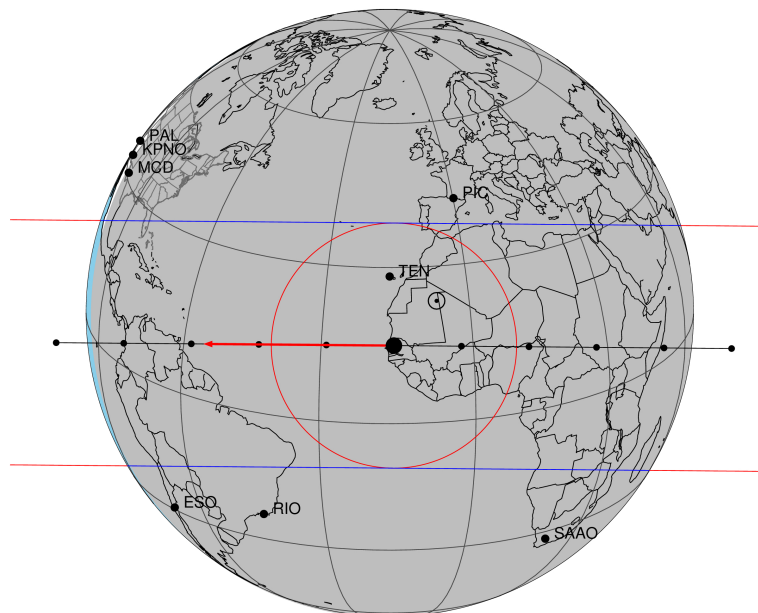


target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2031-12-20T00:24:27.580  
 Event type : Pgt  
 : Titan occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 3414910733065320832  
 2Mass ID (if available) : 05101826+2123305

Titan 2031-12-20T00:24:27 K14.77 G17.56 dots 60.0 sec  
 Pgt

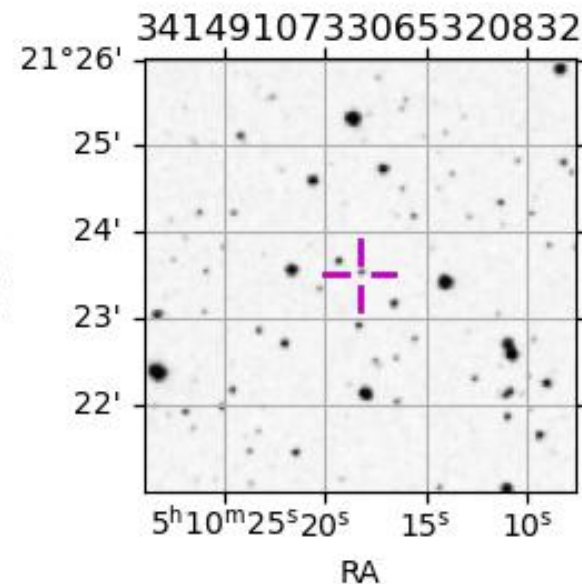
ICRS Star Coord at Epoch: 05h 10m 18.27307s +21:23:30.43654s  
 RUWE (>1.4 is poor) : 0.96  
 K magnitude : 14.765  
 G magnitude : 17.562  
 RP magnitude : 16.732  
 BP magnitude : 18.330  
 DUPflag : 0  
 Distance (au) : 8.049  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -23.63  
 Sun-Target sep (deg) : 170.85  
 Sun-Moon sep (deg) : 93.73  
 B (ring opening deg) : -26.50  
 PA of pole (deg) : -4.53  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.120  
 C/A sky separation (km) : 702.7  
 NAIF SPICE kernels : RAJobs\_U111+rgf16.spk



2031-12-20T00:24:27.5800 α: 05 10 18.2731 δ: +21 23 30.437 C/A 0.118" PA 180.50 deg v\_sky -23.63 km/s D 08.05 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	+ +	DEC 20 00:22 - DEC 20 00:25	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



target : Titan  
 target radius (km) : 2575.15  
 C/A epoch : 2031-12-20T00:24:28.050  
 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 : 3414910733065320832  
 2Mass ID (if available) : 05101826+2123305  
 ICRS Star Coord at Epoch: 05h 10m 18.27307s +21:23:30.43654s  
 RUWE (>1.4 is poor) : 0.96  
 K magnitude : 14.765  
 G magnitude : 17.562  
 RP magnitude : 16.732  
 BP magnitude : 18.330  
 DUPflag : 0  
 Distance (au) : 8.049  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -23.63  
 Sun-Target sep (deg) : 170.85  
 Sun-Moon sep (deg) : 94.70  
 B (ring opening deg) : -26.50  
 PA of pole (deg) : -4.53  
 Pole direction: RA (deg): 39.48270  
 Dec (deg): 83.42790  
 C/A sky separation (") : 0.248  
 C/A sky separation (km) : 1446.9  
 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	2031-12-20T00:22:59.456	83.29	-79.80	2575.1	34.44	34.46
Titan	E	2031-12-20T00:25:56.642	83.29	-80.38	2575.1	25.87	25.88

