

target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2027-01-17T05:16:35.320  
 Event type : Pgt  
 : Titan occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 2544199022533680640  
 2Mass ID (if available) : 00355272+0117021

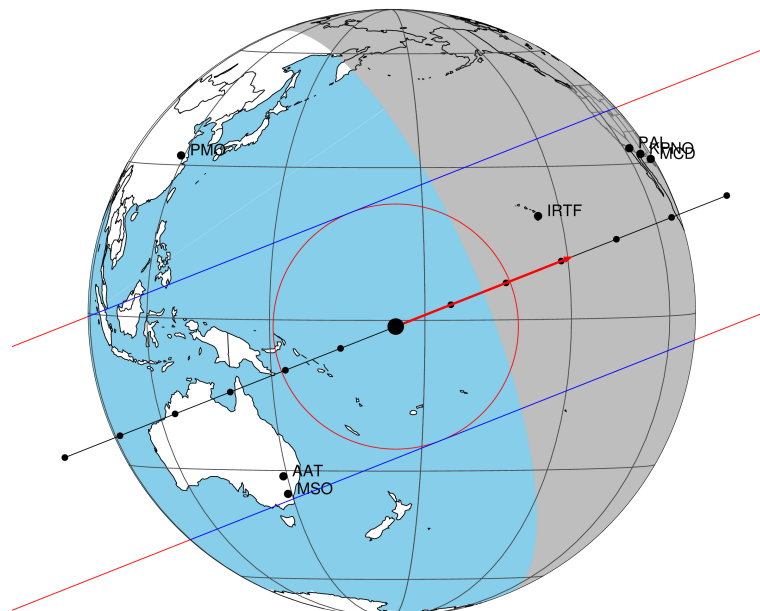
ICRS Star Coord at Epoch: 00h 35m 52.75277s +01:17:02.67516s  
 RUWE (>1.4 is poor) : 1.03  
 K magnitude : 12.206  
 G magnitude : 13.665  
 RP magnitude : 13.161  
 BP magnitude : 14.003  
 DUPflag : 0  
 Distance (au) : 9.657  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 20.76  
 Sun-Target sep (deg) : 72.29  
 Sun-Moon sep (deg) : 35.61  
 B (ring opening deg) : -6.94  
 PA of pole (deg) : 3.36  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.043  
 C/A sky separation (km) : 303.6  
 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

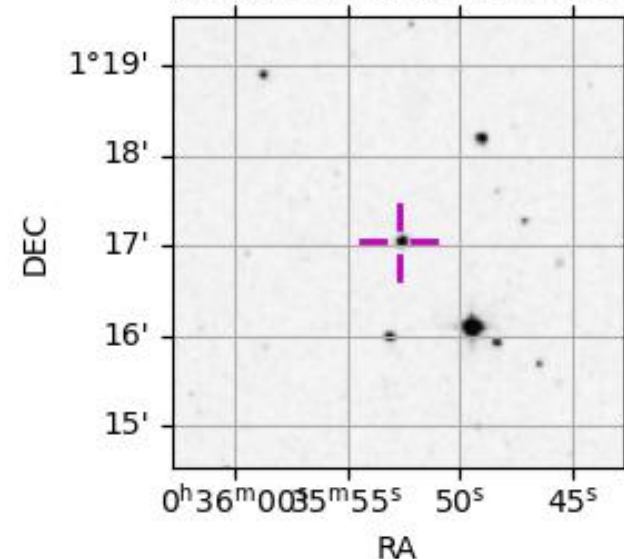
Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	JAN 17 05:19 - JAN 17 05:22	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	JAN 17 05:19 - JAN 17 05:23	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	JAN 17 05:19 - JAN 17 05:23	Pie
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+ +	JAN 17 05:17 - JAN 17 05:21	Pie
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

Titan 2027-01-17T05:16:35 K12.21 G13.67 dots 60.0 sec  
 Pgt



2027-01-17T05:16:35.3200 α: 00 35 52.7528 δ: +01 17 02.675 C/A 0.043" PA 158.38 deg v\_sky +20.76 km/s D 09.66 AU  
 Credit: Styled after SORA/Lucky Star

2544199022533680640



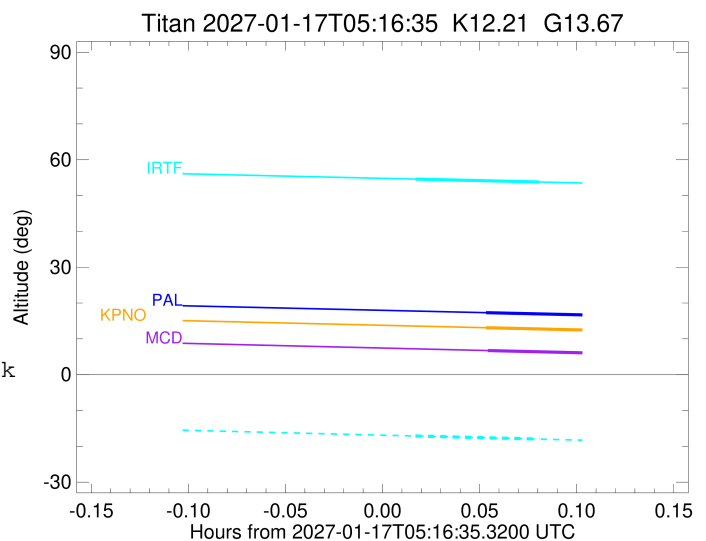
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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2027-01-17T05:21:21.710
Event type           : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code        : PAL
Location             : Palomar Mt (200")
Latitude (deg)       : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)        : 1.706
Gaia source ID       : 2544199022533680640
2Mass ID (if available) : 00355272+0117021
ICRS Star Coord at Epoch: 00h 35m 52.75277s +01:17:02.67516s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 12.206
G magnitude           : 13.665
RP magnitude         : 13.161
BP magnitude         : 14.003
DUPflag              : 0
Distance (au)        : 9.657
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 20.76
Sun-Target sep (deg) : 72.29
Sun-Moon sep (deg)  : 35.02
B (ring opening deg) : -6.94
PA of pole (deg)    : 3.36
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (" ) : 0.236
C/A sky separation (km) : 1654.3
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	2027-01-17T05:19:46.115	17.31	-53.02	2575.2	64.15	64.16
Titan	E	2027-01-17T05:22:57.284	16.65	-53.67	2575.2	14.79	14.80



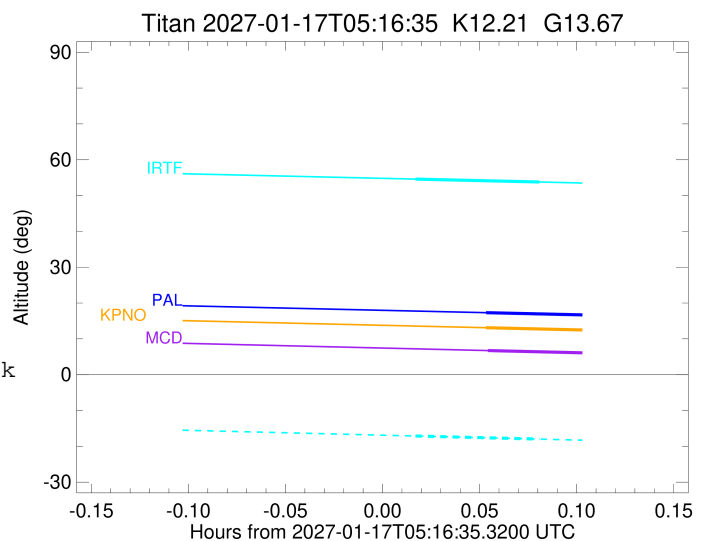
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2027-01-17T05:21:29.560
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        : 2544199022533680640
2Mass ID (if available) : 00355272+0117021
ICRS Star Coord at Epoch: 00h 35m 52.75277s +01:17:02.67516s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 12.206
G magnitude           : 13.665
RP magnitude          : 13.161
BP magnitude          : 14.003
DUPflag              : 0
Distance (au)         : 9.657
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 20.76
Sun-Target sep (deg) : 72.29
Sun-Moon sep (deg)   : 34.96
B (ring opening deg) : -6.94
PA of pole (deg)     : 3.36
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.209
C/A sky separation (km) : 1461.8
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	2027-01-17T05:19:47.020	13.11	-57.64	2575.1	58.91	58.93
Titan	E	2027-01-17T05:23:12.072	12.38	-58.35	2575.2	9.49	9.49



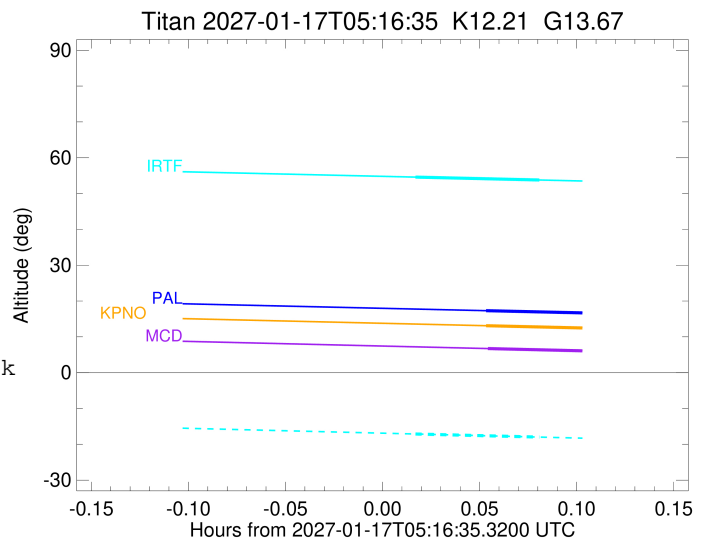
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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2027-01-17T05:21:36.720
Event type           : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code        : MCD
Location             : McDonald Obs. 2.7m
Latitude (deg)       : 30.67158
E. Longitude (deg)   : 255.97844
Altitude (km)        : 2.075
Gaia source ID       : 2544199022533680640
2Mass ID (if available) : 00355272+0117021
ICRS Star Coord at Epoch: 00h 35m 52.75277s +01:17:02.67516s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 12.206
G magnitude          : 13.665
RP magnitude         : 13.161
BP magnitude         : 14.003
DUPflag             : 0
Distance (au)        : 9.657
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 20.76
Sun-Target sep (deg) : 72.29
Sun-Moon sep (deg)   : 34.89
B (ring opening deg) : -6.94
PA of pole (deg)     : 3.36
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.184
C/A sky separation (km): 1289.7
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

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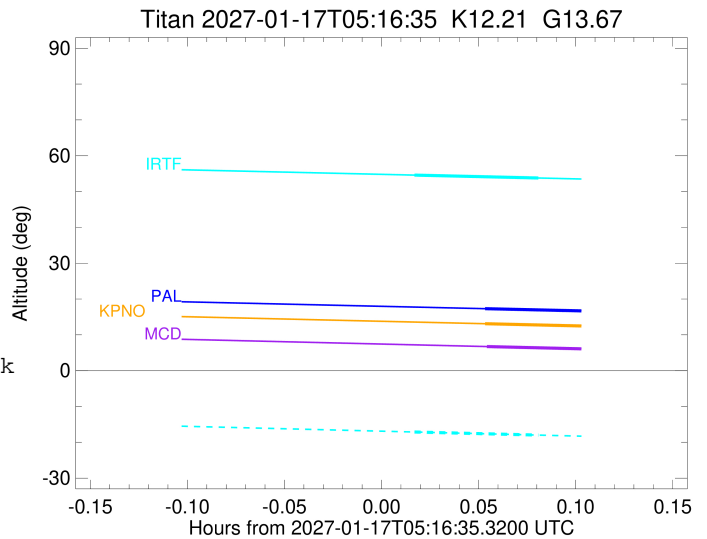
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2027-01-17T05:19:49.153	6.73	-64.25	2575.1	54.44	54.45
Titan	E	2027-01-17T05:23:24.247	5.96	-64.99	2575.2	5.04	5.04



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target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2027-01-17T05:19:32.030
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       : 2544199022533680640
2Mass ID (if available) : 00355272+0117021
ICRS Star Coord at Epoch: 00h 35m 52.75277s +01:17:02.67516s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 12.206
G magnitude          : 13.665
RP magnitude         : 13.161
BP magnitude         : 14.003
DUPflag             : 0
Distance (au)        : 9.657
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 20.76
Sun-Target sep (deg) : 72.29
Sun-Moon sep (deg)   : 35.61
B (ring opening deg) : -6.94
PA of pole (deg)     : 3.36
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.147
C/A sky separation (km): 1029.3
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	2027-01-17T05:17:36.408	54.58	-17.12	2575.1	48.42	48.43
Titan	E	2027-01-17T05:21:27.618	53.77	-17.99	2575.2	-1.76	-1.76