

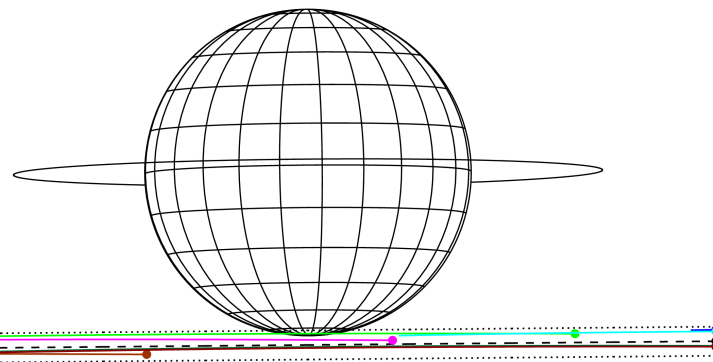
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-05-15T16:28:34.720
 Event type : Pt
 : Jupiter occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4068934093611448704
 2Mass ID (if available) : 17473992-2253560

Jupiter 2031-05-15T16:28:34 K9.62 G14.62 Pt

ICRS Star Coord at Epoch: 17h 47m 39.93377s -22:53:56.11818s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 9.618
 G magnitude : 14.623
 RP magnitude : 13.324
 BP magnitude : 16.468
 DUPflag : 0
 Distance (au) : 4.414
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -11.70
 Sun-Target sep (deg) : 147.06
 Sun-Moon sep (deg) : 81.04
 B (ring opening deg) : -2.60
 PA of pole (deg) : 0.49
 Pole direction: RA (deg): 268.05695
 Dec (deg): 64.49651
 C/A sky separation (") : 23.600
 C/A sky separation (km) : 75548.7
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



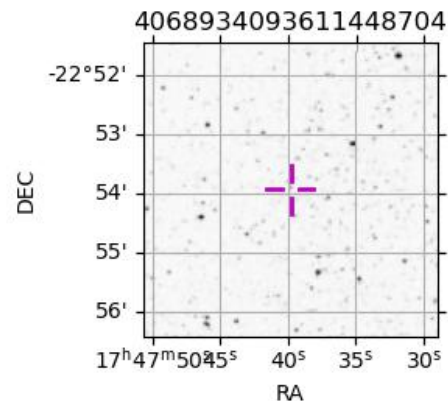
Earth
 PAL
 PMO
 IRTF
 KAV
 AAT
 SAAO
 MSO



2031-05-15T16:28:34.7200 α: 17 47 39.9338 δ: -22 53 56.118 C/A ***** PA 0.53 deg v_sky -11.70 km/s D 04.41 AU
 Credit: Styled after SORA/Lucky Star

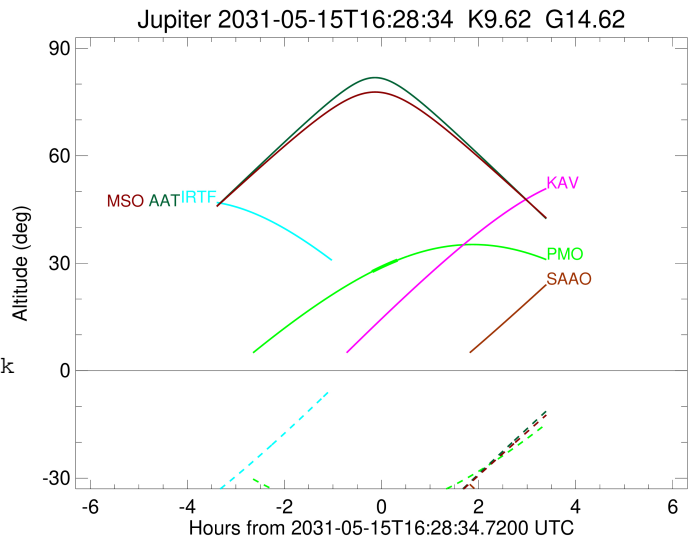
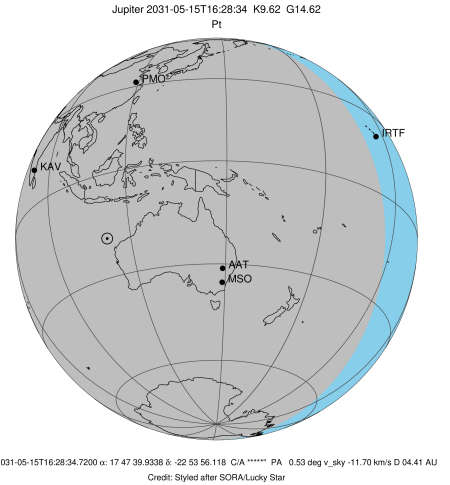
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
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	+ +	MAY 15 16:17 - MAY 15 16:48	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			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             : 2031-05-15T16:32:44.510
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: 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        : 4068934093611448704
2Mass ID (if available) : 17473992-2253560
ICRS Star Coord at Epoch: 17h 47m 39.93377s -22:53:56.11818s
RUWE (>1.4 is poor) : 0.93
K magnitude           : 9.618
G magnitude           : 14.623
RP magnitude          : 13.324
BP magnitude          : 16.468
DUPflag              : 0
Distance (au)         : 4.414
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -11.70
Sun-Target sep (deg) : 147.06
Sun-Moon sep (deg)   : 81.55
B (ring opening deg) : -2.60
PA of pole (deg)     : 0.49
Pole direction: RA (deg): 268.05694
Dec (deg): 64.49651
C/A sky separation (") : 22.051
C/A sky separation (km) : 70589.7
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	2031-05-15T16:17:11.452	27.67	-39.03	71482.9	-80.88	-81.95
Jupiter	E	2031-05-15T16:48:16.355	30.85	-37.93	71483.0	-80.29	-81.43