

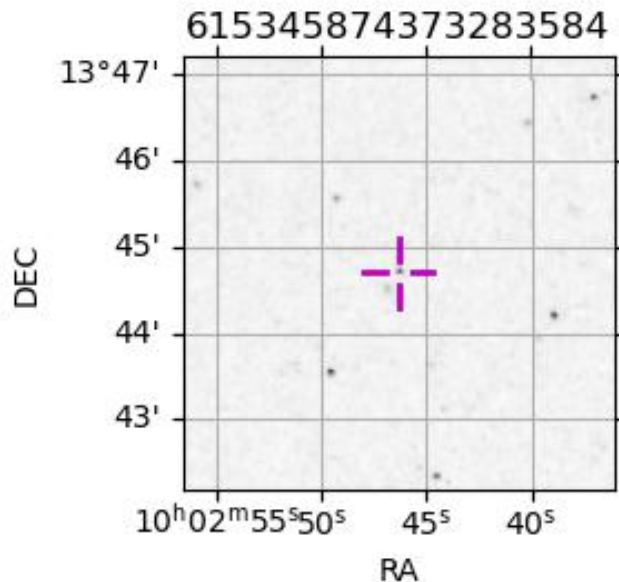
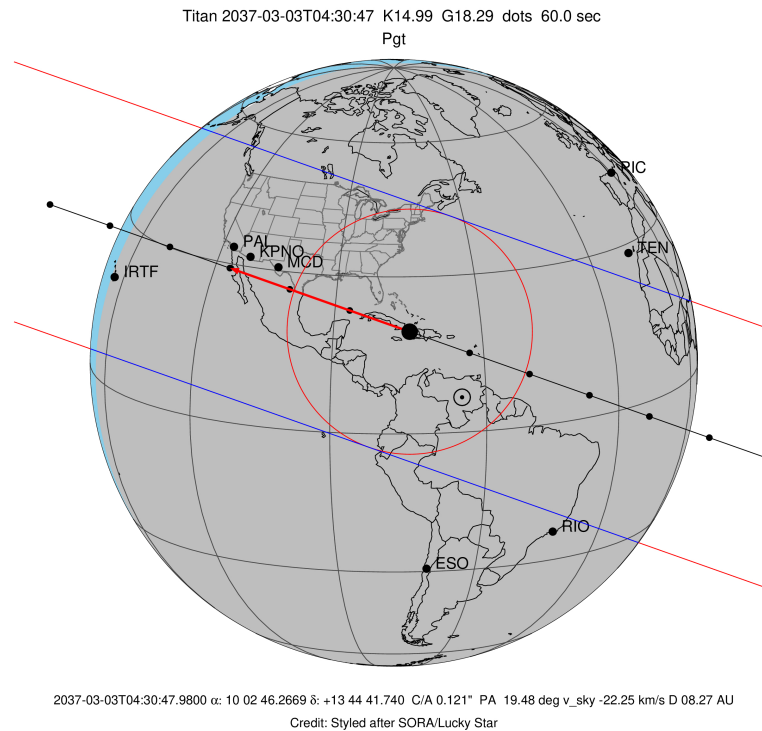
target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2037-03-03T04:30:47.980
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 615345874373283584
 2Mass ID (if available) : 10024629+1344420

ICRS Star Coord at Epoch: 10h 02m 46.26689s +13:44:41.73992s
 RUWE (>1.4 is poor) : 0.98
 K magnitude : 14.991
 G magnitude : 18.288
 RP magnitude : 17.319
 BP magnitude : 19.302
 DUPflag : 0
 Distance (au) : 8.272
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -22.25
 Sun-Target sep (deg) : 165.42
 Sun-Moon sep (deg) : 31.17
 B (ring opening deg) : -11.29
 PA of pole (deg) : -6.25
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.121
 C/A sky separation (km) : 725.5
 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	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	MAR 03 04:31 - MAR 03 04:35	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	MAR 03 04:31 - MAR 03 04:35	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	MAR 03 04:31 - MAR 03 04:34	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



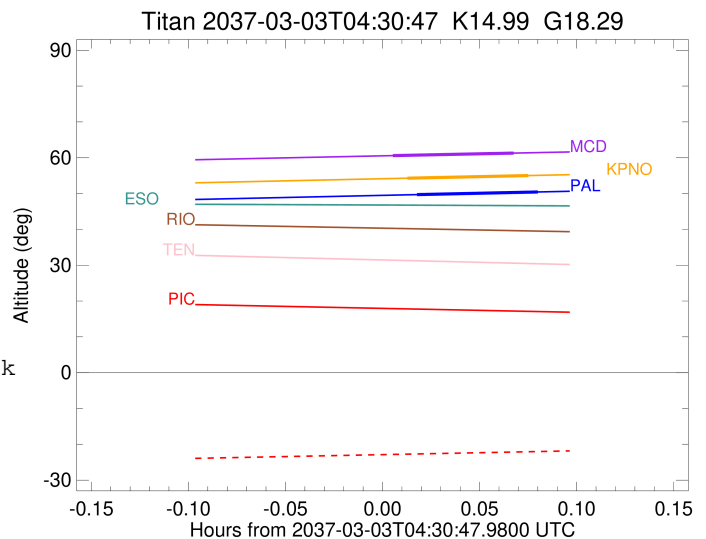
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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2037-03-03T04:33:44.250
Event type           : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code        : PAL
Location             : Palomar Mt (200")
Latitude (deg)       : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)        : 1.706
Gaia source ID       : 615345874373283584
2Mass ID (if available) : 10024629+1344420
ICRS Star Coord at Epoch: 10h 02m 46.26689s +13:44:41.73992s
RUWE (>1.4 is poor) : 0.98
K magnitude          : 14.991
G magnitude          : 18.288
RP magnitude         : 17.319
BP magnitude         : 19.302
DUPflag             : 0
Distance (au)        : 8.272
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -22.25
Sun-Target sep (deg) : 165.42
Sun-Moon sep (deg)  : 32.11
B (ring opening deg) : -11.29
PA of pole (deg)    : -6.25
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.073
C/A sky separation (km) : 435.7
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

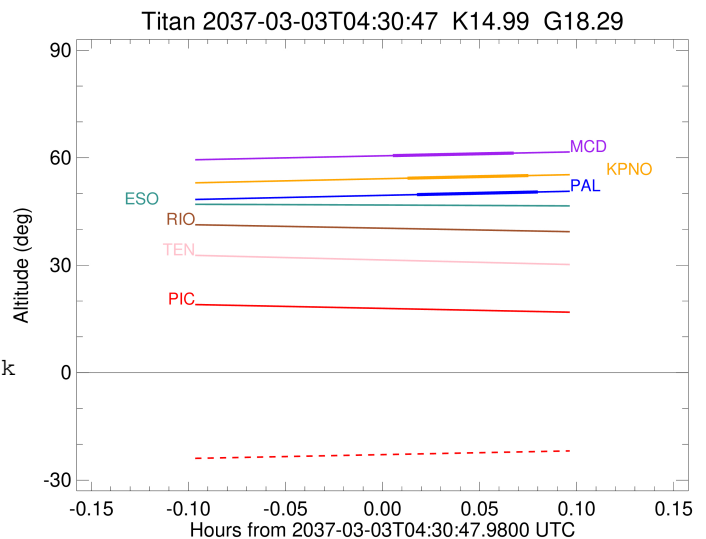
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2037-03-03T04:31:51.727	49.70	-35.26	2575.1	34.56	34.58
Titan	E	2037-03-03T04:35:36.748	50.44	-36.01	2575.2	-15.55	-15.55



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2037-03-03T04:33:26.430
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       : 615345874373283584
2Mass ID (if available) : 10024629+1344420
ICRS Star Coord at Epoch: 10h 02m 46.26689s +13:44:41.73992s
RUWE (>1.4 is poor) : 0.98
K magnitude          : 14.991
G magnitude          : 18.288
RP magnitude         : 17.319
BP magnitude         : 19.302
DUPflag             : 0
Distance (au)        : 8.272
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -22.25
Sun-Target sep (deg) : 165.42
Sun-Moon sep (deg)   : 32.09
B (ring opening deg) : -11.29
PA of pole (deg)     : -6.25
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.059
C/A sky separation (km) : 355.0
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	2037-03-03T04:31:33.466	54.28	-39.85	2575.1	32.76	32.78
Titan	E	2037-03-03T04:35:19.379	55.02	-40.60	2575.1	-17.29	-17.30

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target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2037-03-03T04:32:58.520
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        : 615345874373283584
2Mass ID (if available) : 10024629+1344420
ICRS Star Coord at Epoch: 10h 02m 46.26689s +13:44:41.73992s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 14.991
G magnitude           : 18.288
RP magnitude          : 17.319
BP magnitude          : 19.302
DUPflag              : 0
Distance (au)         : 8.272
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -22.25
Sun-Target sep (deg) : 165.42
Sun-Moon sep (deg)   : 32.03
B (ring opening deg) : -11.29
PA of pole (deg)     : -6.25
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.058
C/A sky separation (km) : 347.1
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	2037-03-03T04:31:05.625	60.58	-46.25	2575.1	32.54	32.55
Titan	E	2037-03-03T04:34:51.393	61.28	-46.98	2575.1	-17.42	-17.43

