

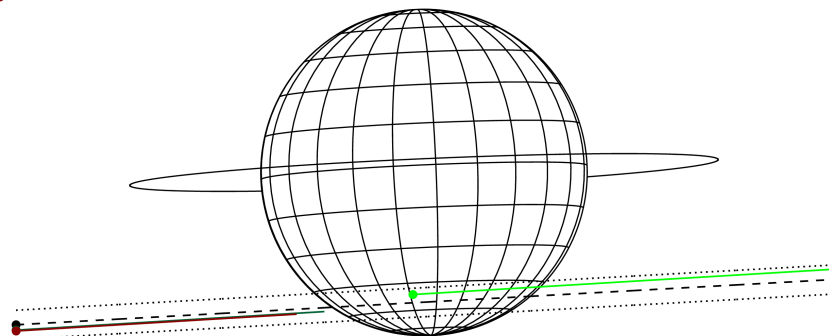
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-02-10T19:47:34.360  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4111692073588380160  
 2Mass ID (if available) : 17285060-2242217

Jupiter 2031-02-10T19:47:34 K9.70 G14.70 Pgt

ICRS Star Coord at Epoch: 17h 28m 50.59542s -22:42:21.80180s  
 RUWE (>1.4 is poor) : 1.03  
 K magnitude : 9.698  
 G magnitude : 14.695  
 RP magnitude : 13.416  
 BP magnitude : 16.549  
 DUPflag : 0  
 Distance (au) : 5.768  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 28.66  
 Sun-Target sep (deg) : 58.62  
 Sun-Moon sep (deg) : 82.82  
 B (ring opening deg) : -2.68  
 PA of pole (deg) : 2.52  
 Pole direction: RA (deg): 268.05703  
 Dec (deg): 64.49651  
 C/A sky separation (") : 13.560  
 C/A sky separation (km) : 56727.7  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



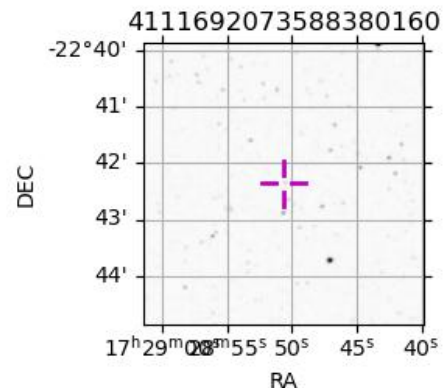
Earth  
 PMO  
 AAT  
 MSO



2031-02-10T19:47:34.3600 α: 17 28 50.5954 δ: -22 42 21.802 C/A \*\*\*\*\* PA 3.17 deg v\_sky +28.66 km/s D 05.77 AU  
 Credit: Styled after SORA/Lucky Star

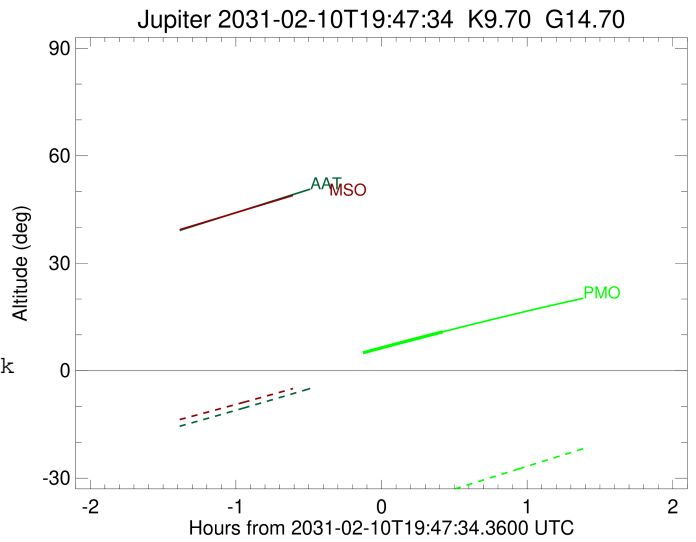
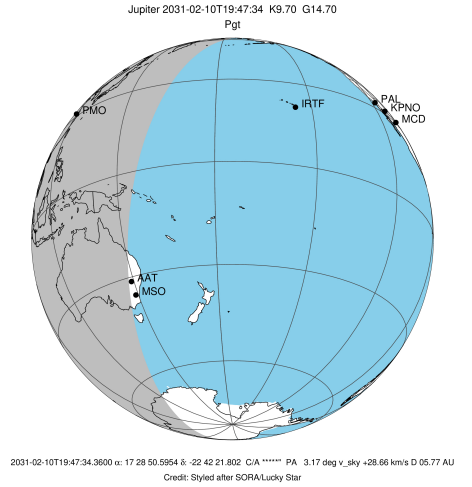
Observable events with sun below -5 deg and altitude above 5 deg

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	+	FEB 10 20:12 - FEB 10 20:12	Pne
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			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



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-02-10T19:44:43.360
Event type            : Pgt
: Jupiter 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       : 4111692073588380160
2Mass ID (if available) : 17285060-2242217
ICRS Star Coord at Epoch: 17h 28m 50.59542s -22:42:21.80180s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 9.698
G magnitude           : 14.695
RP magnitude          : 13.416
BP magnitude          : 16.549
DUPflag              : 0
Distance (au)        : 5.768
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 28.66
Sun-Target sep (deg) : 58.62
Sun-Moon sep (deg)   : 82.83
B (ring opening deg) : -2.68
PA of pole (deg)     : 2.52
Pole direction: RA (deg): 268.05703
Dec (deg): 64.49651
C/A sky separation (") : 12.686
C/A sky separation (km) : 53069.9
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	2031-02-10T19:16:45.569	0.68x	-45.82	71486.4	-48.82	-52.44
Jupiter	E	2031-02-10T20:12:44.258	10.83	-34.07	71486.7	-46.92	-50.59