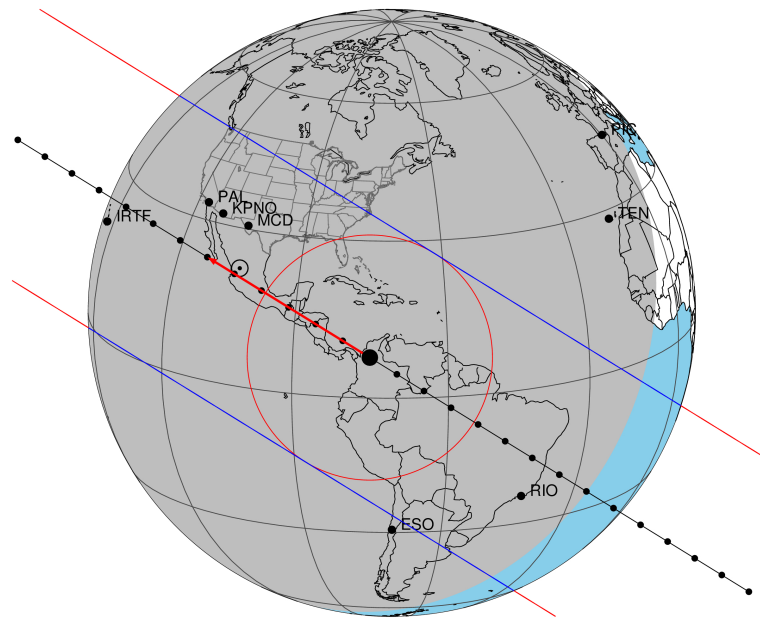


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2036-01-07T07:00:01.680
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 631028346159197824
 2Mass ID (if available) : 09205344+1630195

ICRS Star Coord at Epoch: 09h 20m 53.43352s +16:30:19.18582s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 13.668
 G magnitude : 16.529
 RP magnitude : 15.652
 BP magnitude : 17.345
 DUPflag : 0
 Distance (au) : 8.294
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -11.15
 Sun-Target sep (deg) : 148.56
 Sun-Moon sep (deg) : 114.80
 B (ring opening deg) : -15.18
 PA of pole (deg) : -6.69
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.178
 C/A sky separation (km) : 1073.2
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

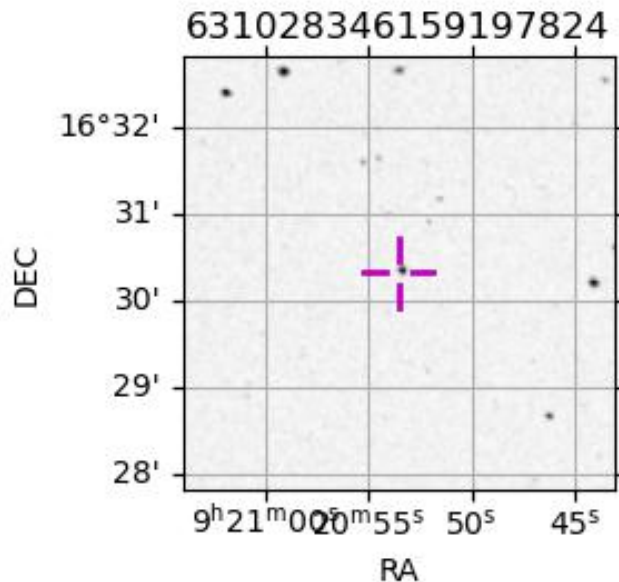
Titan 2036-01-07T07:00:01 K13.67 G16.53 dots 60.0 sec
 Pgt



2036-01-07T07:00:01.6800 α: 09 20 53.4335 δ: +16 30 19.186 C/A 0.173" PA 211.75 deg v_sky -11.14 km/s D 08.29 AU
 Credit: Styled after SORA/Lucky Star

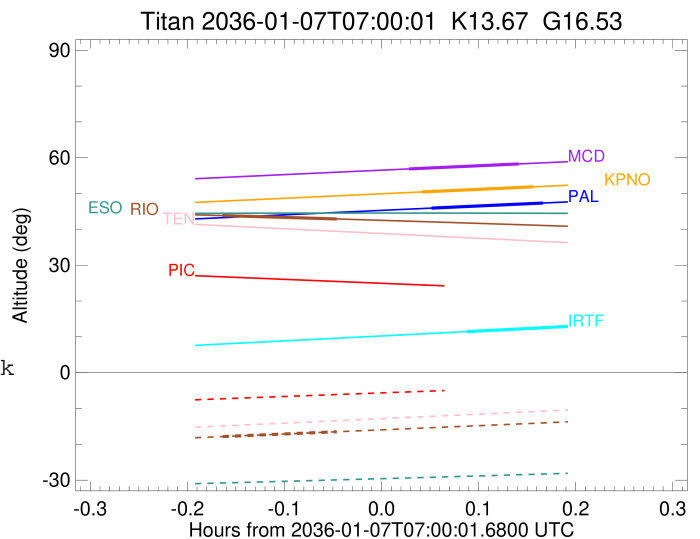
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	JAN 07 07:03 - JAN 07 07:10	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	JAN 07 07:02 - JAN 07 07:09	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	JAN 07 07:01 - JAN 07 07:08	Pie
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+ +	JAN 07 07:05 - JAN 07 07:12	Pie
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8	+ +	JAN 07 06:50 - JAN 07 06:57	Pie
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             : 2036-01-07T07:06:33.790
Event type            : Pgt
: Titan occs: geocentric, topocentric
: 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        : 631028346159197824
2Mass ID (if available) : 09205344+1630195
ICRS Star Coord at Epoch: 09h 20m 53.43352s +16:30:19.18582s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 13.668
G magnitude           : 16.529
RP magnitude          : 15.652
BP magnitude          : 17.345
DUPflag              : 0
Distance (au)         : 8.294
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -11.15
Sun-Target sep (deg)  : 148.56
Sun-Moon sep (deg)    : 115.69
B (ring opening deg)  : -15.18
PA of pole (deg)      : -6.69
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.172
C/A sky separation (km) : 1032.1
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	2036-01-07T07:03:07.153	45.93	-74.54	2575.1	58.15	58.17
Titan	E	2036-01-07T07:10:00.358	47.35	-75.59	2575.2	-13.89	-13.90

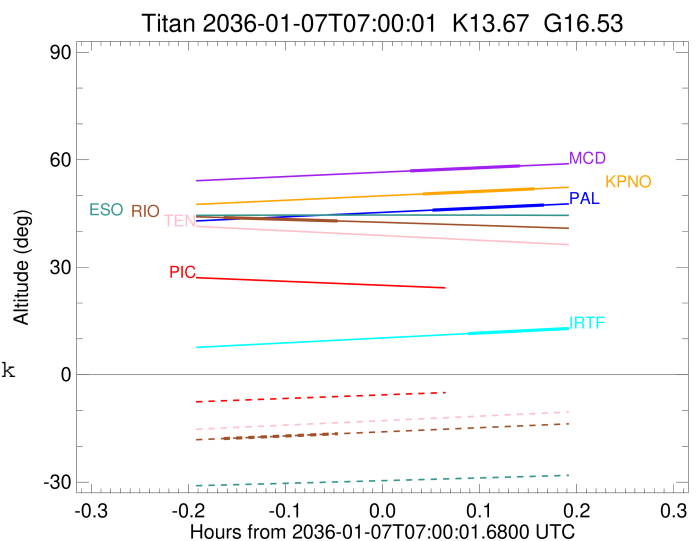
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2036-01-07T07:05:59.660
Event type           : Pgt
: Titan occs: geocentric, topocentric
: 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       : 631028346159197824
2Mass ID (if available) : 09205344+1630195
ICRS Star Coord at Epoch: 09h 20m 53.43352s +16:30:19.18582s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 13.668
G magnitude           : 16.529
RP magnitude          : 15.652
BP magnitude          : 17.345
DUPflag              : 0
Distance (au)        : 8.294
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -11.15
Sun-Target sep (deg) : 148.56
Sun-Moon sep (deg)   : 115.72
B (ring opening deg) : -15.18
PA of pole (deg)     : -6.69
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.165
C/A sky separation (km) : 993.8
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	2036-01-07T07:02:31.968	50.44	-78.52	2575.1	57.26	57.27
Titan	E	2036-01-07T07:09:27.288	51.87	-79.33	2575.2	-14.68	-14.69



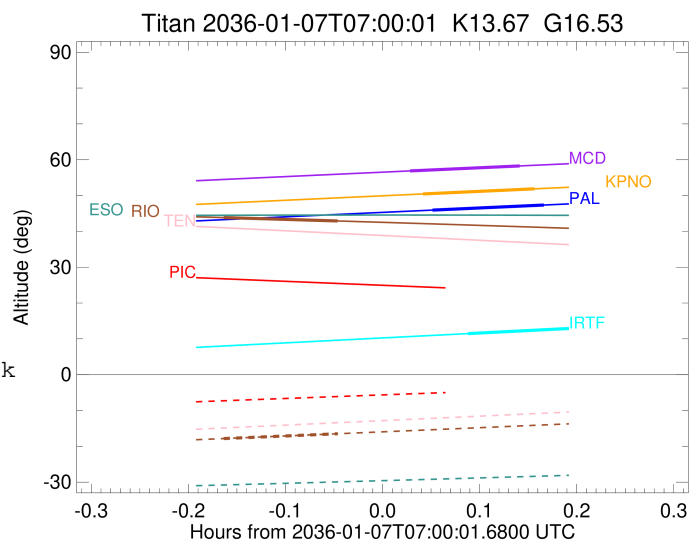
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2036-01-07T07:05:07.500
Event type           : Pgt
: Titan occs: geocentric, topocentric
: 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       : 631028346159197824
2Mass ID (if available) : 09205344+1630195
ICRS Star Coord at Epoch: 09h 20m 53.43352s +16:30:19.18582s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 13.668
G magnitude           : 16.529
RP magnitude          : 15.652
BP magnitude          : 17.345
DUPflag              : 0
Distance (au)         : 8.294
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -11.15
Sun-Target sep (deg) : 148.56
Sun-Moon sep (deg)   : 115.74
B (ring opening deg) : -15.18
PA of pole (deg)     : -6.69
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.176
C/A sky separation (km) : 1059.7
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	2036-01-07T07:01:42.738	56.87	-81.90	2575.1	58.53	58.54
Titan	E	2036-01-07T07:08:32.225	58.26	-81.77	2575.2	-13.01	-13.02



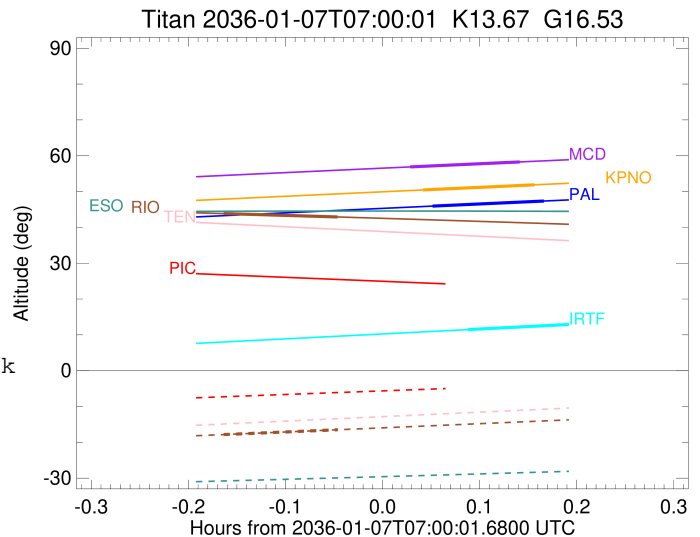
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2036-01-07T07:09:02.540
Event type            : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)        : 19.82622
E. Longitude (deg)    : 204.52800
Altitude (km)         : 4.168
Gaia source ID        : 631028346159197824
2Mass ID (if available) : 09205344+1630195
ICRS Star Coord at Epoch: 09h 20m 53.43352s +16:30:19.18582s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 13.668
G magnitude           : 16.529
RP magnitude          : 15.652
BP magnitude          : 17.345
DUPflag              : 0
Distance (au)         : 8.294
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -11.15
Sun-Target sep (deg)  : 148.56
Sun-Moon sep (deg)    : 115.36
B (ring opening deg)  : -15.18
PA of pole (deg)      : -6.69
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (" ) : 0.084
C/A sky separation (km) : 506.7
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

```

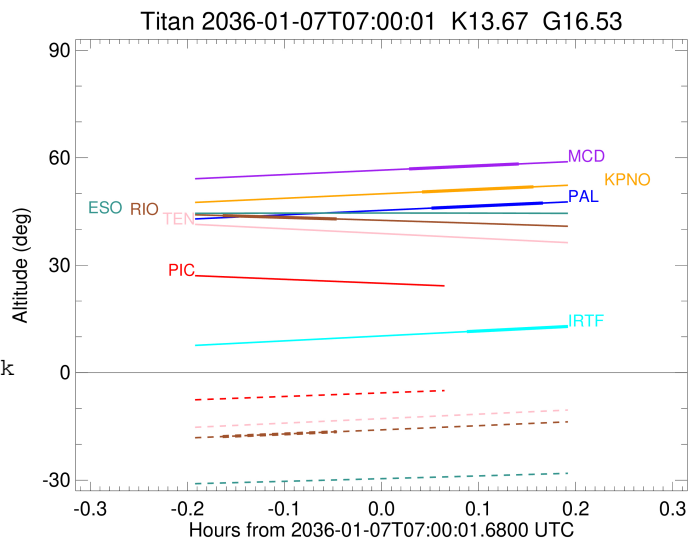
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2036-01-07T07:05:18.179	11.46	-42.89	2575.1	26.44	26.46
Titan	E	2036-01-07T07:12:46.768	13.18	-44.61	2575.1	-47.82	-47.84



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2036-01-07T06:53:44.610
Event type          : Pgt
                    : Titan occs: geocentric, topocentric
                    : 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      : 631028346159197824
2Mass ID (if available) : 09205344+1630195
ICRS Star Coord at Epoch: 09h 20m 53.43352s +16:30:19.18582s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 13.668
G magnitude          : 16.529
RP magnitude         : 15.652
BP magnitude         : 17.345
DUPflag             : 0
Distance (au)       : 8.294
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -11.15
Sun-Target sep (deg) : 148.56
Sun-Moon sep (deg)  : 115.16
B (ring opening deg) : -15.18
PA of pole (deg)    : -6.69
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.140
C/A sky separation (km) : 843.0
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	2036-01-07T06:50:11.967	43.84	-17.84	2575.1	17.41	17.42
Titan	E	2036-01-07T06:57:17.298	42.90	-16.49	2575.1	-53.40	-53.41