

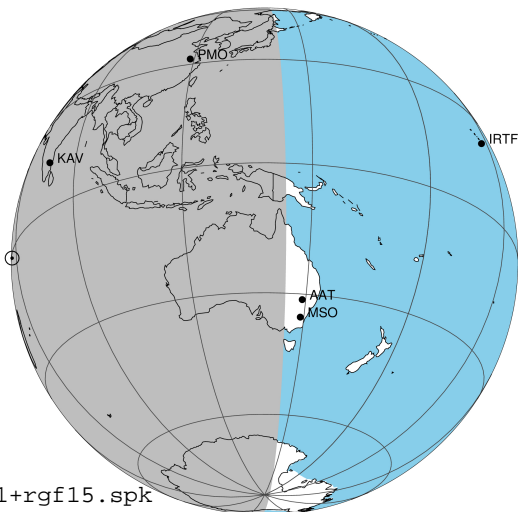
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-03-23T20:31:15.210  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4068898501281479040  
 2Mass ID (if available) : 17501531-2252349

Jupiter 2031-03-23T20:31:15 K8.95 G14.75 Pgt

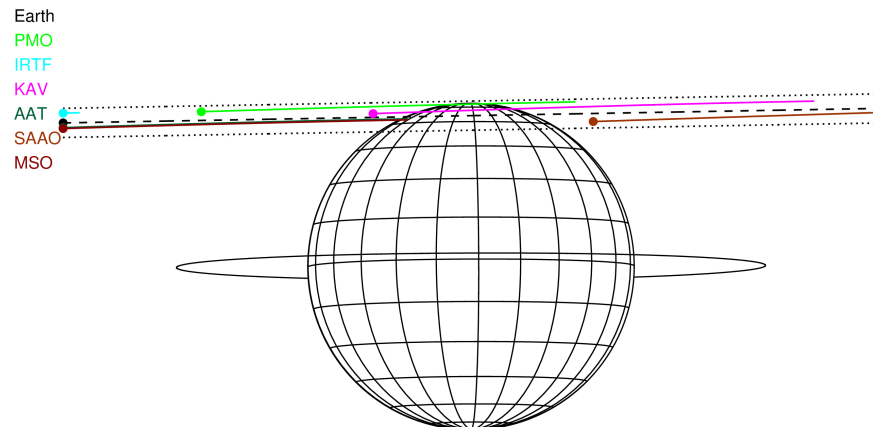
ICRS Star Coord at Epoch: 17h 50m 15.30701s -22:52:35.06212s

RUWE (>1.4 is poor) : 0.91  
 K magnitude : 8.950  
 G magnitude : 14.750  
 RP magnitude : 13.363  
 BP magnitude : 17.064  
 DUPflag : 0  
 Distance (au) : 5.131  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 10.64  
 Sun-Target sep (deg) : 94.82  
 Sun-Moon sep (deg) : 103.42  
 B (ring opening deg) : -2.63  
 PA of pole (deg) : 0.21  
 Pole direction: RA (deg): 268.05699  
 Dec (deg): 64.49651  
 C/A sky separation (") : 17.755  
 C/A sky separation (km) : 66068.3  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2031-03-23T20:31:15 K8.95 G14.75  
 Pgt

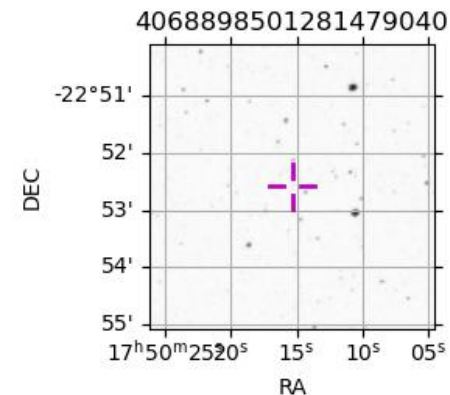


2031-03-23T20:31:15.2100 a: 17 50 15.3070 s: -22 52 35.062 C/A \*\*\*\*\* PA 181.02 deg v\_sky +10.64 km/s D 05.13 AU  
 Credit: Styled after SORA/Lucky Star



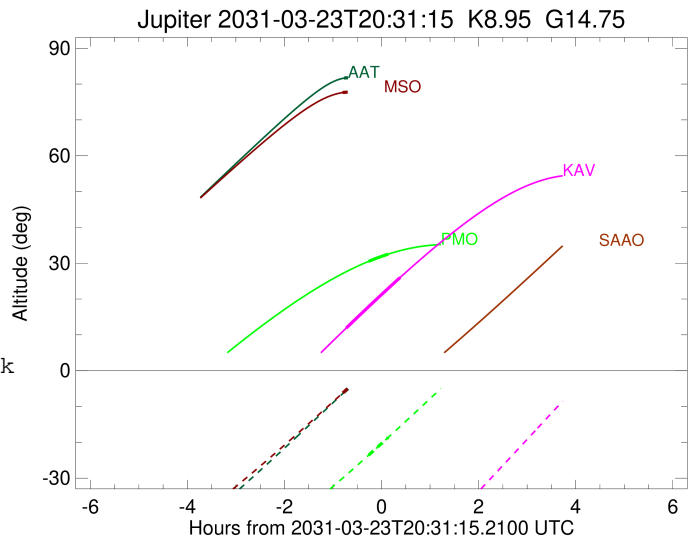
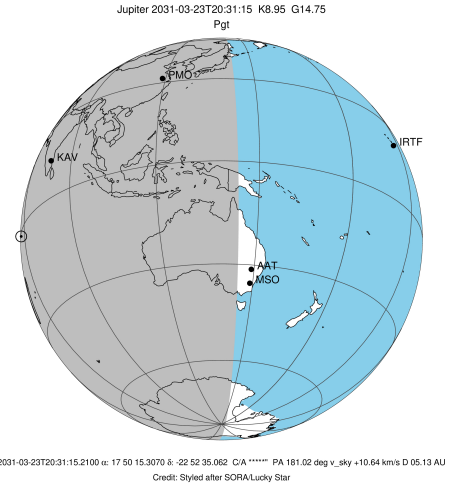
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	MAR 23 20:15 - MAR 23 20:39	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	+ +	MAR 23 19:47 - MAR 23 20:54	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	+	MAR 23 19:45 - MAR 23 19:45	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	MAR 23 19:43 - MAR 23 19:43	Pin



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-23T20:27:24.660
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       : 4068898501281479040
2Mass ID (if available) : 17501531-2252349
ICRS Star Coord at Epoch: 17h 50m 15.30701s -22:52:35.06212s
RUWE (>1.4 is poor) : 0.91
K magnitude          : 8.950
G magnitude          : 14.750
RP magnitude         : 13.363
BP magnitude         : 17.064
DUPflag             : 0
Distance (au)        : 5.131
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 10.64
Sun-Target sep (deg) : 94.82
Sun-Moon sep (deg)   : 103.85
B (ring opening deg) : -2.63
PA of pole (deg)     : 0.21
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 19.108
C/A sky separation (km) : 71103.7
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
    
```

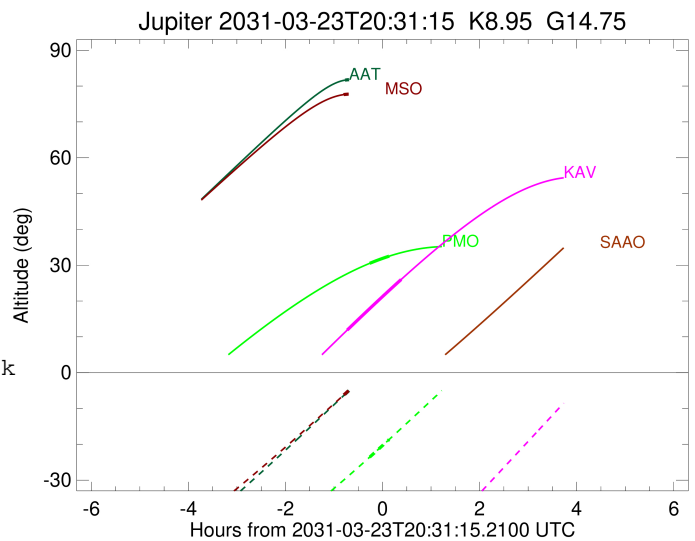
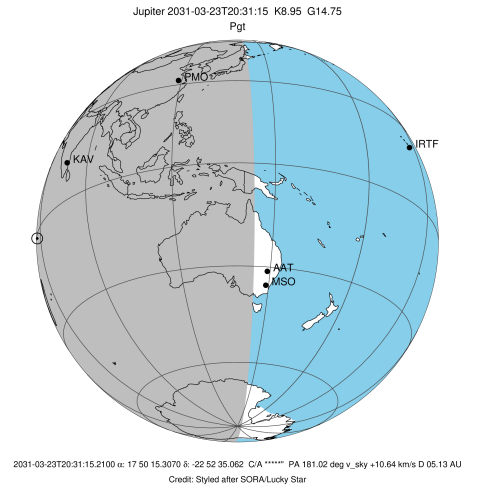


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-23T20:15:27.127	30.52	-23.57	71482.8	82.47	83.35
Jupiter	E	2031-03-23T20:39:22.995	32.51	-18.67	71482.7	84.55	85.19

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-23T20:20:52.820
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       : 4068898501281479040
2Mass ID (if available) : 17501531-2252349
ICRS Star Coord at Epoch: 17h 50m 15.30701s -22:52:35.06212s
RUWE (>1.4 is poor) : 0.91
K magnitude          : 8.950
G magnitude          : 14.750
RP magnitude         : 13.363
BP magnitude         : 17.064
DUPflag             : 0
Distance (au)        : 5.131
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 10.64
Sun-Target sep (deg) : 94.82
Sun-Moon sep (deg)  : 103.57
B (ring opening deg) : -2.63
PA of pole (deg)    : 0.21
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 18.374
C/A sky separation (km) : 68372.0
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
    
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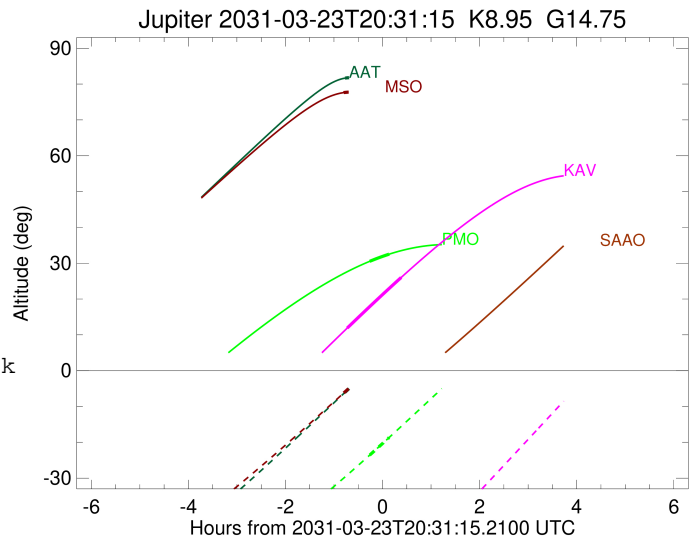
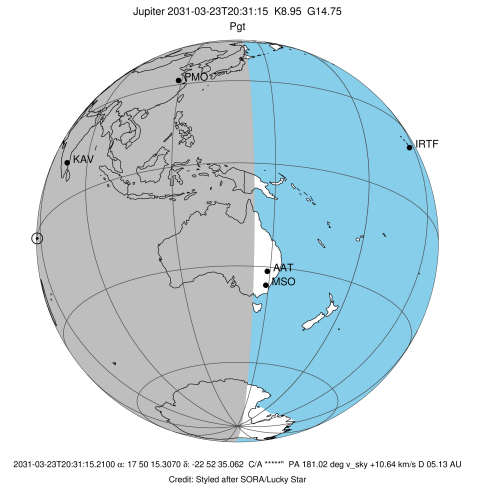


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-23T19:47:38.805	11.89	-70.42	71483.6	71.15	73.26
Jupiter	E	2031-03-23T20:54:21.128	26.02	-56.51	71483.3	74.47	76.24

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-23T20:33:02.660
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : AAT
Location              : Siding Spring (AAT)
Latitude (deg)        : -31.27703
E. Longitude (deg)    : 149.06608
Altitude (km)         : 1.164
Gaia source ID        : 4068898501281479040
2Mass ID (if available) : 17501531-2252349
ICRS Star Coord at Epoch: 17h 50m 15.30701s -22:52:35.06212s
RUWE (>1.4 is poor) : 0.91
K magnitude           : 8.950
G magnitude           : 14.750
RP magnitude          : 13.363
BP magnitude          : 17.064
DUPflag              : 0
Distance (au)         : 5.131
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 10.64
Sun-Target sep (deg)  : 94.82
Sun-Moon sep (deg)    : 104.36
B (ring opening deg) : -2.63
PA of pole (deg)      : 0.21
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 17.504
C/A sky separation (km) : 65136.0
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
    
```

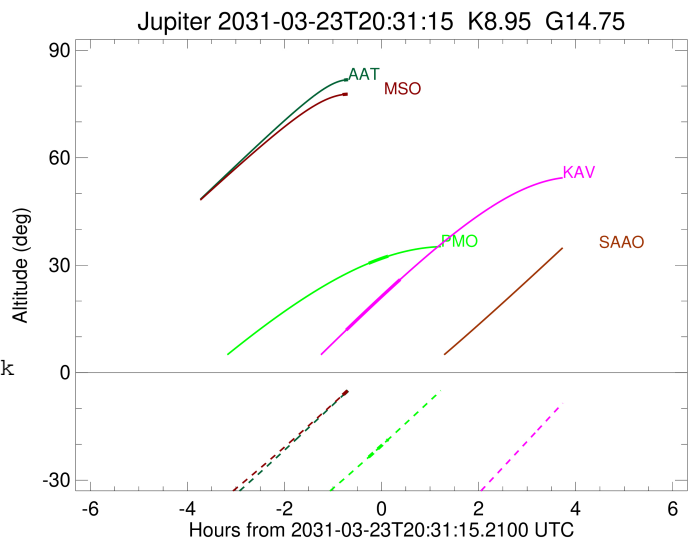
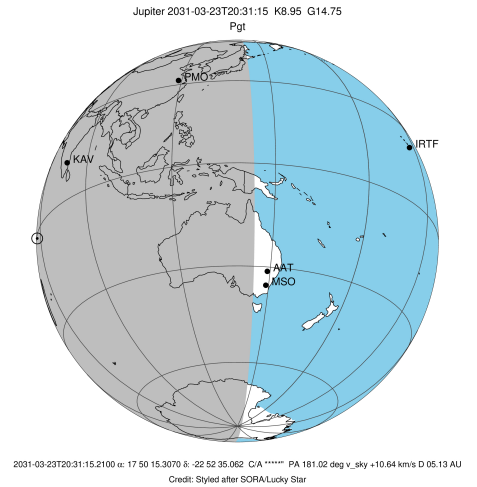


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-23T19:44:59.789	81.66	-6.02	71484.3	64.77	67.47
Jupiter	E	2031-03-23T21:21:05.985	68.41	14.45x	71484.1	66.13	68.70

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-23T20:32:57.570
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : MSO
Location            : Mt. Stromlo Observatory
Latitude (deg)      : -35.32000
E. Longitude (deg)  : 149.00833
Altitude (km)       : 0.770
Gaia source ID      : 4068898501281479040
2Mass ID (if available) : 17501531-2252349
ICRS Star Coord at Epoch: 17h 50m 15.30701s -22:52:35.06212s
RUWE (>1.4 is poor) : 0.91
K magnitude          : 8.950
G magnitude          : 14.750
RP magnitude         : 13.363
BP magnitude         : 17.064
DUPflag             : 0
Distance (au)       : 5.131
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 10.64
Sun-Target sep (deg) : 94.82
Sun-Moon sep (deg)  : 104.34
B (ring opening deg) : -2.63
PA of pole (deg)    : 0.21
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 17.386
C/A sky separation (km) : 64696.5
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	2031-03-23T19:43:27.156	77.62	-6.21	71484.4	63.93	66.69
Jupiter	E	2031-03-23T21:22:28.709	66.72	13.91x	71484.2	65.30	67.95