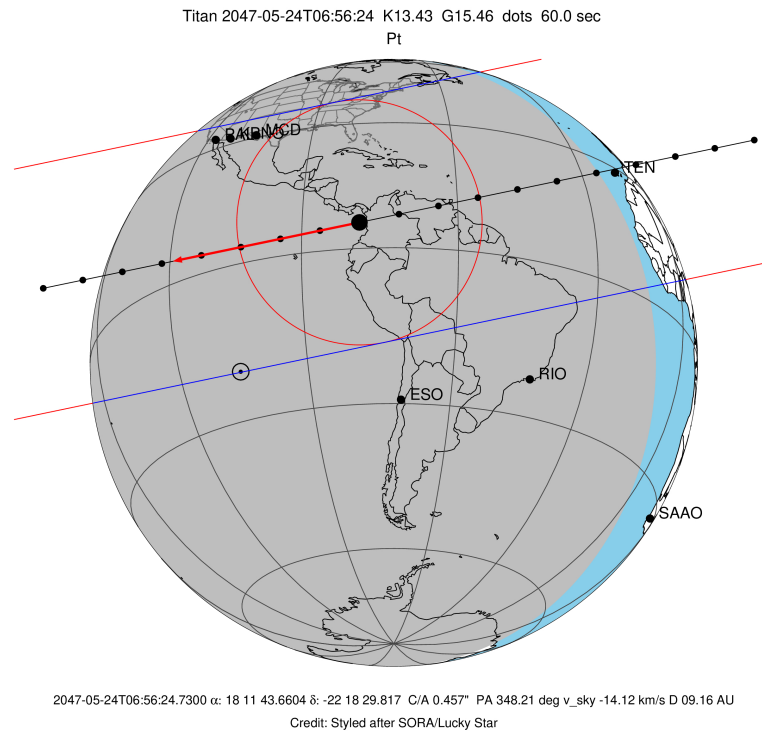


```

target          : Titan
target radius (km) : 2575.15
C/A epoch       : 2047-05-24T06:56:24.730
Event type      : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Gaia source ID  : 4066730298722166016
2Mass ID (if available) : 18114365-2218298

ICRS Star Coord at Epoch: 18h 11m 43.66044s -22:18:29.81677s
RUWE (>1.4 is poor) : 1.01
K magnitude     : 13.427
G magnitude     : 15.458
RP magnitude    : 14.770
BP magnitude    : 15.970
DUPflag        : 0
Distance (au)   : 9.162
f0 (km)         : 0.00
g0 (km)         : 0.00
skyplane vel. (km/s) : -14.12
Sun-Target sep (deg) : 149.68
Sun-Moon sep (deg) : 143.15
B (ring opening deg) : 26.11
PA of pole (deg) : 5.88
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.454
C/A sky separation (km) : 3015.9
NAIF SPICE kernels : RAJobs_U111+rgf16.spk

```

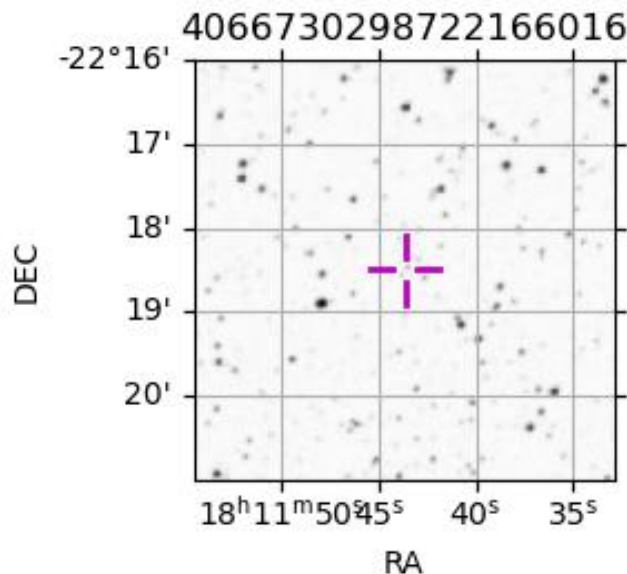


```

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			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	MAY 24 06:58 - MAY 24 07:00	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	MAY 24 06:57 - MAY 24 07:00	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	MAY 24 06:57 - MAY 24 06:59	Pie
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			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



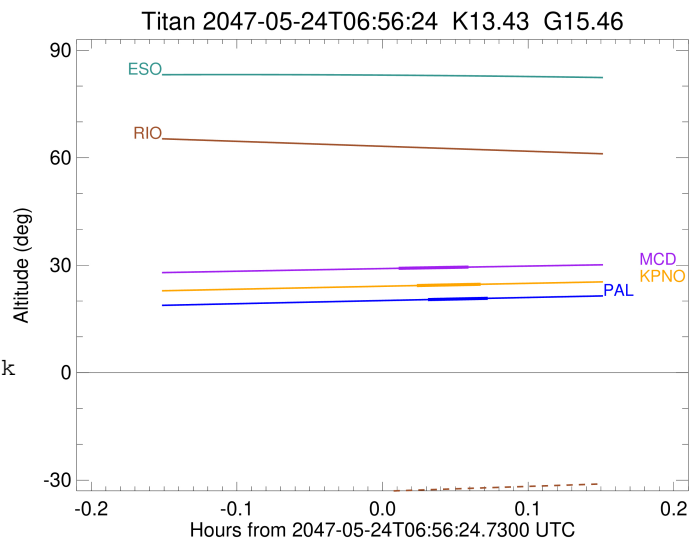
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-05-24T06:59:30.450
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : PAL
Location             : Palomar Mt (200")
Latitude (deg)       : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)       : 1.706
Gaia source ID      : 4066730298722166016
2Mass ID (if available) : 18114365-2218298
ICRS Star Coord at Epoch: 18h 11m 43.66044s -22:18:29.81677s
RUWE (>1.4 is poor) : 1.01
K magnitude          : 13.427
G magnitude          : 15.458
RP magnitude         : 14.770
BP magnitude         : 15.970
DUPflag             : 0
Distance (au)       : 9.162
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -14.12
Sun-Target sep (deg) : 149.68
Sun-Moon sep (deg)  : 143.00
B (ring opening deg) : 26.11
PA of pole (deg)    : 5.88
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.352
C/A sky separation (km) : 2340.5
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

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2047-05-24T06:58:15.976	20.39	-34.95	2575.1	41.47	41.49
Titan	E	2047-05-24T07:00:44.904	20.75	-35.06	2575.0	63.07	63.08



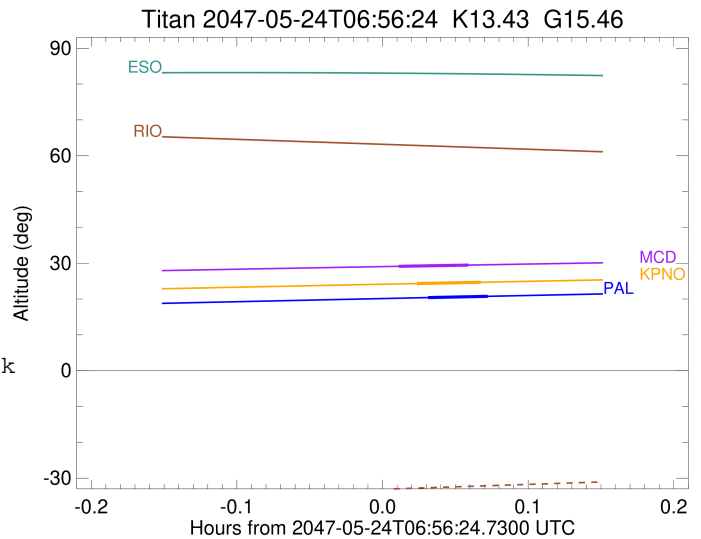
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-05-24T06:59:08.790
Event type           : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code        : KPNO
Location             : Kitt Peak Natl Obs
Latitude (deg)       : 31.96333
E. Longitude (deg)  : 248.40000
Altitude (km)        : 2.120
Gaia source ID       : 4066730298722166016
2Mass ID (if available) : 18114365-2218298
ICRS Star Coord at Epoch: 18h 11m 43.66044s -22:18:29.81677s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 13.427
G magnitude           : 15.458
RP magnitude          : 14.770
BP magnitude          : 15.970
DUPflag              : 0
Distance (au)        : 9.162
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.12
Sun-Target sep (deg) : 149.68
Sun-Moon sep (deg)   : 143.07
B (ring opening deg) : 26.11
PA of pole (deg)     : 5.88
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.346
C/A sky separation (km) : 2300.1
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	2047-05-24T06:57:48.634	24.31	-37.09	2575.1	39.83	39.85
Titan	E	2047-05-24T07:00:28.928	24.67	-37.16	2575.1	62.50	62.51



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-05-24T06:58:30.970
Event type            : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Observer code         : MCD
Location              : McDonald Obs. 2.7m
Latitude (deg)        : 30.67158
E. Longitude (deg)    : 255.97844
Altitude (km)         : 2.075
Gaia source ID        : 4066730298722166016
2Mass ID (if available) : 18114365-2218298
ICRS Star Coord at Epoch: 18h 11m 43.66044s -22:18:29.81677s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 13.427
G magnitude           : 15.458
RP magnitude          : 14.770
BP magnitude          : 15.970
DUPflag              : 0
Distance (au)         : 9.162
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -14.12
Sun-Target sep (deg)  : 149.68
Sun-Moon sep (deg)    : 143.17
B (ring opening deg) : 26.11
PA of pole (deg)     : 5.88
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.339
C/A sky separation (km) : 2249.7
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	2047-05-24T06:57:04.393	29.13	-38.72	2575.1	37.93	37.94
Titan	E	2047-05-24T06:59:57.516	29.47	-38.70	2575.0	61.65	61.67

