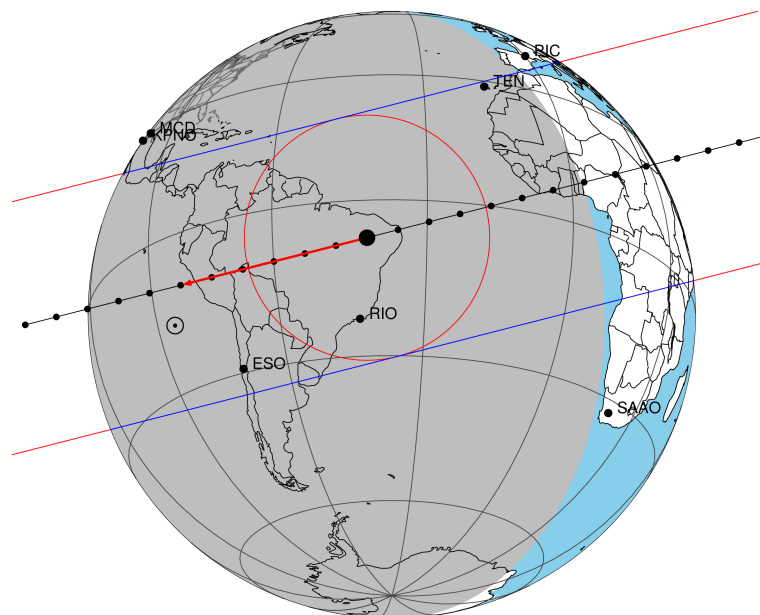


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2047-05-09T05:36:42.480
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4090691779488176640
 2Mass ID (if available) : 18145814-2217518

ICRS Star Coord at Epoch: 18h 14m 58.12645s -22:17:52.05789s
 RUWE (>1.4 is poor) : 2.37
 K magnitude : 13.823
 G magnitude : 18.066
 RP magnitude : 16.364
 BP magnitude : 18.287
 DUPflag : 0
 Distance (au) : 9.314
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -11.21
 Sun-Target sep (deg) : 134.42
 Sun-Moon sep (deg) : 53.46
 B (ring opening deg) : 26.03
 PA of pole (deg) : 5.93
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.248
 C/A sky separation (km) : 1675.0
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

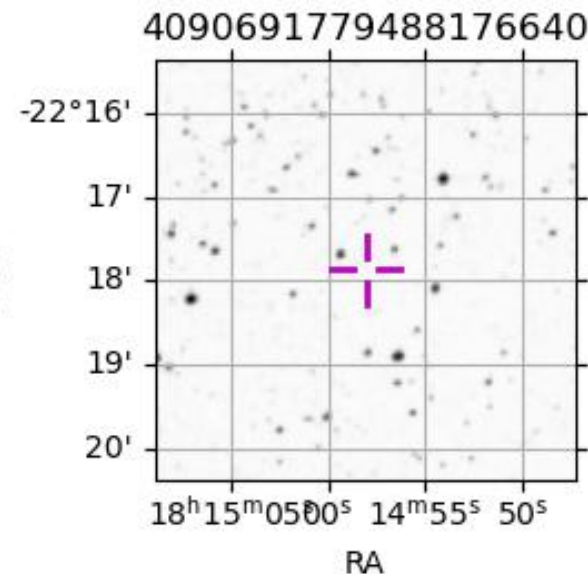
Titan 2047-05-09T05:36:42 K13.82 G18.07 dots 60.0 sec
 Pgt



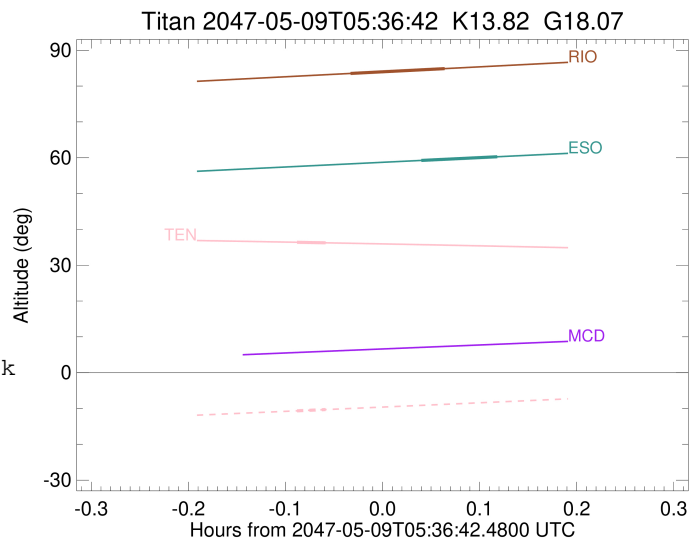
2047-05-09T05:36:42.4800 cc: 18 14 58.1264 d: -22 17 52.058 C/A 0.252" PA 345.68 deg v_sky -11.21 km/s D 09.31 AU
 Credit: Styled after SORA/Lucky Star

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			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5	+ +	MAY 09 05:31 - MAY 09 05:33	Pie
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 09 05:34 - MAY 09 05:40	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	MAY 09 05:39 - MAY 09 05:43	Pie
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 : 2047-05-09T05:32:18.280
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Observer code : TEN
 Location : Teide Obs./Tenerife
 Latitude (deg) : 28.30050
 E. Longitude (deg) : 343.48909
 Altitude (km) : 2.395
 Gaia source ID : 4090691779488176640
 2Mass ID (if available) : 18145814-2217518
 ICRS Star Coord at Epoch: 18h 14m 58.12645s -22:17:52.05789s
 RUWE (>1.4 is poor) : 2.37
 K magnitude : 13.823
 G magnitude : 18.066
 RP magnitude : 16.364
 BP magnitude : 18.287
 DUPflag : 0
 Distance (au) : 9.314
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -11.21
 Sun-Target sep (deg) : 134.42
 Sun-Moon sep (deg) : 54.19
 B (ring opening deg) : 26.03
 PA of pole (deg) : 5.93
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.370
 C/A sky separation (km) : 2500.8
 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	2047-05-09T05:31:25.181	36.39	-10.65	2575.1	48.65	48.66
Titan	E	2047-05-09T05:33:11.368	36.24	-10.30	2575.0	63.39	63.40

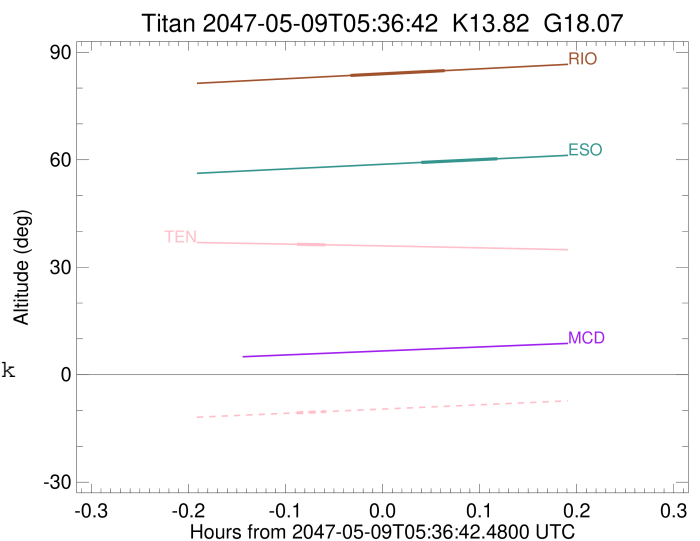
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2047-05-09T05:37:38.300
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       : 4090691779488176640
2Mass ID (if available) : 18145814-2217518
ICRS Star Coord at Epoch: 18h 14m 58.12645s -22:17:52.05789s
RUWE (>1.4 is poor) : 2.37
K magnitude           : 13.823
G magnitude           : 18.066
RP magnitude          : 16.364
BP magnitude          : 18.287
DUPflag              : 0
Distance (au)         : 9.314
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -11.21
Sun-Target sep (deg) : 134.42
Sun-Moon sep (deg)   : 54.22
B (ring opening deg) : 26.03
PA of pole (deg)     : 5.93
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.234
C/A sky separation (km) : 1577.3
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	2047-05-09T05:34:43.264	83.52	-50.90	2575.1	-49.35	-49.36
Titan	E	2047-05-09T05:40:33.275	84.86	-49.55	2575.2	-16.09	-16.09



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2047-05-09T05:41:27.510
Event type            : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code         : ESO
Location              : European Southern Obs. (3.6m)
Latitude (deg)       : -29.26097
E. Longitude (deg)   : 289.26831
Altitude (km)        : 2.400
Gaia source ID       : 4090691779488176640
2Mass ID (if available) : 18145814-2217518
ICRS Star Coord at Epoch: 18h 14m 58.12645s -22:17:52.05789s
RUWE (>1.4 is poor) : 2.37
K magnitude           : 13.823
G magnitude           : 18.066
RP magnitude          : 16.364
BP magnitude          : 18.287
DUPflag              : 0
Distance (au)        : 9.314
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -11.21
Sun-Target sep (deg) : 134.42
Sun-Moon sep (deg)   : 53.86
B (ring opening deg) : 26.03
PA of pole (deg)     : 5.93
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.292
C/A sky separation (km) : 1971.8
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	2047-05-09T05:39:04.361	59.23	-71.96	2575.1	-57.73	-57.74
Titan	E	2047-05-09T05:43:50.592	60.27	-71.12	2575.1	-26.48	-26.49

