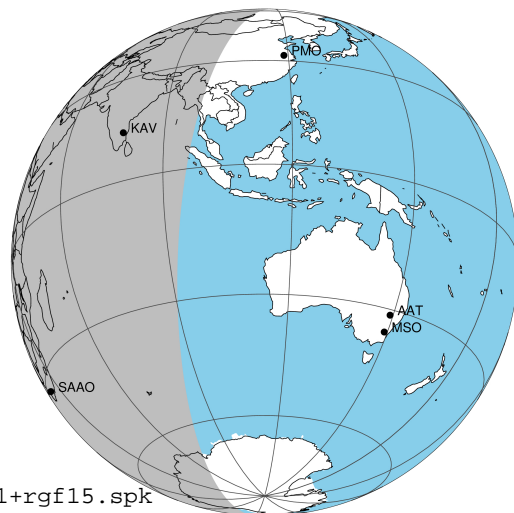


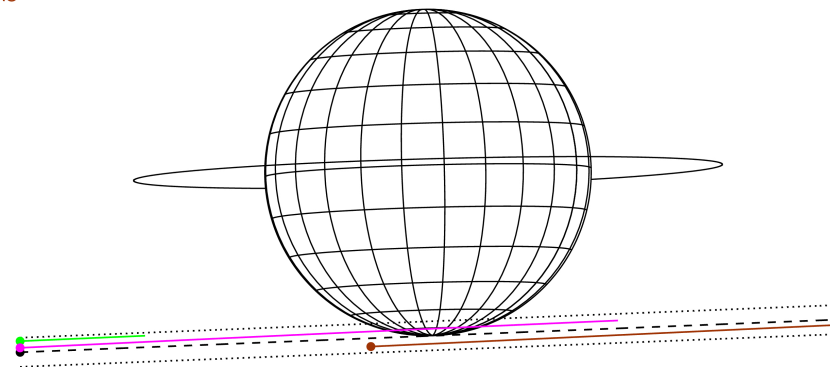
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-02-23T23:49:58.830
 Event type : Pt
 : Jupiter occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4116745364683091584
 2Mass ID (if available) : 17373100-2248081

Jupiter 2031-02-23T23:49:58 K9.64 G14.87 Pt

ICRS Star Coord at Epoch: 17h 37m 31.00524s -22:48:08.18009s
 RUWE (>1.4 is poor) : 0.97
 K magnitude : 9.638
 G magnitude : 14.870
 RP magnitude : 13.568
 BP magnitude : 16.836
 DUPflag : 0
 Distance (au) : 5.575
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 23.37
 Sun-Target sep (deg) : 69.91
 Sun-Moon sep (deg) : 100.10
 B (ring opening deg) : -2.65
 PA of pole (deg) : 1.58
 Pole direction: RA (deg): 268.05701
 Dec (deg): 64.49651
 C/A sky separation (") : 17.696
 C/A sky separation (km) : 71553.7
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



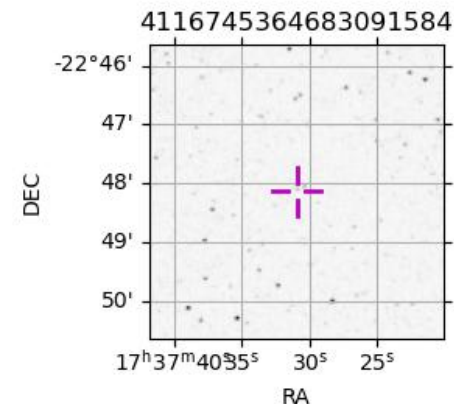
Earth
 PMO
 KAV
 SAAO



2031-02-23T23:49:58.8300 α: 17 37 31.0052 δ: -22 48 08.1800 C/A ***** PA 2.29 deg v_sky +23.37 km/s D 05.58 AU
 Credit: Styled after SORA/Lucky Star

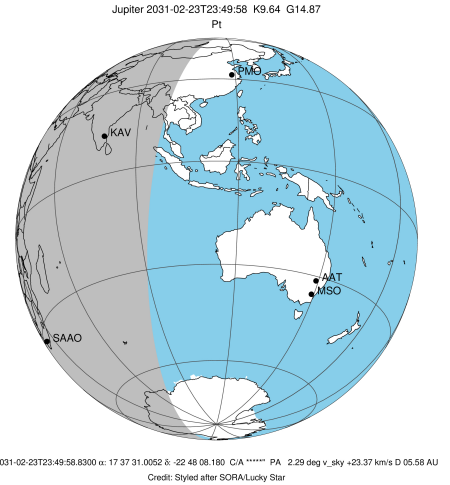
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	FEB 23 23:32 - FEB 24 00:02	Pie
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

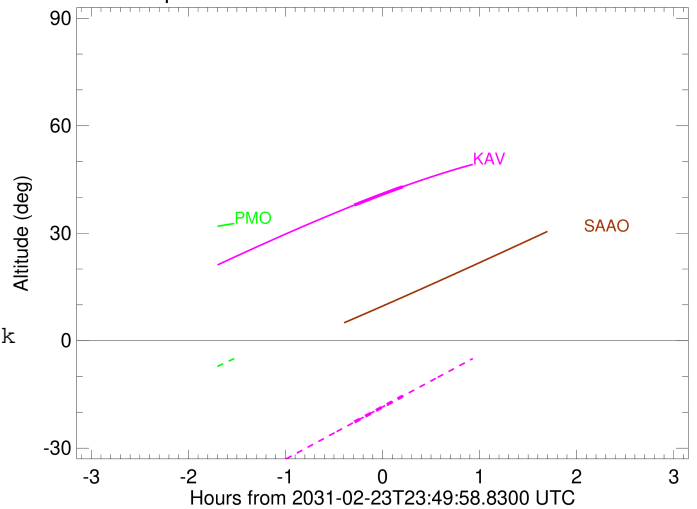


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-02-23T23:47:34.020
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: Not a ringed target
Observer code         : KAV
Location              : Kavalur Observatory
Latitude (deg)       : 12.57556
E. Longitude (deg)   : 78.83167
Altitude (km)        : 0.722
Gaia source ID       : 4116745364683091584
2Mass ID (if available) : 17373100-2248081
ICRS Star Coord at Epoch: 17h 37m 31.00524s -22:48:08.18009s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 9.638
G magnitude           : 14.870
RP magnitude         : 13.568
BP magnitude         : 16.836
DUPflag              : 0
Distance (au)        : 5.575
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 23.37
Sun-Target sep (deg) : 69.91
Sun-Moon sep (deg)   : 100.62
B (ring opening deg) : -2.65
PA of pole (deg)     : 1.58
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 16.928
C/A sky separation (km) : 68450.2
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
    
```



Jupiter 2031-02-23T23:49:58 K9.64 G14.87



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	2031-02-23T23:32:39.458	37.85	-22.72	71483.1	-74.03	-75.85
Jupiter	E	2031-02-24T00:02:29.466	42.98	-15.47	71483.2	-72.08	-74.09