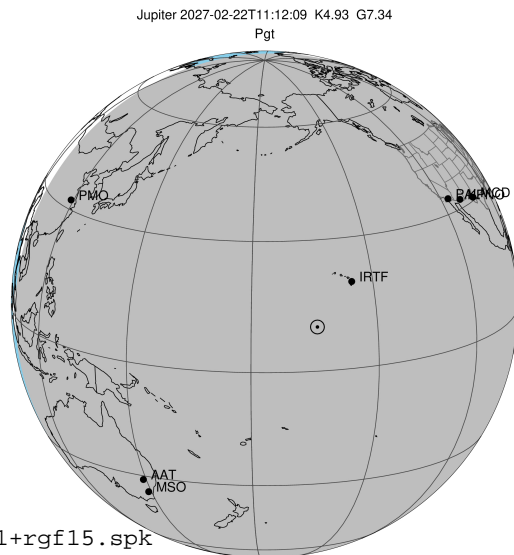


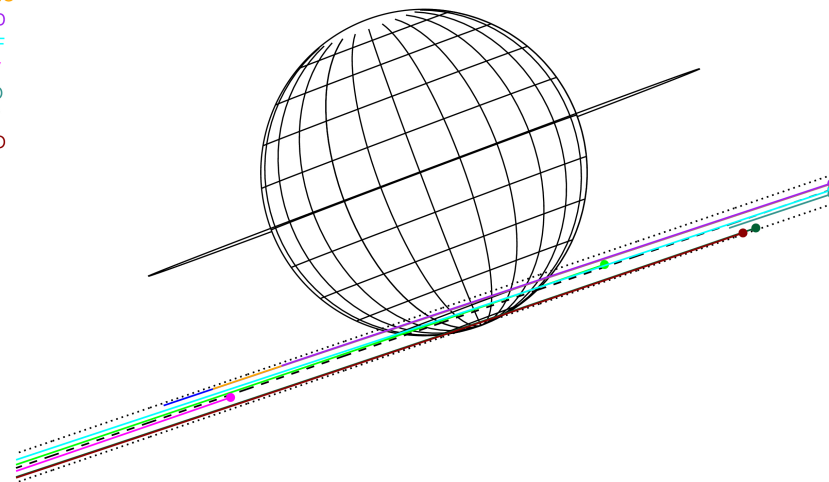
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2027-02-22T11:12:09.020  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 619023298387097856  
 2Mass ID (if available) : 09313903+1546125

Jupiter 2027-02-22T11:12:09 K4.93 G7.34 Pgt

ICRS Star Coord at Epoch: 09h 31m 38.98066s +15:46:12.26555s  
 RUWE (>1.4 is poor) : 5.83  
 K magnitude : 4.926  
 G magnitude : 7.341  
 RP magnitude : 6.619  
 BP magnitude : 7.917  
 DUPflag : 1  
 Distance (au) : 4.383  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -16.71  
 Sun-Target sep (deg) : 166.90  
 Sun-Moon sep (deg) : 33.44  
 B (ring opening deg) : -0.39  
 PA of pole (deg) : 20.61  
 Pole direction: RA (deg): 268.05764  
 Dec (deg): 64.49665  
 C/A sky separation (") : 20.375  
 C/A sky separation (km) : 64771.3  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



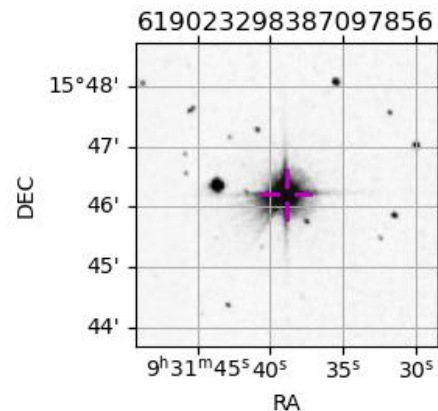
Earth  
 PAL  
 PMO  
 KPNO  
 MCD  
 IRTF  
 KAV  
 ESO  
 AAT  
 MSO



2027-02-22T11:12:09.0200 α: 09 31 38.9807 δ: +15 46 12.266 C/A \*\*\*\*\* PA 18.85 deg v\_sky -16.71 km/s D 04.38 AU  
 Credit: Styled after SORA/Lucky Star

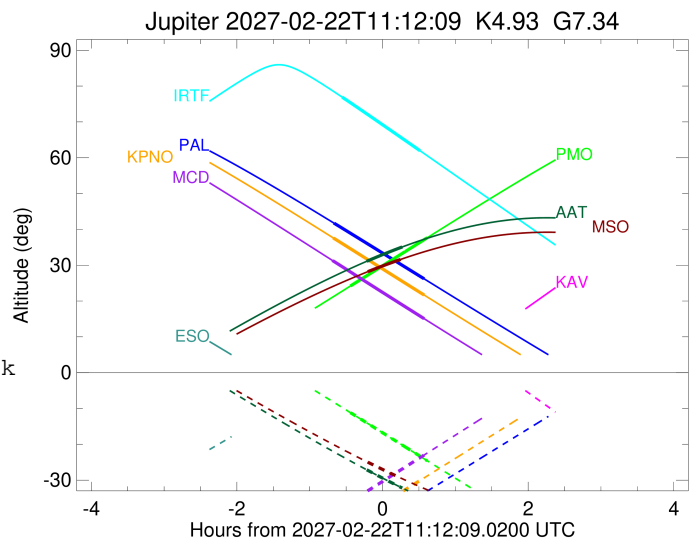
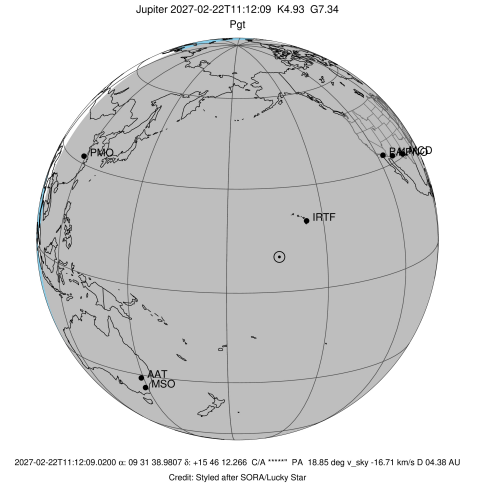
Observable events with sun below -5 deg and altitude above 5 deg

| Obs  | Location                          | lat   | Elon  | Target | Observed Events | Interval       | OEcode |
|------|-----------------------------------|-------|-------|--------|-----------------|----------------|--------|
| PIC  | Pic du Midi                       | 42.9  | 0.1   |        |                 |                | Pnn    |
| PAL  | Palomar Mt (200")                 | 33.4  | 243.1 | + +    | FEB 22 10:32    | - FEB 22 11:46 | Pie    |
| PMO  | Purple Mtn Obs. Nanking           | 32.1  | 118.8 | + +    | FEB 22 10:45    | - FEB 22 11:49 | Pie    |
| KPNO | Kitt Peak Natl Obs                | 32.0  | 248.4 | + +    | FEB 22 10:31    | - FEB 22 11:46 | Pie    |
| MCD  | McDonald Obs. 2.7m                | 30.7  | 256.0 | + +    | FEB 22 10:30    | - FEB 22 11:46 | Pie    |
| TEN  | Teide Obs./Tenerife               | 28.3  | 343.5 |        |                 |                | Pnn    |
| IRTF | Mauna Kea/IRTF                    | 19.8  | 204.5 | + +    | FEB 22 10:38    | - FEB 22 11:42 | Pie    |
| 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 | + +    | FEB 22 10:59    | - FEB 22 11:28 | Pie    |
| SAAO | So. Afr. Astro. Obs. (Sutherland) | -32.4 | 20.8  |        |                 |                | Pnn    |
| MSO  | Mt. Stromlo Observatory           | -35.3 | 149.0 | + +    | FEB 22 11:00    | - FEB 22 11:27 | Pie    |



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2027-02-22T11:09:12.750
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       : 619023298387097856
2Mass ID (if available) : 09313903+1546125
ICRS Star Coord at Epoch: 09h 31m 38.98066s +15:46:12.26555s
RUWE (>1.4 is poor) : 5.83
K magnitude           : 4.926
G magnitude           : 7.341
RP magnitude         : 6.619
BP magnitude         : 7.917
DUPflag              : 1
Distance (au)        : 4.383
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.71
Sun-Target sep (deg) : 166.90
Sun-Moon sep (deg)   : 33.35
B (ring opening deg) : -0.39
PA of pole (deg)     : 20.61
Pole direction: RA (deg): 268.05764
Dec (deg): 64.49665
C/A sky separation ("): 19.127
C/A sky separation (km): 60803.0
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
    
```

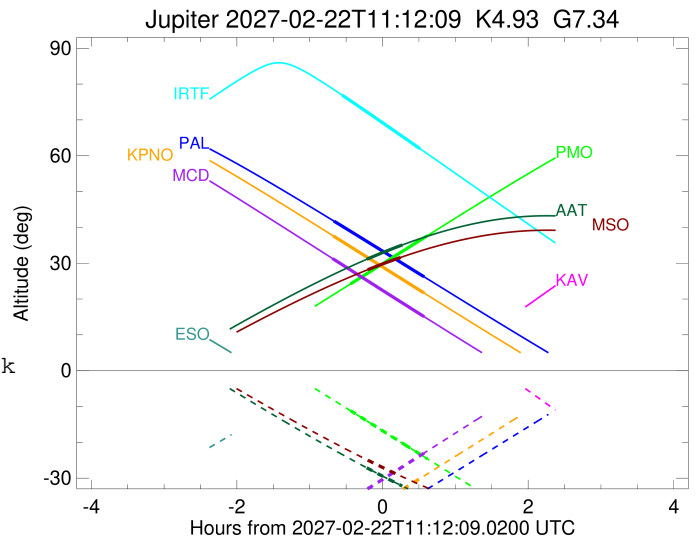
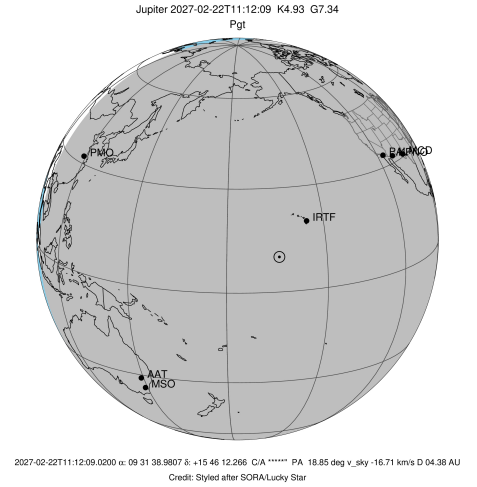


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt   | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I   | 2027-02-22T10:32:08.113 | 41.75 | -48.40  | 71491.8 | -60.55  | -63.57       |
| Jupiter | E   | 2027-02-22T11:46:24.664 | 26.20 | -33.57  | 71491.9 | -56.01  | -59.32       |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2027-02-22T11:17:24.820
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       : 619023298387097856
2Mass ID (if available) : 09313903+1546125
ICRS Star Coord at Epoch: 09h 31m 38.98066s +15:46:12.26555s
RUWE (>1.4 is poor) : 5.83
K magnitude           : 4.926
G magnitude           : 7.341
RP magnitude         : 6.619
BP magnitude         : 7.917
DUPflag              : 1
Distance (au)        : 4.383
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.71
Sun-Target sep (deg) : 166.90
Sun-Moon sep (deg)   : 34.43
B (ring opening deg) : -0.39
PA of pole (deg)     : 20.61
Pole direction: RA (deg): 268.05764
Dec (deg): 64.49665
C/A sky separation (") : 20.100
C/A sky separation (km) : 63897.1
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
    
```

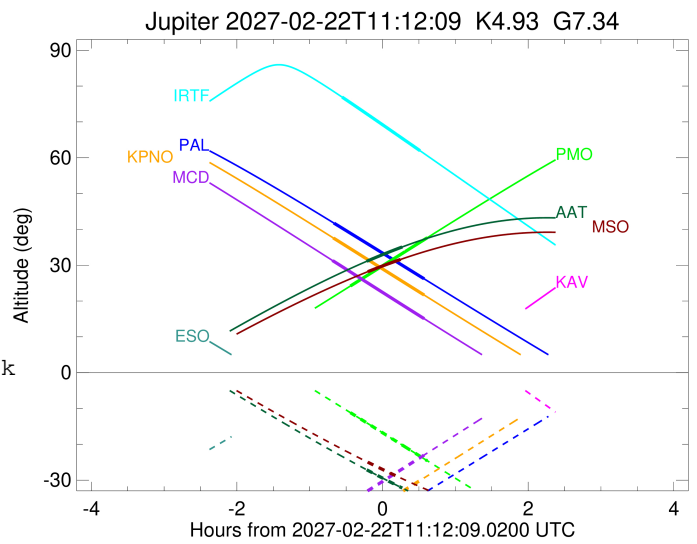
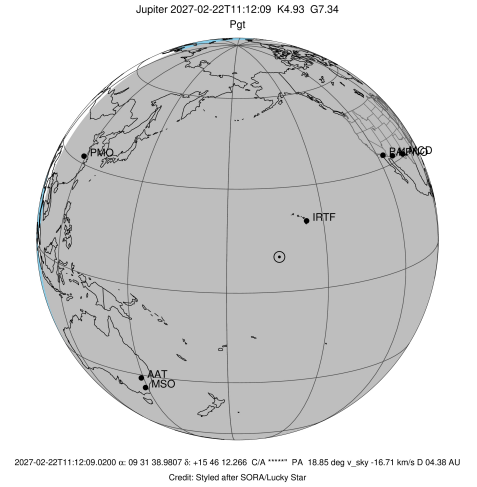


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt   | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I   | 2027-02-22T10:45:43.686 | 24.19 | -11.16  | 71491.8 | -64.97  | -67.65       |
| Jupiter | E   | 2027-02-22T11:49:01.380 | 37.66 | -24.58  | 71491.8 | -61.65  | -64.59       |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2027-02-22T11:08:54.450
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       : 619023298387097856
2Mass ID (if available) : 09313903+1546125
ICRS Star Coord at Epoch: 09h 31m 38.98066s +15:46:12.26555s
RUWE (>1.4 is poor) : 5.83
K magnitude           : 4.926
G magnitude           : 7.341
RP magnitude         : 6.619
BP magnitude         : 7.917
DUPflag              : 1
Distance (au)        : 4.383
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.71
Sun-Target sep (deg) : 166.90
Sun-Moon sep (deg)   : 33.28
B (ring opening deg) : -0.39
PA of pole (deg)     : 20.61
Pole direction: RA (deg): 268.05764
Dec (deg): 64.49665
C/A sky separation (") : 19.102
C/A sky separation (km) : 60723.3
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
    
```

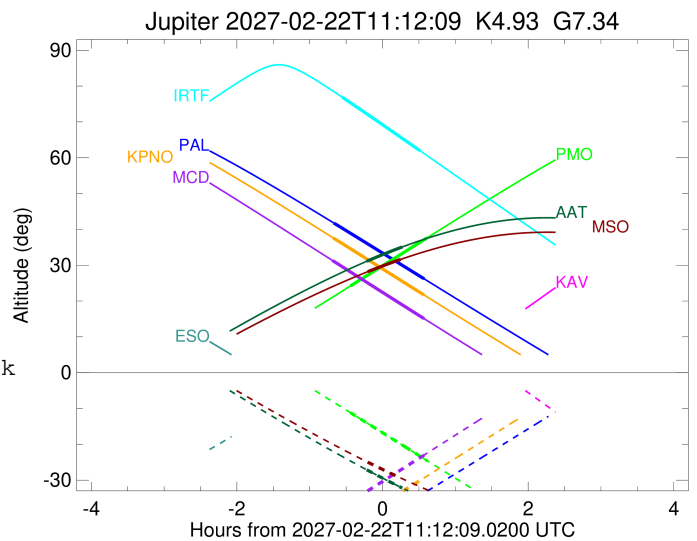
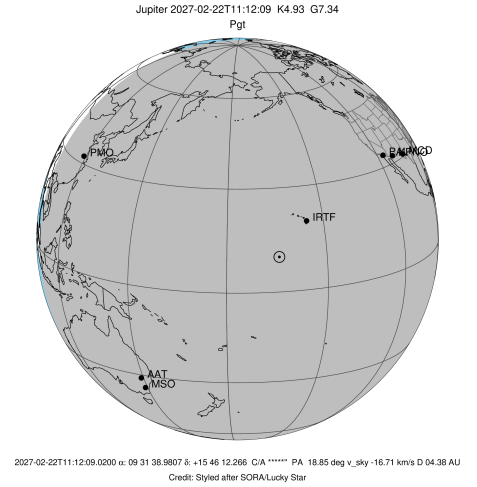


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt   | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I   | 2027-02-22T10:31:38.878 | 37.59 | -44.89  | 71491.8 | -60.42  | -63.45       |
| Jupiter | E   | 2027-02-22T11:46:17.782 | 21.70 | -29.41  | 71491.9 | -55.90  | -59.22       |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2027-02-22T11:08:34.700
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        : 619023298387097856
2Mass ID (if available) : 09313903+1546125
ICRS Star Coord at Epoch: 09h 31m 38.98066s +15:46:12.26555s
RUWE (>1.4 is poor) : 5.83
K magnitude           : 4.926
G magnitude           : 7.341
RP magnitude          : 6.619
BP magnitude          : 7.917
DUPflag              : 1
Distance (au)         : 4.383
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.71
Sun-Target sep (deg) : 166.90
Sun-Moon sep (deg)   : 33.19
B (ring opening deg) : -0.39
PA of pole (deg)     : 20.61
Pole direction: RA (deg): 268.05764
Dec (deg): 64.49665
C/A sky separation (") : 19.052
C/A sky separation (km) : 60564.3
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
    
```

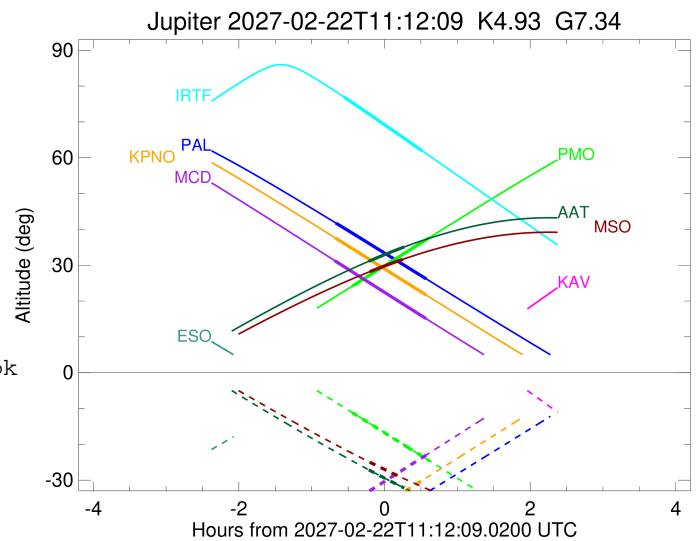
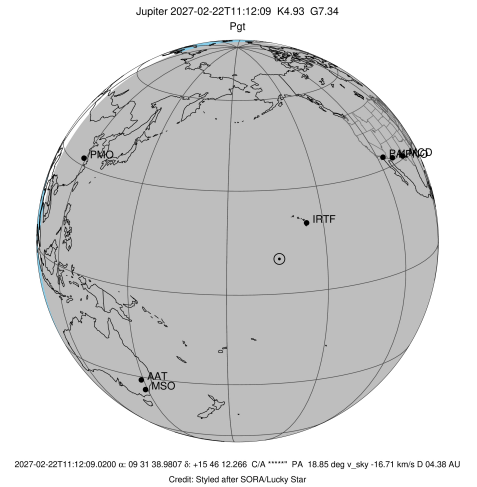


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt   | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I   | 2027-02-22T10:30:58.523 | 31.30 | -39.13  | 71491.8 | -60.16  | -63.21       |
| Jupiter | E   | 2027-02-22T11:46:19.249 | 15.10 | -23.02  | 71491.9 | -55.69  | -59.03       |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2027-02-22T11:10:55.950
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       : 619023298387097856
2Mass ID (if available) : 09313903+1546125
ICRS Star Coord at Epoch: 09h 31m 38.98066s +15:46:12.26555s
RUWE (>1.4 is poor) : 5.83
K magnitude           : 4.926
G magnitude           : 7.341
RP magnitude          : 6.619
BP magnitude          : 7.917
DUPflag              : 1
Distance (au)         : 4.383
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.71
Sun-Target sep (deg) : 166.90
Sun-Moon sep (deg)   : 33.73
B (ring opening deg) : -0.39
PA of pole (deg)     : 20.61
Pole direction: RA (deg): 268.05764
Dec (deg): 64.49665
C/A sky separation (") : 19.989
C/A sky separation (km) : 63542.6
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
    
```

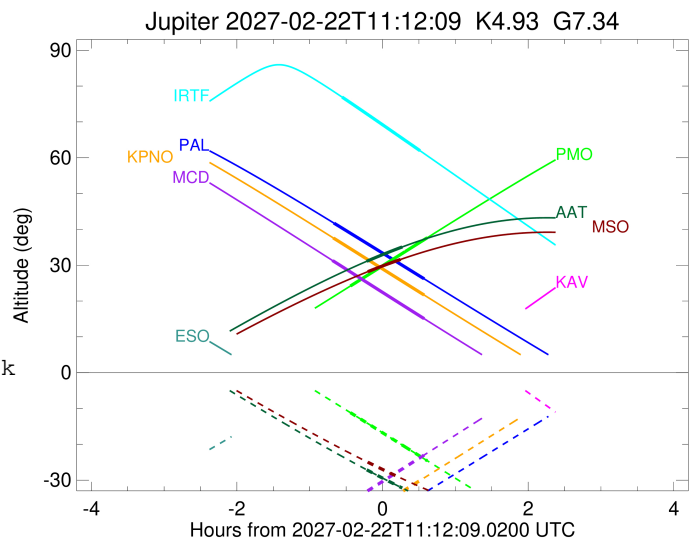
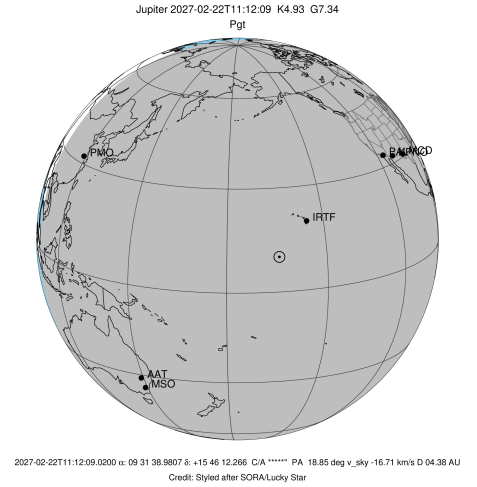


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt   | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I   | 2027-02-22T10:38:58.651 | 76.89 | -80.45  | 71491.8 | -65.05  | -67.72       |
| Jupiter | E   | 2027-02-22T11:42:56.211 | 61.98 | -71.13  | 71491.8 | -60.37  | -63.40       |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2027-02-22T11:13:47.290
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       : 619023298387097856
2Mass ID (if available) : 09313903+1546125
ICRS Star Coord at Epoch: 09h 31m 38.98066s +15:46:12.26555s
RUWE (>1.4 is poor) : 5.83
K magnitude           : 4.926
G magnitude           : 7.341
RP magnitude         : 6.619
BP magnitude         : 7.917
DUPflag              : 1
Distance (au)        : 4.383
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.71
Sun-Target sep (deg) : 166.90
Sun-Moon sep (deg)   : 33.86
B (ring opening deg) : -0.39
PA of pole (deg)     : 20.61
Pole direction: RA (deg): 268.05764
Dec (deg): 64.49665
C/A sky separation (") : 21.992
C/A sky separation (km) : 69911.2
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
    
```



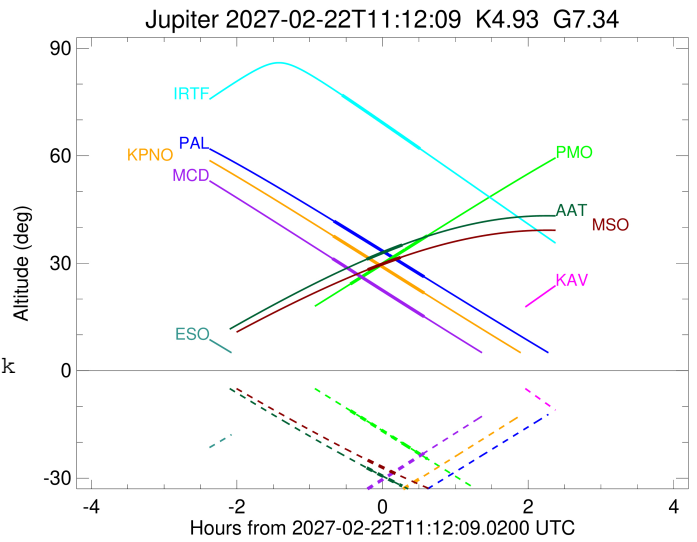
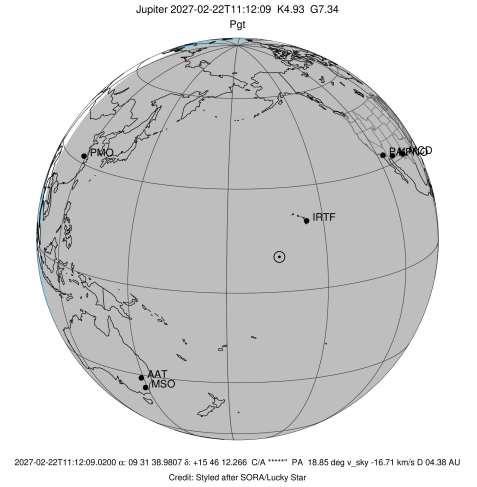
x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt   | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I   | 2027-02-22T10:59:08.583 | 31.09 | -27.11  | 71491.8 | -79.84  | -81.03       |
| Jupiter | E   | 2027-02-22T11:28:25.458 | 35.09 | -32.21  | 71491.8 | -75.97  | -77.58       |



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2027-02-22T11:13:33.570
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       : 619023298387097856
2Mass ID (if available) : 09313903+1546125
ICRS Star Coord at Epoch: 09h 31m 38.98066s +15:46:12.26555s
RUWE (>1.4 is poor) : 5.83
K magnitude           : 4.926
G magnitude           : 7.341
RP magnitude          : 6.619
BP magnitude          : 7.917
DUPflag              : 1
Distance (au)        : 4.383
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.71
Sun-Target sep (deg) : 166.90
Sun-Moon sep (deg)   : 33.80
B (ring opening deg) : -0.39
PA of pole (deg)     : 20.61
Pole direction: RA (deg): 268.05764
Dec (deg): 64.49665
C/A sky separation (") : 22.069
C/A sky separation (km) : 70156.9
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   | 2027-02-22T11:00:04.696 | 28.19 | -25.00  | 71491.8 | -80.82  | -81.89       |
| Jupiter | E   | 2027-02-22T11:27:01.995 | 31.60 | -29.39  | 71491.8 | -76.96  | -78.46       |