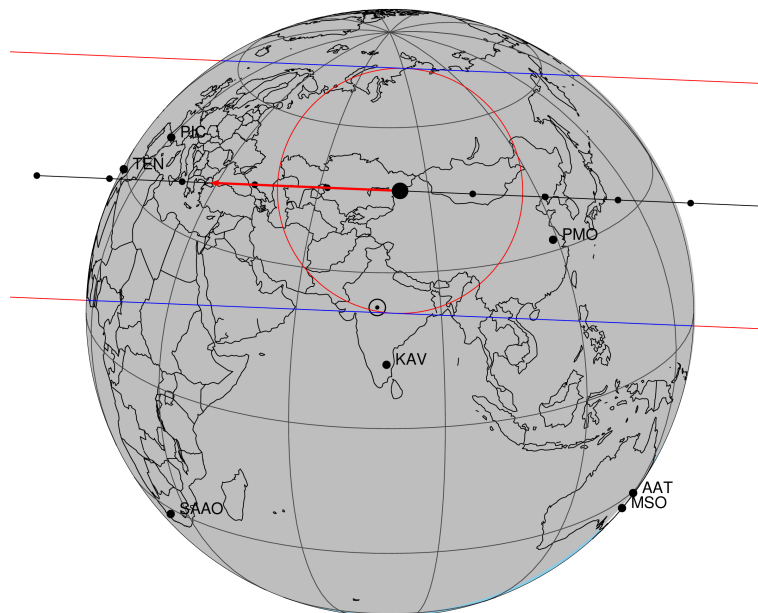


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2032-12-22T18:51:19.860
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3376977929802701440
 2Mass ID (if available) : 06144754+2226465

ICRS Star Coord at Epoch: 06h 14m 47.54957s +22:26:46.41733s
 RUWE (>1.4 is poor) : 3.00
 K magnitude : 12.768
 G magnitude : 14.961
 RP magnitude : 14.279
 BP magnitude : 15.429
 DUPflag : 0
 Distance (au) : 8.025
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -25.44
 Sun-Target sep (deg) : 177.43
 Sun-Moon sep (deg) : 65.17
 B (ring opening deg) : -26.18
 PA of pole (deg) : -5.94
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.440
 C/A sky separation (km) : 2560.8
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk

Titan 2032-12-22T18:51:19 K12.77 G14.96 dots 60.0 sec
 Pgt



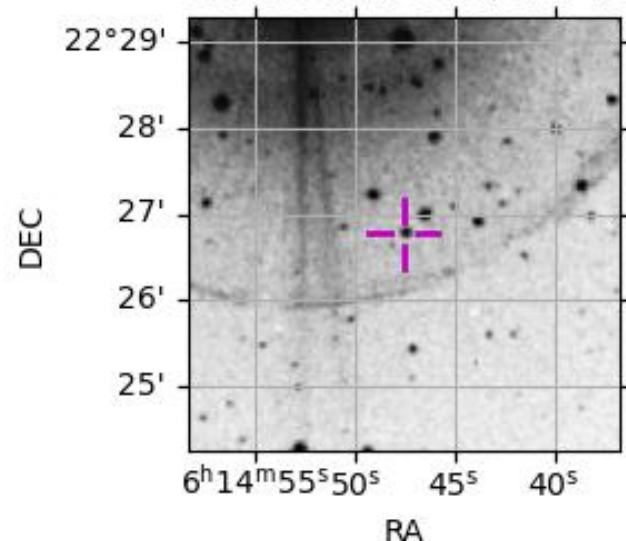
2032-12-22T18:51:19.8600 α: 06 14 47.5496 δ: +22 26 46.417 C/A 0.441" PA 2.42 deg v_sky -25.44 km/s D 08.03 AU

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	+ +	DEC 22 18:52 - DEC 22 18:56	Pie
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	DEC 22 18:47 - DEC 22 18:50	Pie
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	+ +	DEC 22 18:53 - DEC 22 18:56	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			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

3376977929802701440

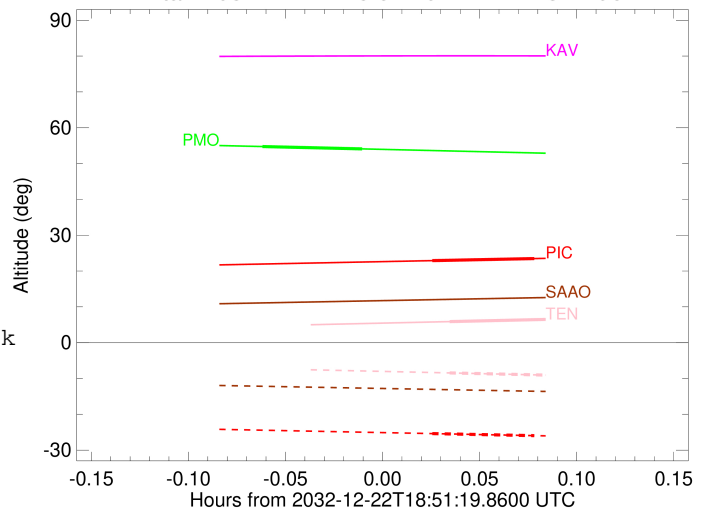


```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2032-12-22T18:54:26.600
Event type            : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code         : PIC
Location              : Pic du Midi
Latitude (deg)        : 42.93656
E. Longitude (deg)    : 0.14231
Altitude (km)         : 2.890
Gaia source ID        : 3376977929802701440
2Mass ID (if available) : 06144754+2226465
ICRS Star Coord at Epoch: 06h 14m 47.54957s +22:26:46.41733s
RUWE (>1.4 is poor) : 3.00
K magnitude           : 12.768
G magnitude           : 14.961
RP magnitude          : 14.279
BP magnitude          : 15.429
DUPflag              : 0
Distance (au)         : 8.025
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -25.44
Sun-Target sep (deg)  : 177.43
Sun-Moon sep (deg)    : 65.77
B (ring opening deg) : -26.18
PA of pole (deg)      : -5.94
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.149
C/A sky separation (km) : 869.5
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

```

Titan 2032-12-22T18:51:19 K12.77 G14.96



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	2032-12-22T18:52:51.609	22.90	-25.38	2575.1	25.23	25.24
Titan	E	2032-12-22T18:56:01.579	23.47	-25.95	2575.2	9.95	9.96

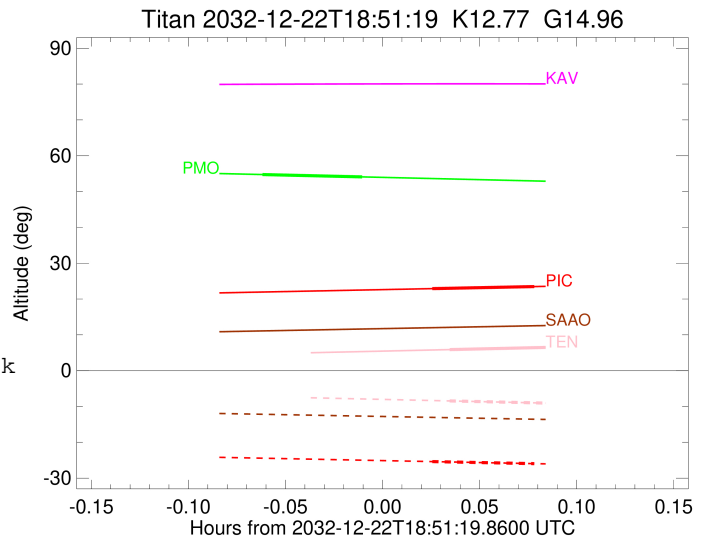
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2032-12-22T18:49:09.600
Event type            : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code         : PMO
Location              : Purple Mtn Obs. Nanking
Latitude (deg)       : 32.06667
E. Longitude (deg)   : 118.82089
Altitude (km)        : 0.364
Gaia source ID       : 3376977929802701440
2Mass ID (if available) : 06144754+2226465
ICRS Star Coord at Epoch: 06h 14m 47.54957s +22:26:46.41733s
RUWE (>1.4 is poor) : 3.00
K magnitude           : 12.768
G magnitude           : 14.961
RP magnitude          : 14.279
BP magnitude          : 15.429
DUPflag              : 0
Distance (au)        : 8.025
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -25.44
Sun-Target sep (deg) : 177.43
Sun-Moon sep (deg)   : 65.64
B (ring opening deg) : -26.18
PA of pole (deg)     : -5.94
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.155
C/A sky separation (km) : 904.5
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	2032-12-22T18:47:35.956	54.74	-52.95	2575.1	-11.15	-11.16
Titan	E	2032-12-22T18:50:43.254	54.08	-52.29	2575.1	-25.51	-25.52



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch             : 2032-12-22T18:55:05.110
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        : 3376977929802701440
2Mass ID (if available) : 06144754+2226465
ICRS Star Coord at Epoch: 06h 14m 47.54957s +22:26:46.41733s
RUWE (>1.4 is poor) : 3.00
K magnitude           : 12.768
G magnitude           : 14.961
RP magnitude          : 14.279
BP magnitude          : 15.429
DUPflag              : 0
Distance (au)         : 8.025
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -25.44
Sun-Target sep (deg) : 177.43
Sun-Moon sep (deg)   : 65.59
B (ring opening deg) : -26.18
PA of pole (deg)     : -5.94
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.025
C/A sky separation (km) : 147.9
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	2032-12-22T18:53:23.953	5.88	-8.44	2575.1	10.75	10.76
Titan	E	2032-12-22T18:56:46.250	6.57	-9.13	2575.1	-4.85	-4.85

