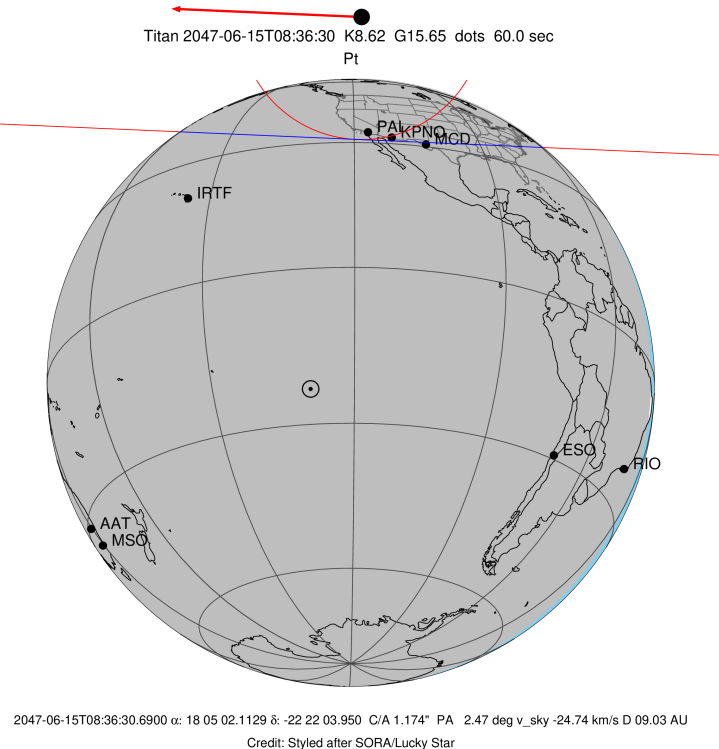


```

target           : Titan
target radius (km) : 2575.15
C/A epoch       : 2047-06-15T08:36:30.690
Event type      : Pt
: Titan occs: topocentric, not geocentric
: Not a ringed target
Gaia source ID  : 4069691730161883776
2Mass ID (if available) : 18050212-2222036

ICRS Star Coord at Epoch: 18h 05m 02.11289s -22:22:03.95019s
RUWE (>1.4 is poor) : 0.98
K magnitude     : 8.620
G magnitude     : 15.650
RP magnitude    : 14.130
BP magnitude    : 18.908
DUPflag        : 0
Distance (au)   : 9.032
f0 (km)        : 0.00
g0 (km)        : 0.00
skyplane vel. (km/s) : -24.74
Sun-Target sep (deg) : 172.31
Sun-Moon sep (deg) : 82.72
B (ring opening deg) : 26.33
PA of pole (deg) : 5.76
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 1.175
C/A sky separation (km) : 7694.5
NAIF SPICE kernels : RAJobs_U111+rgf16.spk

```

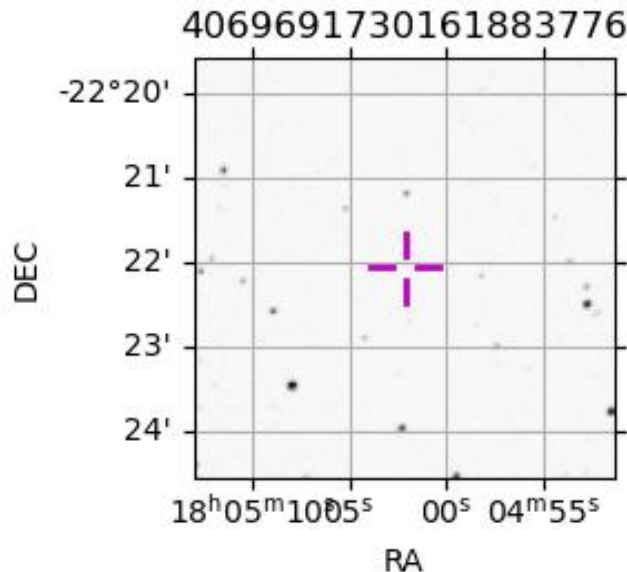


```

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

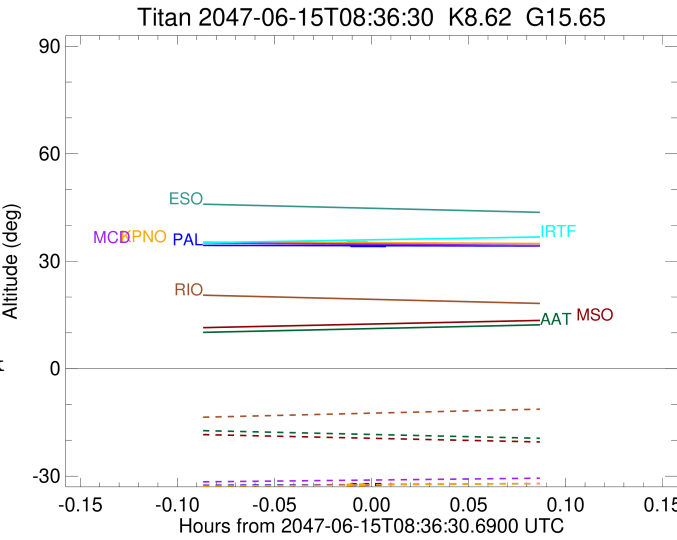
```

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	JUN 15 08:35 - JUN 15 08:36	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	JUN 15 08:35 - JUN 15 08:36	Pie
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			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            : 2047-06-15T08:36:24.330
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       : 4069691730161883776
2Mass ID (if available) : 18050212-2222036
ICRS Star Coord at Epoch: 18h 05m 02.11289s -22:22:03.95019s
RUWE (>1.4 is poor) : 0.98
K magnitude          : 8.620
G magnitude          : 15.650
RP magnitude         : 14.130
BP magnitude         : 18.908
DUPflag             : 0
Distance (au)        : 9.032
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -24.74
Sun-Target sep (deg) : 172.31
Sun-Moon sep (deg)  : 83.21
B (ring opening deg) : 26.33
PA of pole (deg)    : 5.76
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (" ) : 0.372
C/A sky separation (km) : 2434.3
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	2047-06-15T08:35:50.912	34.35	-32.37	2575.1	-59.62	-59.63
Titan	E	2047-06-15T08:36:57.748	34.33	-32.32	2575.1	-56.00	-56.01

```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-06-15T08:36:04.230
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      : 4069691730161883776
2Mass ID (if available) : 18050212-2222036
ICRS Star Coord at Epoch: 18h 05m 02.11289s -22:22:03.95019s
RUWE (>1.4 is poor) : 0.98
K magnitude         : 8.620
G magnitude         : 15.650
RP magnitude        : 14.130
BP magnitude        : 18.908
DUPflag            : 0
Distance (au)       : 9.032
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -24.74
Sun-Target sep (deg) : 172.31
Sun-Moon sep (deg)  : 83.22
B (ring opening deg) : 26.33
PA of pole (deg)    : 5.76
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.385
C/A sky separation (km) : 2524.6
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	2047-06-15T08:35:44.051	35.17	-32.49	2575.1	-62.54	-62.55
Titan	E	2047-06-15T08:36:24.412	35.15	-32.45	2575.1	-60.14	-60.15

