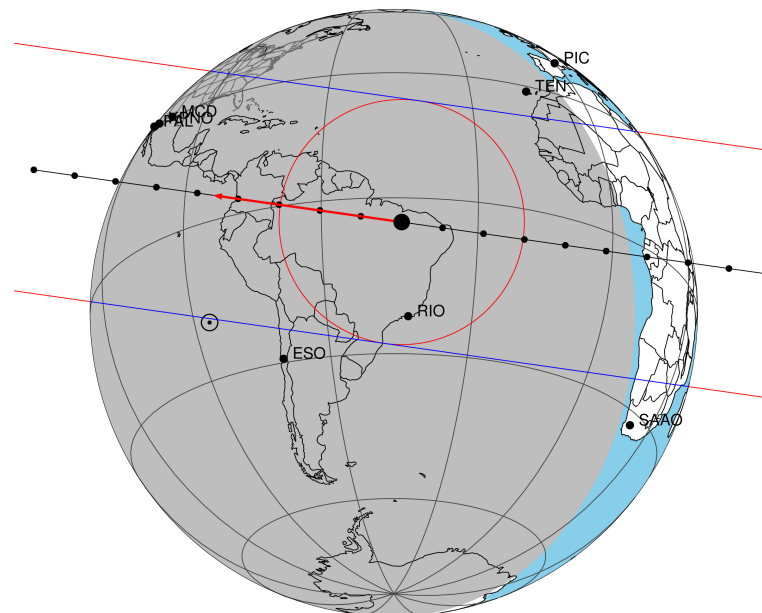


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-05-17T05:40:56.810
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4090699785283269120
 2Mass ID (if available) : 18125804-2218018

ICRS Star Coord at Epoch: 18h 12m 58.05549s -22:18:01.81399s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 12.503
 G magnitude : 17.707
 RP magnitude : 16.300
 BP magnitude : 19.009
 DUPflag : 0
 Distance (au) : 9.224
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -14.45
 Sun-Target sep (deg) : 142.61
 Sun-Moon sep (deg) : 58.79
 B (ring opening deg) : 26.08
 PA of pole (deg) : 5.90
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.288
 C/A sky separation (km) : 1928.1
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

Titan 2047-05-17T05:40:56 K12.50 G17.71 dots 60.0 sec
 Pgt

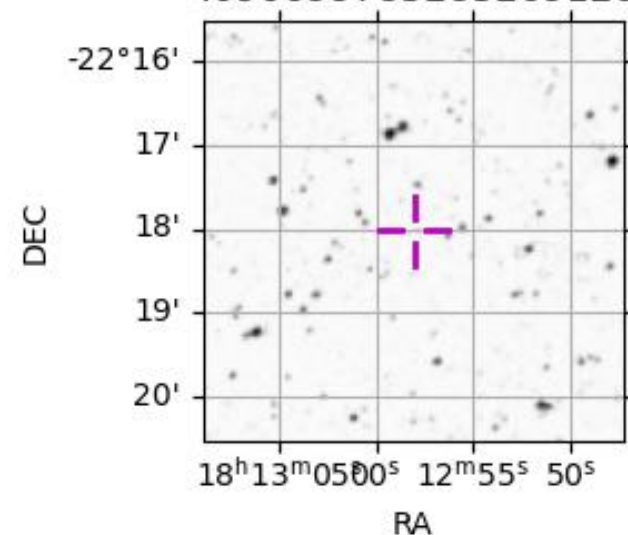


2047-05-17T05:40:56.8100 α: 18 12 58.0555 δ: -22 18 01.814 C/A 0.286" PA 8.08 deg v_sky -14.45 km/s D 09.22 AU
 Credit: Styled after SORA/Lucky Star

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			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	MAY 17 05:44 - MAY 17 05:49	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	MAY 17 05:44 - MAY 17 05:49	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	+ +	MAY 17 05:38 - MAY 17 05:42	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

4090699785283269120



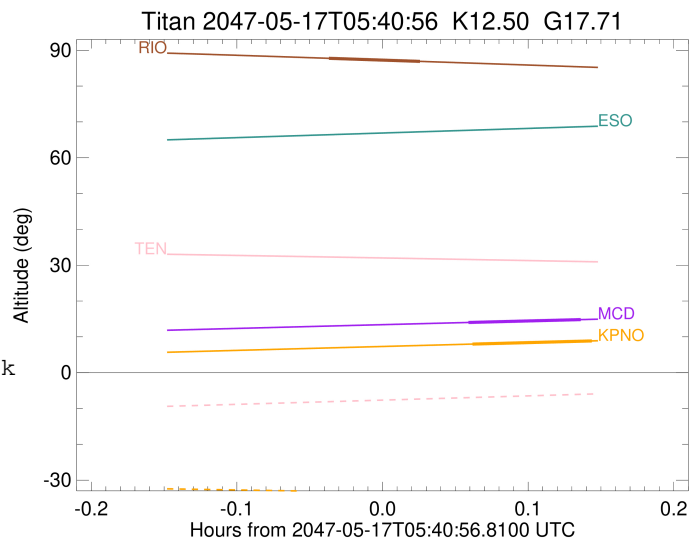
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-05-17T05:47:07.040
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        : 4090699785283269120
2Mass ID (if available) : 18125804-2218018
ICRS Star Coord at Epoch: 18h 12m 58.05549s -22:18:01.81399s
RUWE (>1.4 is poor)  : 0.99
K magnitude           : 12.503
G magnitude           : 17.707
RP magnitude          : 16.300
BP magnitude          : 19.009
DUPflag              : 0
Distance (au)         : 9.224
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -14.45
Sun-Target sep (deg)  : 142.61
Sun-Moon sep (deg)    : 59.23
B (ring opening deg)  : 26.08
PA of pole (deg)      : 5.90
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.207
C/A sky separation (km) : 1386.0
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	2047-05-17T05:44:38.393	7.97	-33.75	2575.1	30.27	30.28
Titan	E	2047-05-17T05:49:35.684	8.86	-34.23	2575.1	27.54	27.56



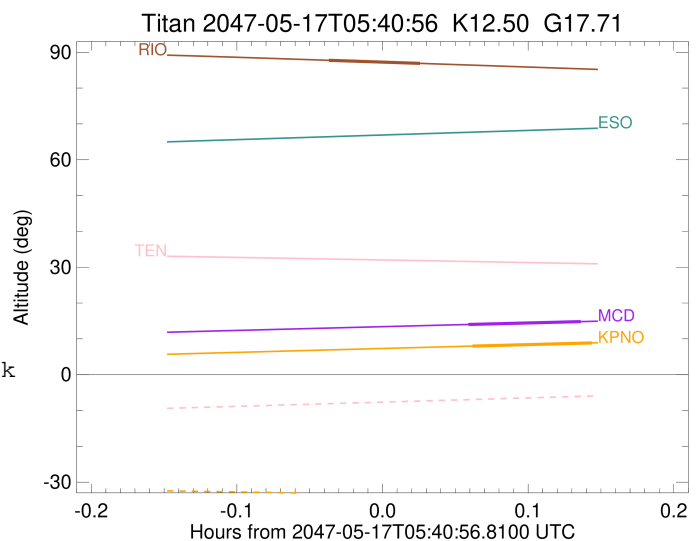
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-05-17T05:46:48.250
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       : 4090699785283269120
2Mass ID (if available) : 18125804-2218018
ICRS Star Coord at Epoch: 18h 12m 58.05549s -22:18:01.81399s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 12.503
G magnitude           : 17.707
RP magnitude          : 16.300
BP magnitude          : 19.009
DUPflag              : 0
Distance (au)         : 9.224
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -14.45
Sun-Target sep (deg) : 142.61
Sun-Moon sep (deg)   : 59.29
B (ring opening deg) : 26.08
PA of pole (deg)     : 5.90
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.233
C/A sky separation (km) : 1559.7
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	2047-05-17T05:44:28.373	14.01	-37.57	2575.1	34.30	34.31
Titan	E	2047-05-17T05:49:08.123	14.81	-37.91	2575.1	31.60	31.62



target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-05-17T05:40:36.650
 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 : 4090699785283269120
 2Mass ID (if available) : 18125804-2218018
 ICRS Star Coord at Epoch: 18h 12m 58.05549s -22:18:01.81399s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 12.503
 G magnitude : 17.707
 RP magnitude : 16.300
 BP magnitude : 19.009
 DUPflag : 0
 Distance (au) : 9.224
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -14.45
 Sun-Target sep (deg) : 142.61
 Sun-Moon sep (deg) : 59.56
 B (ring opening deg) : 26.08
 PA of pole (deg) : 5.90
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.290
 C/A sky separation (km) : 1943.2
 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	2047-05-17T05:38:43.109	87.75	-50.43	2575.1	-41.06	-41.08
Titan	E	2047-05-17T05:42:30.213	86.88	-49.56	2575.1	-44.26	-44.28

