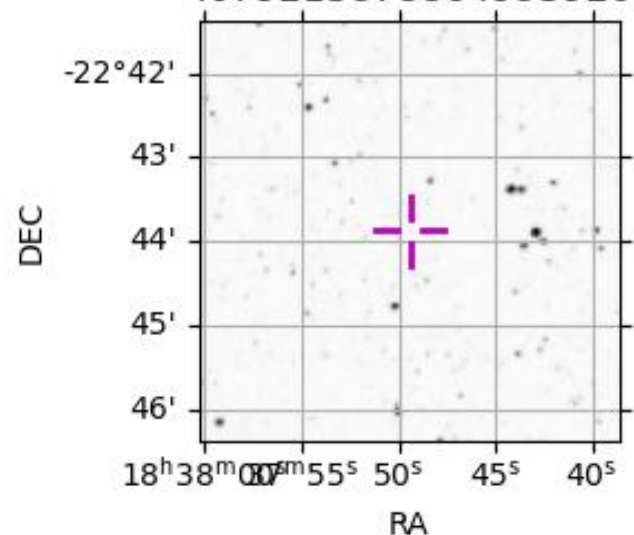
Titan 2048-09-03T22:35:31 K13.92 G16.83 dots 60.0 sec
 Pt



2048-09-03T22:35:31.8500 α: 18 37 49.4563 δ: -22 43 52.361 C/A 0.431" PA 3.23 deg v_sky - 9.10 km/s D 09.52 AU

Credit: Styled after SORA/Lucky Star

4079213878864993920



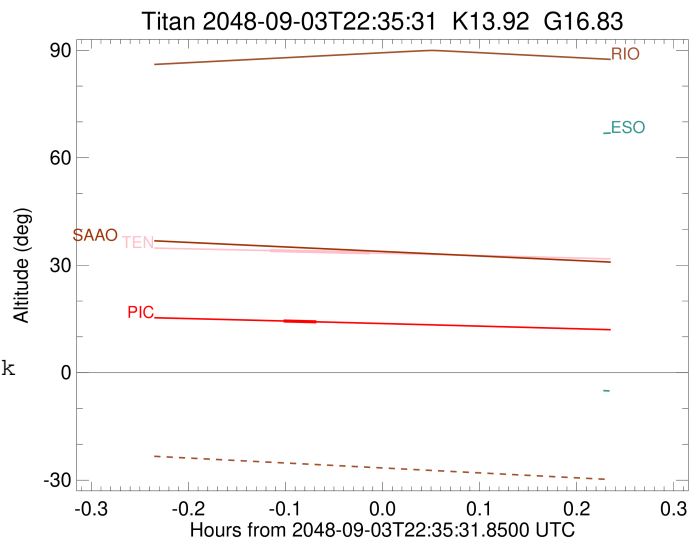
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2048-09-03T22:30:25.080
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : PIC
Location             : Pic du Midi
Latitude (deg)       : 42.93656
E. Longitude (deg)   : 0.14231
Altitude (km)        : 2.890
Gaia source ID       : 4079213878864993920
2Mass ID (if available) : 18374947-2243520
ICRS Star Coord at Epoch: 18h 37m 49.45631s -22:43:52.36144s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 13.923
G magnitude           : 16.832
RP magnitude         : 15.961
BP magnitude         : 17.563
DUPflag              : 0
Distance (au)        : 9.523
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -9.10
Sun-Target sep (deg) : 117.30
Sun-Moon sep (deg)   : 167.13
B (ring opening deg) : 25.89
PA of pole (deg)     : 6.32
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.363
C/A sky separation (km): 2508.9
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

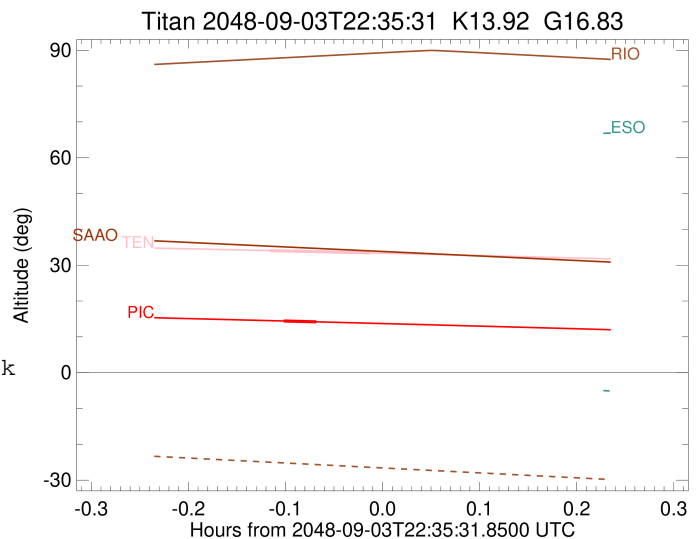
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2048-09-03T22:29:23.161	14.43	-36.28	2575.1	60.01	60.02
Titan	E	2048-09-03T22:31:27.020	14.19	-36.46	2575.1	62.25	62.26



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2048-09-03T22:31:38.910
Event type            : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code         : TEN
Location              : Teide Obs./Tenerife
Latitude (deg)        : 28.30050
E. Longitude (deg)    : 343.48909
Altitude (km)         : 2.395
Gaia source ID        : 4079213878864993920
2Mass ID (if available) : 18374947-2243520
ICRS Star Coord at Epoch: 18h 37m 49.45631s -22:43:52.36144s
RUWE (>1.4 is poor)  : 0.99
K magnitude           : 13.923
G magnitude           : 16.832
RP magnitude          : 15.961
BP magnitude          : 17.563
DUPflag              : 0
Distance (au)         : 9.523
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -9.10
Sun-Target sep (deg)  : 117.30
Sun-Moon sep (deg)    : 167.31
B (ring opening deg)  : 25.89
PA of pole (deg)      : 6.32
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.270
C/A sky separation (km) : 1867.3
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	2048-09-03T22:28:31.847	34.07	-38.44	2575.1	38.38	38.40
Titan	E	2048-09-03T22:34:46.065	33.43	-39.53	2575.1	43.00	43.01