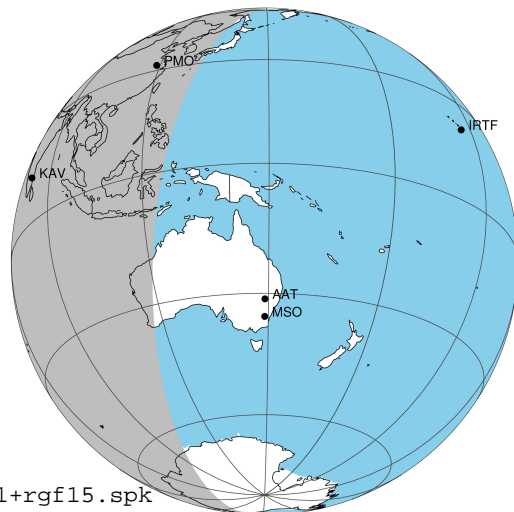


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-02-16T21:52:10.240
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4117459149518112256
 2Mass ID (if available) : 17330202-2245069

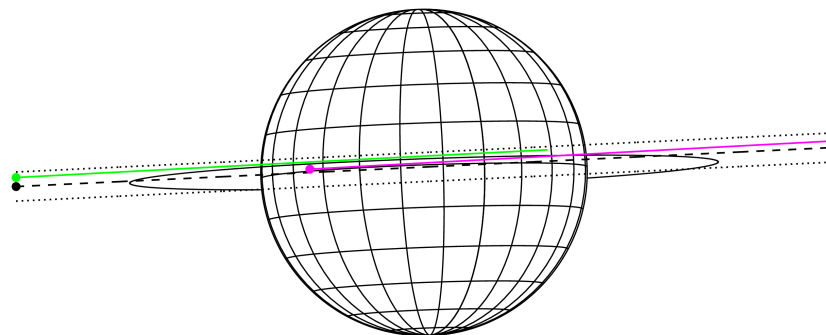
Jupiter 2031-02-16T21:52:10 K8.24 G13.92 Pgt

ICRS Star Coord at Epoch: 17h 33m 02.01535s -22:45:06.91706s
 RUWE (>1.4 is poor) : 1.08
 K magnitude : 8.241
 G magnitude : 13.917
 RP magnitude : 12.509
 BP magnitude : 16.473
 DUPflag : 0
 Distance (au) : 5.681
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 26.30
 Sun-Target sep (deg) : 63.81
 Sun-Moon sep (deg) : 1.32
 B (ring opening deg) : -2.67
 PA of pole (deg) : 2.07
 Pole direction: RA (deg): 268.05702
 Dec (deg): 64.49651
 C/A sky separation (") : 0.576
 C/A sky separation (km) : 2374.2
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



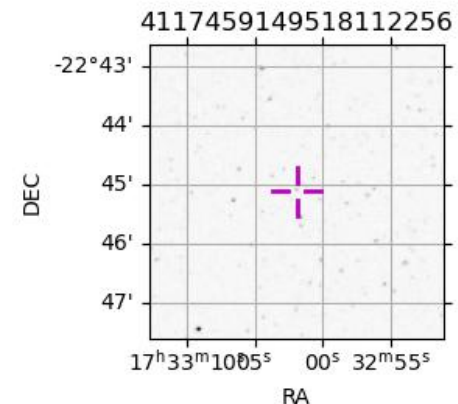
2031-02-16T21:52:10.2400 ex: 17 33 02.0153 s: -22 45 06.917 C/A 0.566" PA 182.72 deg v_sky +26.30 km/s D 05.68 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PMO
 KAV



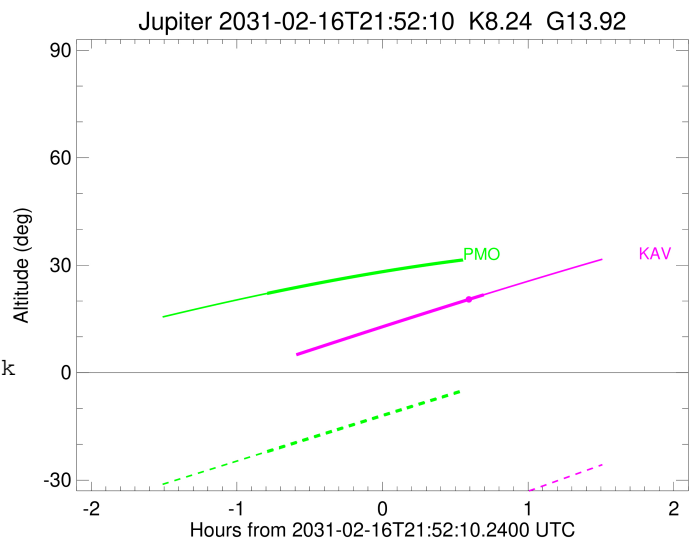
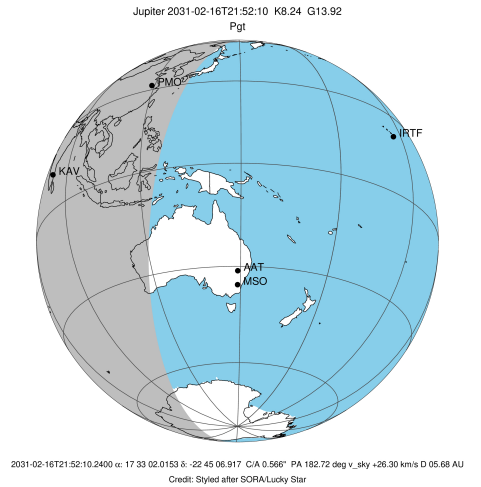
Observable events with sun below -5 deg and altitude above 5 deg

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 16 21:04 - FEB 16 21:04	Pin
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 16 22:33 - FEB 16 22:33	Pne
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            : 2031-02-16T21:50:16.230
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       : 4117459149518112256
2Mass ID (if available) : 17330202-2245069
ICRS Star Coord at Epoch: 17h 33m 02.01535s -22:45:06.91706s
RUWE (>1.4 is poor) : 1.08
K magnitude           : 8.241
G magnitude           : 13.917
RP magnitude         : 12.509
BP magnitude         : 16.473
DUPflag              : 0
Distance (au)        : 5.681
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 26.30
Sun-Target sep (deg) : 63.81
Sun-Moon sep (deg)   : 0.48
B (ring opening deg) : -2.67
PA of pole (deg)     : 2.07
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation (") : 1.736
C/A sky separation (km) : 7152.9
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
    
```

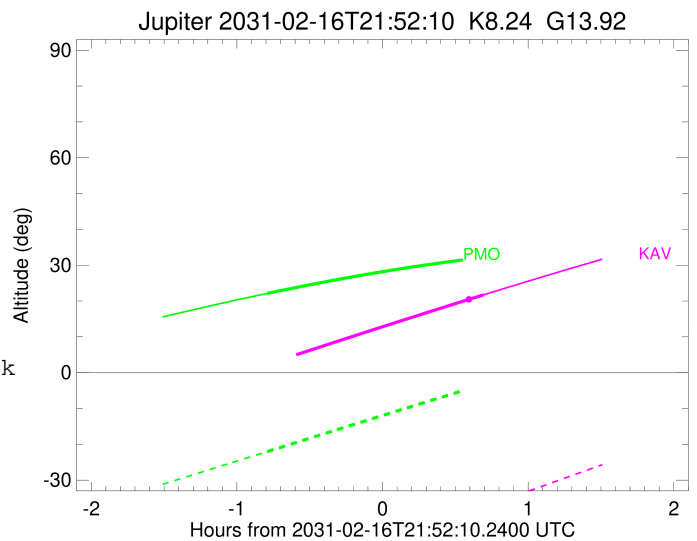
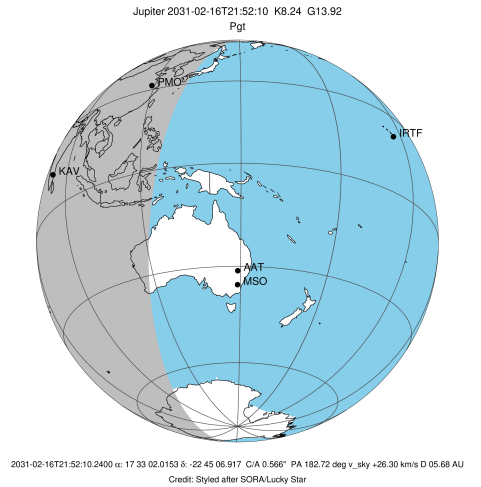


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-16T21:04:40.215	22.12	-22.02	71491.9	4.84	5.53
Jupiter	E	2031-02-16T22:35:58.181	32.33	-2.80x	71491.9	6.58	7.51

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-16T21:48:21.970
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: 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       : 4117459149518112256
2Mass ID (if available) : 17330202-2245069
ICRS Star Coord at Epoch: 17h 33m 02.01535s -22:45:06.91706s
RUWE (>1.4 is poor) : 1.08
K magnitude          : 8.241
G magnitude          : 13.917
RP magnitude         : 12.509
BP magnitude         : 16.473
DUPflag             : 0
Distance (au)        : 5.681
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 26.30
Sun-Target sep (deg) : 63.81
Sun-Moon sep (deg)   : 1.03
B (ring opening deg) : -2.67
PA of pole (deg)     : 2.07
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation (") : 1.010
C/A sky separation (km) : 4162.8
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	2031-02-16T21:02:59.760	1.95x	-59.65	71492.0	2.28	2.61
Jupiter	E	2031-02-16T22:33:54.678	21.74	-37.53	71491.9	4.37	4.99