

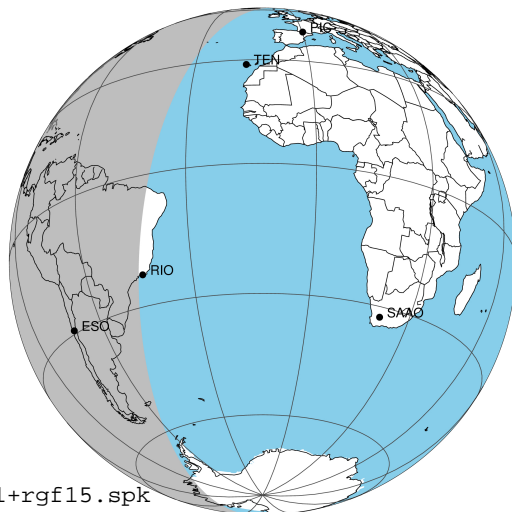
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-02-13T08:48:56.500  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4117493960292885120  
 2Mass ID (if available) : 17303773-2243429

Jupiter 2031-02-13T08:48:56 K8.54 G14.35 Pgt

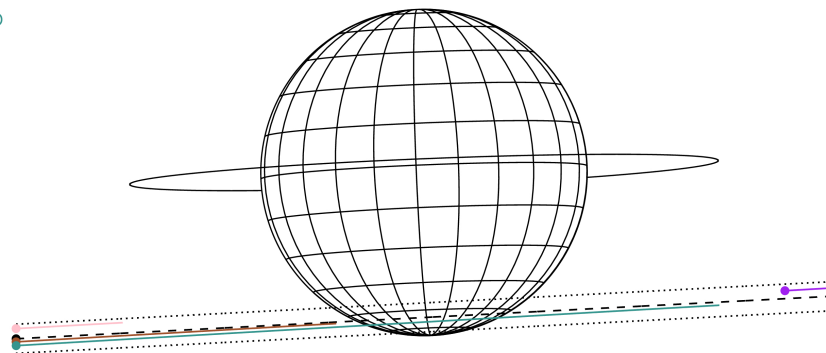
ICRS Star Coord at Epoch: 17h 30m 37.72540s -22:43:43.09405s

RUWE (>1.4 is poor) : 1.00  
 K magnitude : 8.536  
 G magnitude : 14.347  
 RP magnitude : 12.931  
 BP magnitude : 16.892  
 DUPflag : 0  
 Distance (au) : 5.732  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 27.70  
 Sun-Target sep (deg) : 60.78  
 Sun-Moon sep (deg) : 49.43  
 B (ring opening deg) : -2.67  
 PA of pole (deg) : 2.32  
 Pole direction: RA (deg): 268.05702  
 Dec (deg): 64.49651  
 C/A sky separation (") : 15.257  
 C/A sky separation (km) : 63431.2  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2031-02-13T08:48:56 K8.54 G14.35  
 Pgt



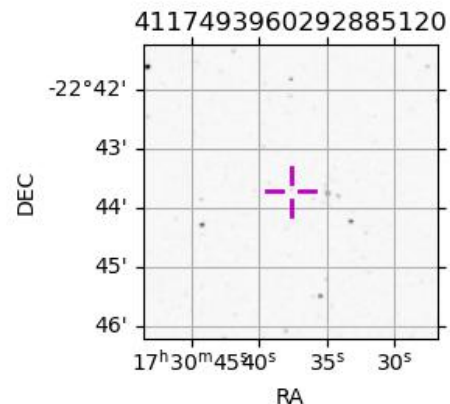
Earth  
 MCD  
 TEN  
 RIO  
 ESO



2031-02-13T08:48:56.5000 α: 17 30 37.7254 δ: -22 43 43.094 C/A \*\*\*\*\* PA 2.99 deg v\_sky +27.70 km/s D 05.73 AU  
 Credit: Styled after SORA/Lucky Star

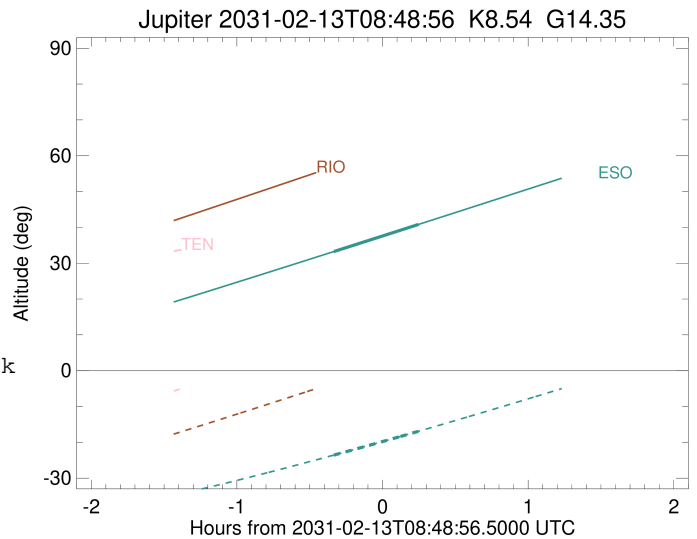
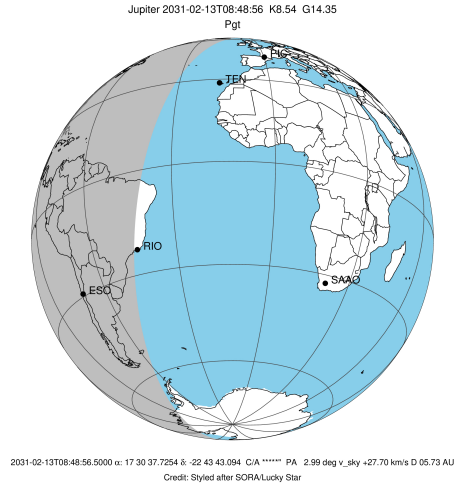
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
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			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			Pnn
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	FEB 13 08:28 - FEB 13 09:03	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



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-13T08:46:19.680
Event type          : Pgt
                    : Jupiter 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     : 4117493960292885120
2Mass ID (if available) : 17303773-2243429
ICRS Star Coord at Epoch: 17h 30m 37.72540s -22:43:43.09405s
RUWE (>1.4 is poor) : 1.00
K magnitude         : 8.536
G magnitude         : 14.347
RP magnitude        : 12.931
BP magnitude        : 16.892
DUPflag            : 0
Distance (au)      : 5.732
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 27.70
Sun-Target sep (deg) : 60.78
Sun-Moon sep (deg)  : 49.41
B (ring opening deg) : -2.67
PA of pole (deg)   : 2.32
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation (") : 15.735
C/A sky separation (km) : 65415.4
NAIF SPICE kernels : RAJobs_U111+rgf15.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
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
Jupiter	I	2031-02-13T08:28:52.307	33.24	-23.56	71483.7	-67.04	-69.54
Jupiter	E	2031-02-13T09:03:48.291	40.82	-16.91	71483.9	-65.13	-67.79