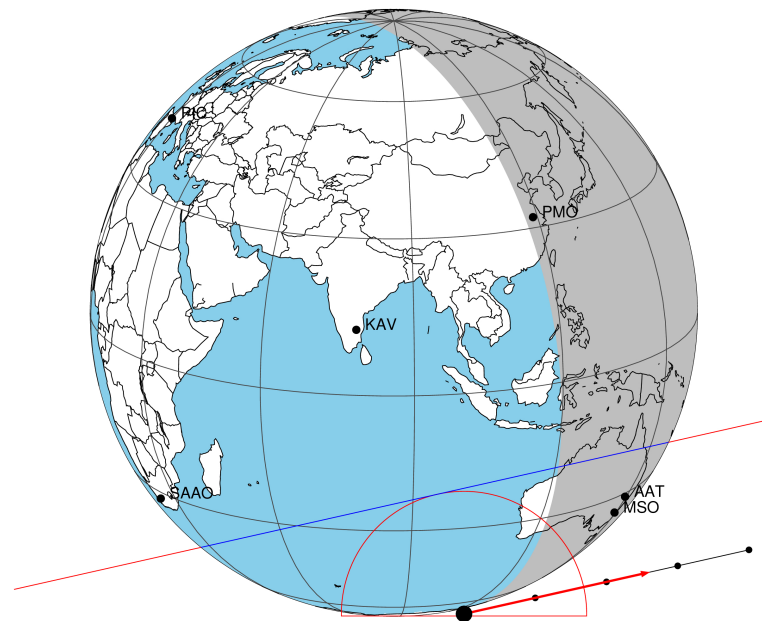


target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2030-03-11T10:13:02.100  
 Event type : Pt  
 : Titan occs: topocentric, not geocentric  
 : Not a ringed target  
 Gaia source ID : 31198268776943232  
 2Mass ID (if available) : 03121639+1547506

ICRS Star Coord at Epoch: 03h 12m 16.52455s +15:47:49.42238s  
 RUWE (>1.4 is poor) : 0.93  
 K magnitude : 12.114  
 G magnitude : 15.428  
 RP magnitude : 14.367  
 BP magnitude : 16.563  
 DUPflag : 0  
 Distance (au) : 9.575  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 25.55  
 Sun-Target sep (deg) : 59.51  
 Sun-Moon sep (deg) : 20.47  
 B (ring opening deg) : -22.29  
 PA of pole (deg) : -1.06  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.936  
 C/A sky separation (km) : 6502.7  
 NAIF SPICE kernels : RAJobs\_U111+rgf16.spk

Titan 2030-03-11T10:13:02 K12.11 G15.43 dots 60.0 sec  
 Pt



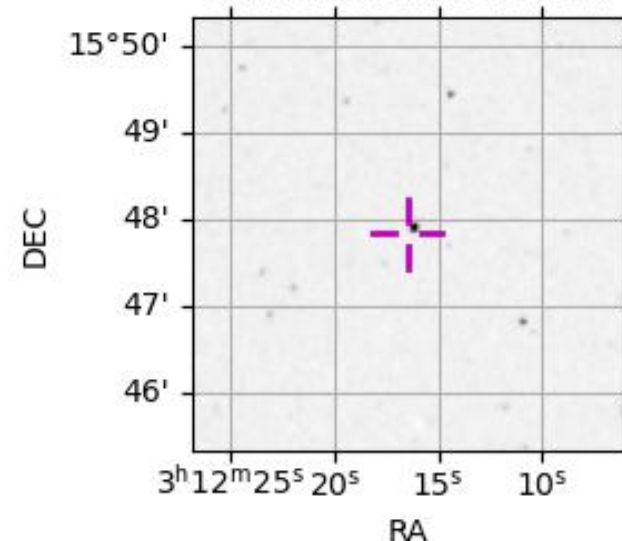
2030-03-11T10:13:02.1000 α: 03 12 16.5246 δ: +15 47 49.422 C/A 0.935" PA 167.33 deg v\_sky +25.55 km/s D 09.57 AU  
 Credit: Styled after SORA/Lucky Star

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	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			Pnn
ESO	European Southern Obs. (3.6m)	-29.3	289.3			Pnn
AAT	Siding Spring (AAT)	-31.3	149.1	+ +	MAR 11 10:14 - MAR 11 10:16	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	MAR 11 10:14 - MAR 11 10:16	Pie

31198268776943232



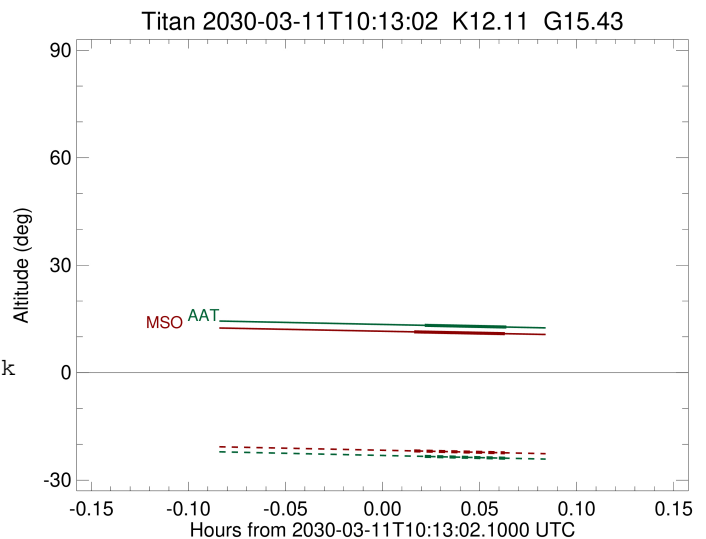
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2030-03-11T10:15:36.130
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : AAT
Location             : Siding Spring (AAT)
Latitude (deg)       : -31.27703
E. Longitude (deg)   : 149.06608
Altitude (km)        : 1.164
Gaia source ID       : 31198268776943232
2Mass ID (if available) : 03121639+1547506
ICRS Star Coord at Epoch: 03h 12m 16.52455s +15:47:49.42238s
RUWE (>1.4 is poor) : 0.93
K magnitude          : 12.114
G magnitude          : 15.428
RP magnitude         : 14.367
BP magnitude         : 16.563
DUPflag             : 0
Distance (au)        : 9.575
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 25.55
Sun-Target sep (deg) : 59.51
Sun-Moon sep (deg)   : 20.17
B (ring opening deg) : -22.29
PA of pole (deg)     : -1.06
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.245
C/A sky separation (km) : 1700.9
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	2030-03-11T10:14:19.885	13.21	-23.37	2575.1	47.50	47.51
Titan	E	2030-03-11T10:16:52.369	12.73	-23.88	2575.2	27.42	27.44



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2030-03-11T10:15:24.740
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : MSO
Location             : Mt. Stromlo Observatory
Latitude (deg)       : -35.32000
E. Longitude (deg)   : 149.00833
Altitude (km)        : 0.770
Gaia source ID       : 31198268776943232
2Mass ID (if available) : 03121639+1547506
ICRS Star Coord at Epoch: 03h 12m 16.52455s +15:47:49.42238s
RUWE (>1.4 is poor) : 0.93
K magnitude          : 12.114
G magnitude          : 15.428
RP magnitude         : 14.367
BP magnitude         : 16.563
DUPflag             : 0
Distance (au)        : 9.575
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 25.55
Sun-Target sep (deg) : 59.51
Sun-Moon sep (deg)   : 20.20
B (ring opening deg) : -22.29
PA of pole (deg)     : -1.06
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.205
C/A sky separation (km) : 1425.2
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	2030-03-11T10:14:00.182	11.39	-21.84	2575.1	40.95	40.96
Titan	E	2030-03-11T10:16:49.284	10.88	-22.37	2575.2	20.38	20.39

