

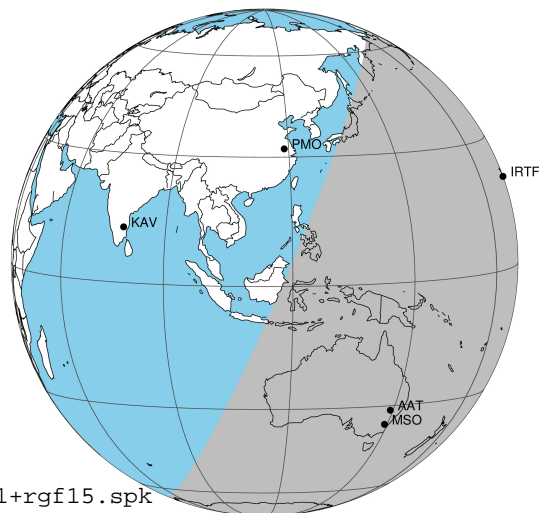
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2028-06-15T10:10:35.310
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3813970786080560768
 2Mass ID (if available) : 11202291+0538547

Jupiter 2028-06-15T10:10:35 K8.57 G11.00 Pgt

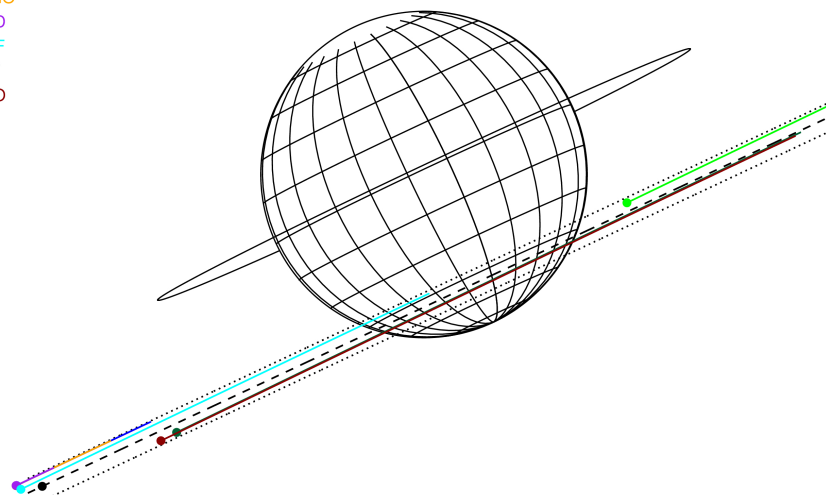
ICRS Star Coord at Epoch: 11h 20m 22.93062s +05:38:54.88382s

RUWE (>1.4 is poor) : 0.95
 K magnitude : 8.571
 G magnitude : 10.996
 RP magnitude : 10.256
 BP magnitude : 11.604
 DUPflag : 0
 Distance (au) : 5.452
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 15.06
 Sun-Target sep (deg) : 84.25
 Sun-Moon sep (deg) : 169.73
 B (ring opening deg) : -1.69
 PA of pole (deg) : 25.25
 Pole direction: RA (deg): 268.05760
 Dec (deg): 64.49660
 C/A sky separation (") : 13.305
 C/A sky separation (km) : 52607.9
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2028-06-15T10:10:35 K8.57 G11.00
 Pgt



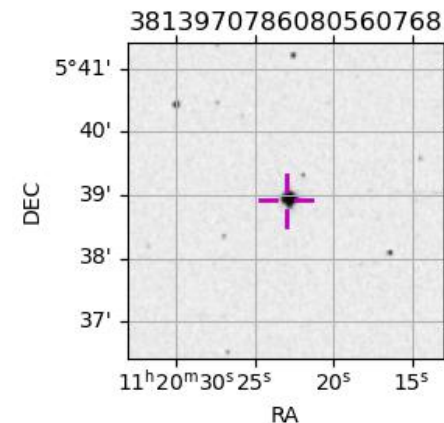
Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 AAT
 MSO



2028-06-15T10:10:35.3100 a: 11 20 22.9306 s: +05 38 54.884 C/A ***** PA 25.14 deg v_sky +15.06 km/s D 05.45 AU
 Credit: Styled after SORA/Lucky Star

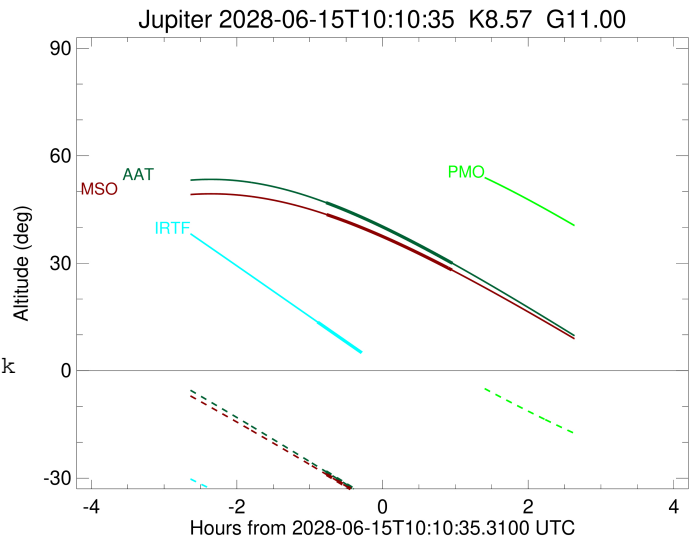
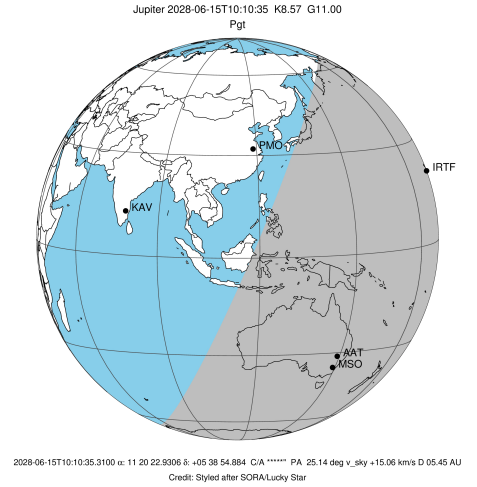
Observable events with sun below -5 deg and altitude above 5 deg

| 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 | + | JUN 15 09:17 - JUN 15 09:17 | Pin |
| 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 | + | JUN 15 09:24 - JUN 15 11:08 | Pie |
| SAAO | So. Afr. Astro. Obs. (Sutherland) | -32.4 | 20.8 | | | Pnn |
| MSO | Mt. Stromlo Observatory | -35.3 | 149.0 | + | JUN 15 09:24 - JUN 15 11:07 | Pie |



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2028-06-15T10:15:41.340
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : IRTF
Location            : Mauna Kea/IRTF
Latitude (deg)      : 19.82622
E. Longitude (deg)  : 204.52800
Altitude (km)       : 4.168
Gaia source ID      : 3813970786080560768
2Mass ID (if available) : 11202291+0538547
ICRS Star Coord at Epoch: 11h 20m 22.93062s +05:38:54.88382s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 8.571
G magnitude          : 10.996
RP magnitude         : 10.256
BP magnitude         : 11.604
DUPflag             : 0
Distance (au)       : 5.452
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 15.06
Sun-Target sep (deg) : 84.25
Sun-Moon sep (deg)  : 169.52
B (ring opening deg) : -1.69
PA of pole (deg)    : 25.25
Pole direction: RA (deg): 268.05760
Dec (deg): 64.49660
C/A sky separation (" ) : 12.164
C/A sky separation (km) : 48097.9
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
    
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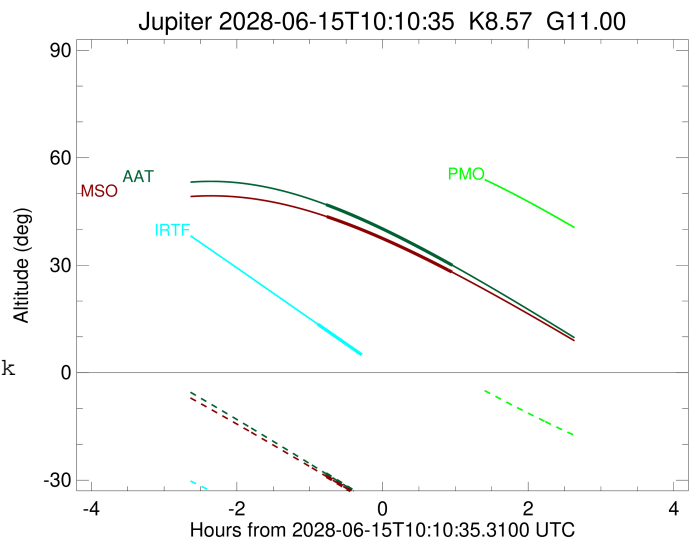
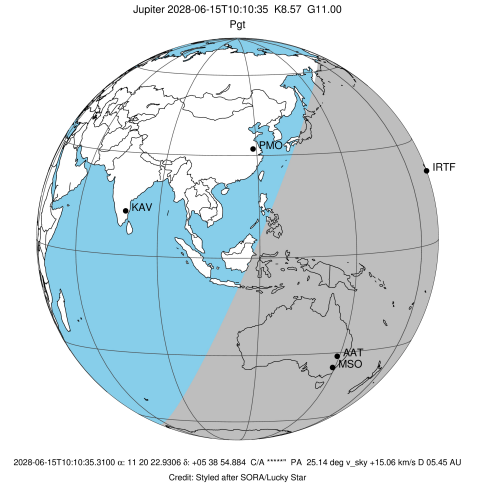


x: target alt < 5.0 deg or sun > -5.0 deg

| Target | I/E | UTC | alt | alt-sun | radius | lat-geo | lat-geodetic |
|---------|-----|-------------------------|---------|---------|---------|---------|--------------|
| Jupiter | I | 2028-06-15T09:17:09.057 | 13.56 | -44.11 | 71490.2 | -42.35 | -46.07 |
| Jupiter | E | 2028-06-15T11:13:45.715 | -13.77x | -45.18 | 71490.2 | -42.35 | -46.07 |

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2028-06-15T10:16:14.630
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      : 3813970786080560768
2Mass ID (if available) : 11202291+0538547
ICRS Star Coord at Epoch: 11h 20m 22.93062s +05:38:54.88382s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 8.571
G magnitude          : 10.996
RP magnitude         : 10.256
BP magnitude         : 11.604
DUPflag             : 0
Distance (au)       : 5.452
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 15.06
Sun-Target sep (deg) : 84.25
Sun-Moon sep (deg)  : 169.17
B (ring opening deg) : -1.69
PA of pole (deg)    : 25.25
Pole direction: RA (deg): 268.05760
Dec (deg): 64.49660
C/A sky separation (") : 13.799
C/A sky separation (km) : 54562.6
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
    
```

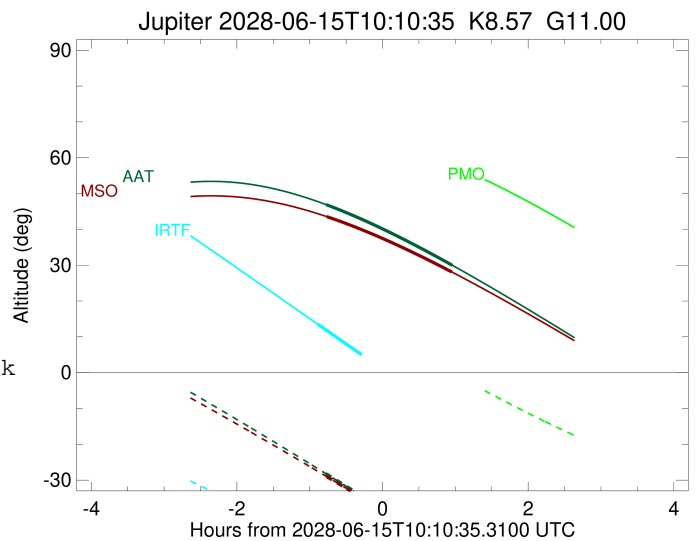
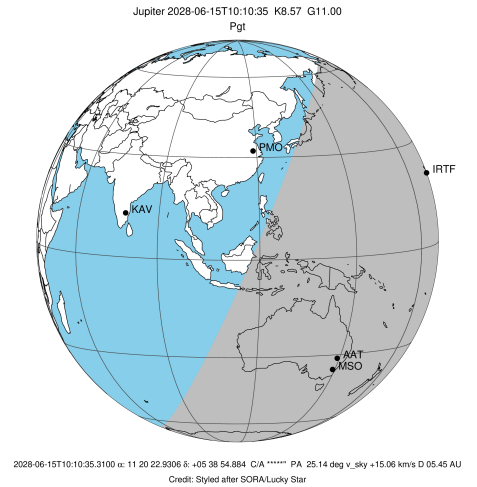


x: target alt < 5.0 deg or sun > -5.0 deg

| Target | I/E | UTC | alt | alt-sun | radius | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I | 2028-06-15T09:24:05.909 | 46.90 | -28.22 | 71489.7 | -50.24 | -53.82 |
| Jupiter | E | 2028-06-15T11:08:08.034 | 29.97 | -50.32 | 71489.7 | -49.27 | -52.88 |

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target                : Jupiter
target radius (km)    : 71492.00
C/A epoch              : 2028-06-15T10:16:14.000
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        : 3813970786080560768
2Mass ID (if available) : 11202291+0538547
ICRS Star Coord at Epoch: 11h 20m 22.93062s +05:38:54.88382s
RUWE (>1.4 is poor)  : 0.95
K magnitude           : 8.571
G magnitude           : 10.996
RP magnitude          : 10.256
BP magnitude          : 11.604
DUPflag              : 0
Distance (au)         : 5.452
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 15.06
Sun-Target sep (deg)  : 84.25
Sun-Moon sep (deg)    : 169.13
B (ring opening deg)  : -1.69
PA of pole (deg)      : 25.25
Pole direction: RA (deg): 268.05760
Dec (deg): 64.49660
C/A sky separation (") : 13.896
C/A sky separation (km) : 54947.8
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 | 2028-06-15T09:24:39.152 | 43.56 | -29.02 | 71489.6 | -50.69 | -54.25 |
| Jupiter | E | 2028-06-15T11:07:34.381 | 28.13 | -49.98 | 71489.7 | -49.78 | -53.37 |