

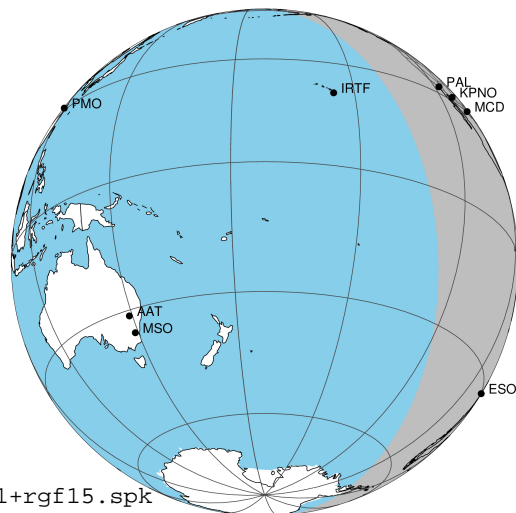
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-11-08T02:30:20.740  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4066546641550777088  
 2Mass ID (if available) : 18071918-2324355

Jupiter 2043-11-08T02:30:20 K8.99 G13.38 Pgt

ICRS Star Coord at Epoch: 18h 07m 19.18163s -23:24:35.59563s

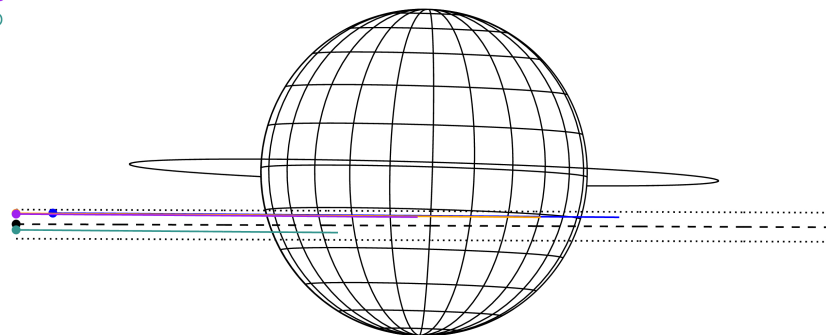
RUWE (>1.4 is poor) : 0.90  
 K magnitude : 8.989  
 G magnitude : 13.384  
 RP magnitude : 12.232  
 BP magnitude : 14.791  
 DUPflag : 0  
 Distance (au) : 5.846  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 33.72  
 Sun-Target sep (deg) : 46.72  
 Sun-Moon sep (deg) : 22.18  
 B (ring opening deg) : -2.04  
 PA of pole (deg) : -1.62  
 Pole direction: RA (deg): 268.05676  
 Dec (deg): 64.49731  
 C/A sky separation (") : 5.494  
 C/A sky separation (km) : 23294.5  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2043-11-08T02:30:20 K8.99 G13.38  
 Pgt



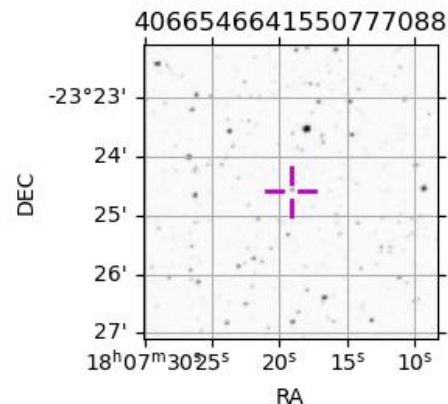
2043-11-08T02:30:20.7400 ex: 18 07 19.1816 s: -23 24 35.596 C/A 5.501" PA 359.78 deg v\_sky +33.72 km/s D 05.85 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PAL  
 KPNO  
 MCD  
 ESO



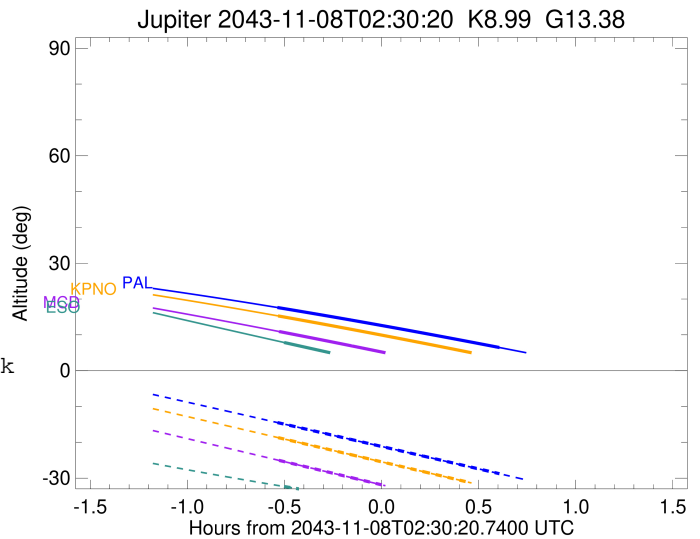
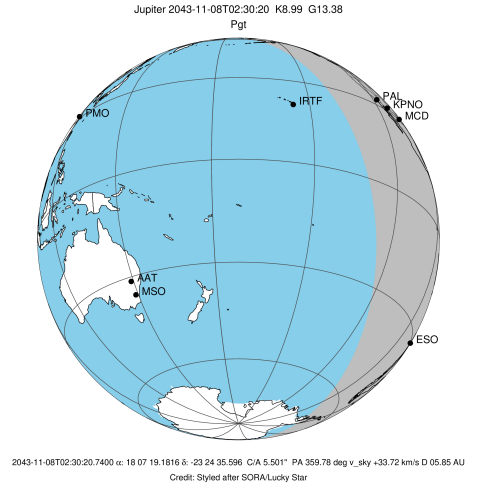
Observable events with sun below -5 deg and altitude above 5 deg

| 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 | + +    | NOV 08 01:58 - NOV 08 03:06 | Pie   |
| PMO  | Purple Mtn Obs. Nanking           | 32.1  | 118.8 |        |                             | Pnn   |
| KPNO | Kitt Peak Natl Obs                | 32.0  | 248.4 | +      | NOV 08 01:58 - NOV 08 01:58 | Pin   |
| MCD  | McDonald Obs. 2.7m                | 30.7  | 256.0 | +      | NOV 08 01:58 - NOV 08 01:58 | Pin   |
| 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 | +      | NOV 08 02:00 - NOV 08 02:00 | Pin   |
| 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             : 2043-11-08T02:32:30.760
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PAL
Location              : Palomar Mt (200")
Latitude (deg)        : 33.35622
E. Longitude (deg)    : 243.13601
Altitude (km)         : 1.706
Gaia source ID        : 4066546641550777088
2Mass ID (if available) : 18071918-2324355
ICRS Star Coord at Epoch: 18h 07m 19.18163s -23:24:35.59563s
RUWE (>1.4 is poor) : 0.90
K magnitude           : 8.989
G magnitude           : 13.384
RP magnitude          : 12.232
BP magnitude          : 14.791
DUPflag              : 0
Distance (au)         : 5.846
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 33.72
Sun-Target sep (deg)  : 46.72
Sun-Moon sep (deg)    : 21.81
B (ring opening deg) : -2.04
PA of pole (deg)      : -1.62
Pole direction: RA (deg): 268.05676
Dec (deg): 64.49731
C/A sky separation (" ) : 4.468
C/A sky separation (km) : 18945.6
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
    
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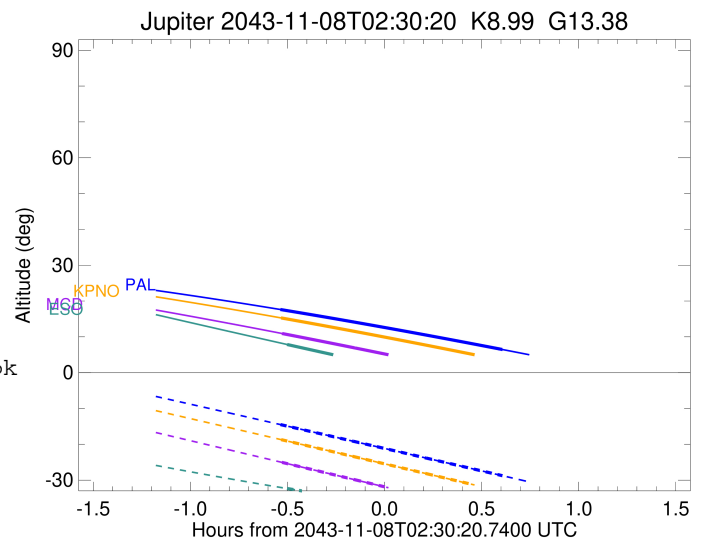
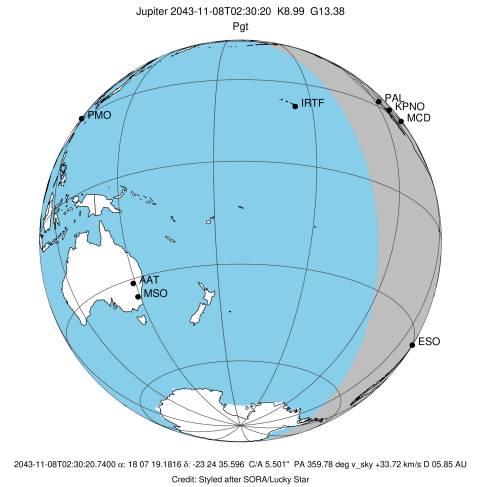


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt   | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I   | 2043-11-08T01:58:11.831 | 17.62 | -14.49  | 71491.5 | -16.55  | -18.76       |
| Jupiter | E   | 2043-11-08T03:06:46.186 | 6.46  | -28.75  | 71491.7 | -14.18  | -16.11       |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-11-08T02:32:40.300
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : KPNO
Location            : Kitt Peak Natl Obs
Latitude (deg)      : 31.96333
E. Longitude (deg)  : 248.40000
Altitude (km)       : 2.120
Gaia source ID      : 4066546641550777088
2Mass ID (if available) : 18071918-2324355
ICRS Star Coord at Epoch: 18h 07m 19.18163s -23:24:35.59563s
RUWE (>1.4 is poor) : 0.90
K magnitude         : 8.989
G magnitude         : 13.384
RP magnitude        : 12.232
BP magnitude        : 14.791
DUPflag            : 0
Distance (au)       : 5.846
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 33.72
Sun-Target sep (deg) : 46.72
Sun-Moon sep (deg)  : 21.74
B (ring opening deg) : -2.04
PA of pole (deg)    : -1.62
Pole direction: RA (deg): 268.05676
Dec (deg): 64.49731
C/A sky separation (") : 4.533
C/A sky separation (km) : 19219.0
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
    
```

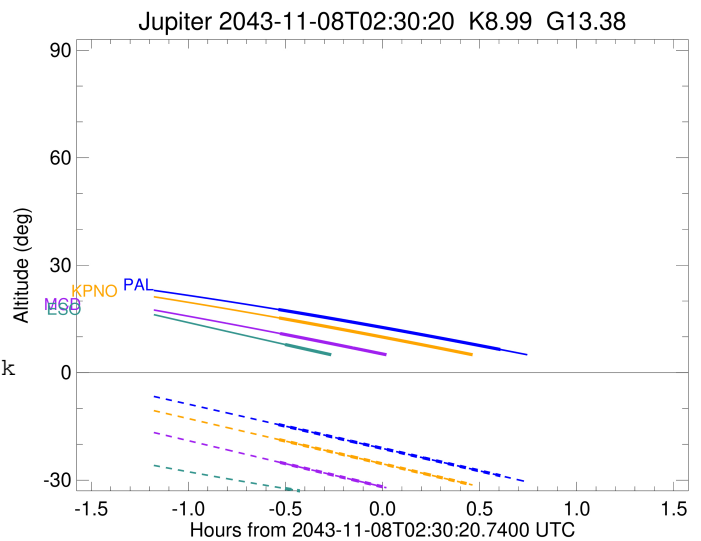
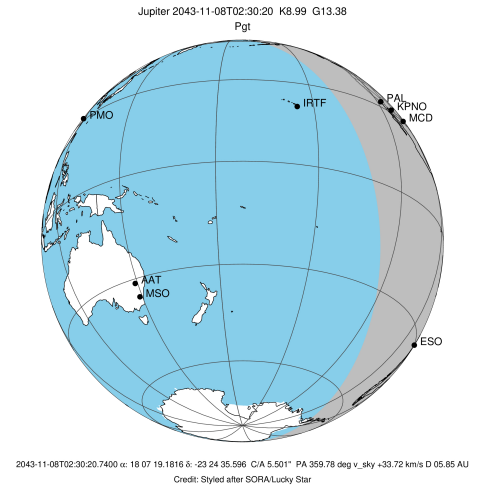


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt   | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I   | 2043-11-08T01:58:25.224 | 15.28 | -18.70  | 71491.5 | -16.76  | -18.99       |
| Jupiter | E   | 2043-11-08T03:06:51.674 | 3.41x | -33.20  | 71491.6 | -14.43  | -16.38       |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-11-08T02:32:51.040
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : MCD
Location              : McDonald Obs. 2.7m
Latitude (deg)        : 30.67158
E. Longitude (deg)    : 255.97844
Altitude (km)         : 2.075
Gaia source ID        : 4066546641550777088
2Mass ID (if available) : 18071918-2324355
ICRS Star Coord at Epoch: 18h 07m 19.18163s -23:24:35.59563s
RUWE (>1.4 is poor) : 0.90
K magnitude           : 8.989
G magnitude           : 13.384
RP magnitude          : 12.232
BP magnitude          : 14.791
DUPflag              : 0
Distance (au)         : 5.846
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 33.72
Sun-Target sep (deg)  : 46.72
Sun-Moon sep (deg)    : 21.65
B (ring opening deg) : -2.04
PA of pole (deg)      : -1.62
Pole direction: RA (deg): 268.05676
Dec (deg): 64.49731
C/A sky separation (") : 4.619
C/A sky separation (km) : 19583.4
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
    
```

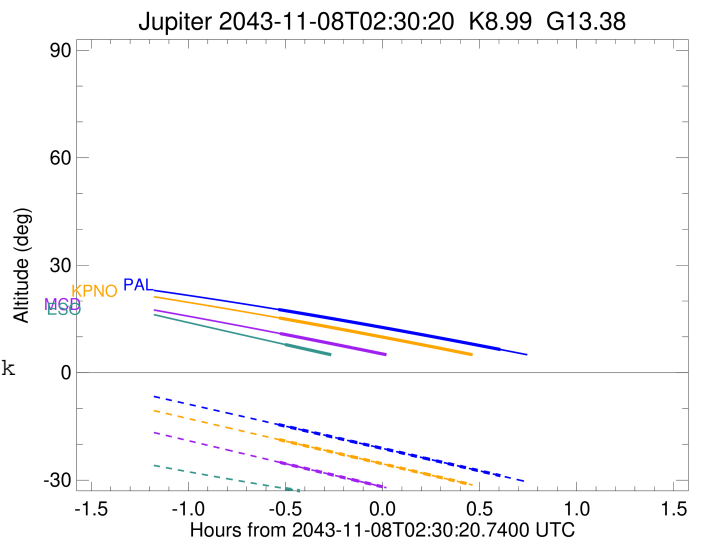
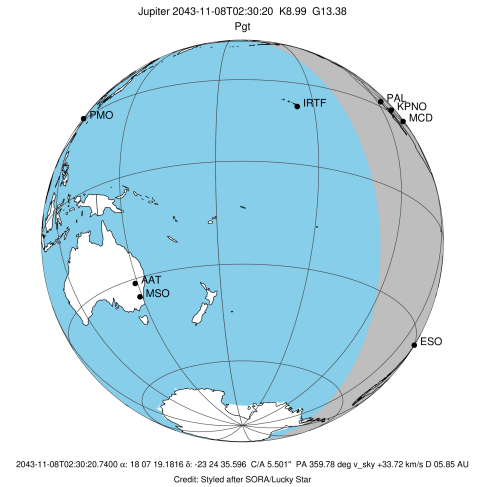


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt    | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|--------|---------|---------|---------|--------------|
| Jupiter | I   | 2043-11-08T01:58:41.689 | 10.93  | -25.05  | 71491.5 | -17.05  | -19.31       |
| Jupiter | E   | 2043-11-08T03:06:56.477 | -1.70x | -39.74  | 71491.6 | -14.74  | -16.74       |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-11-08T02:32:57.690
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : ESO
Location              : European Southern Obs. (3.6m)
Latitude (deg)       : -29.26097
E. Longitude (deg)   : 289.26831
Altitude (km)        : 2.400
Gaia source ID       : 4066546641550777088
2Mass ID (if available) : 18071918-2324355
ICRS Star Coord at Epoch: 18h 07m 19.18163s -23:24:35.59563s
RUWE (>1.4 is poor) : 0.90
K magnitude           : 8.989
G magnitude           : 13.384
RP magnitude          : 12.232
BP magnitude          : 14.791
DUPflag              : 0
Distance (au)        : 5.846
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 33.72
Sun-Target sep (deg) : 46.72
Sun-Moon sep (deg)   : 21.39
B (ring opening deg) : -2.04
PA of pole (deg)     : -1.62
Pole direction: RA (deg): 268.05676
Dec (deg): 64.49731
C/A sky separation (") : 6.286
C/A sky separation (km) : 26654.4
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   | 2043-11-08T02:00:13.773 | 7.87   | -32.33  | 71491.1 | -23.01  | -25.87       |
| Jupiter | E   | 2043-11-08T03:05:37.851 | -4.96x | -40.39  | 71491.3 | -20.73  | -23.38       |