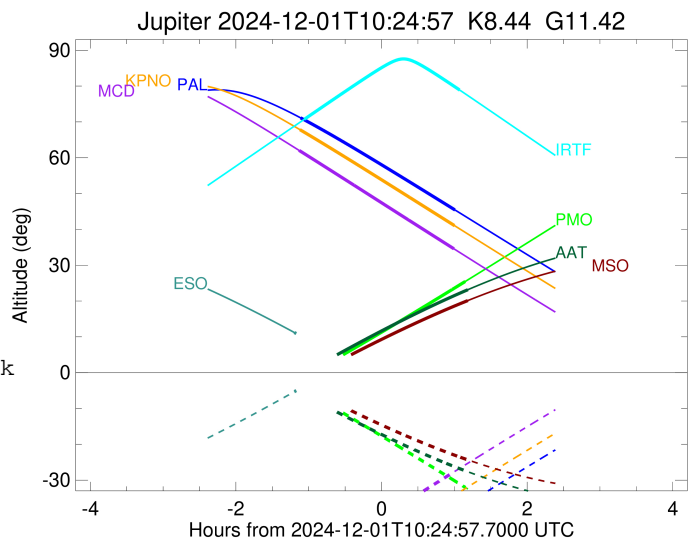
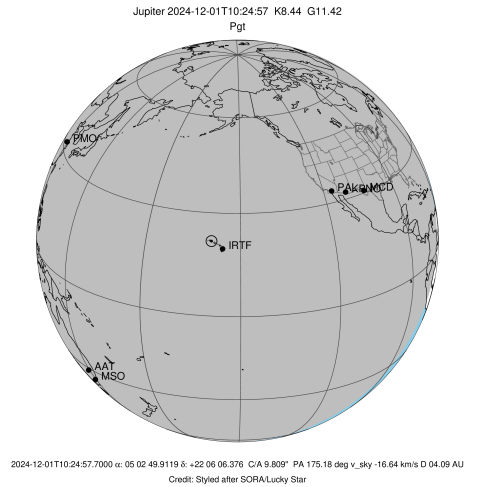



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-01T10:21:49.010
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       : 3412232395756328192
2Mass ID (if available) : 05024991+2206065
ICRS Star Coord at Epoch: 05h 02m 49.91188s +22:06:06.37556s
RUWE (>1.4 is poor) : 9.29
K magnitude           : 8.436
G magnitude           : 11.417
RP magnitude          : 10.516
BP magnitude          : 12.176
DUPflag              : 0
Distance (au)        : 4.093
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.64
Sun-Target sep (deg) : 172.57
Sun-Moon sep (deg)   : 172.65
B (ring opening deg) : 2.87
PA of pole (deg)     : -5.29
Pole direction: RA (deg): 268.05785
Dec (deg): 64.49672
C/A sky separation ("): 10.236
C/A sky separation (km): 30388.1
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
    
```

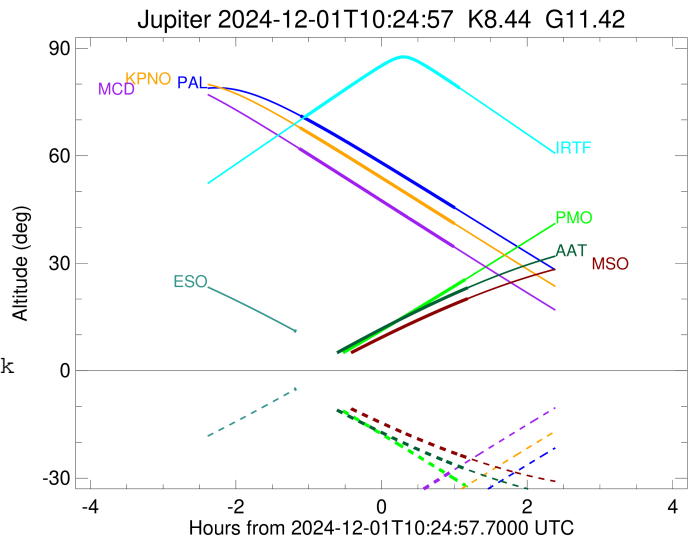
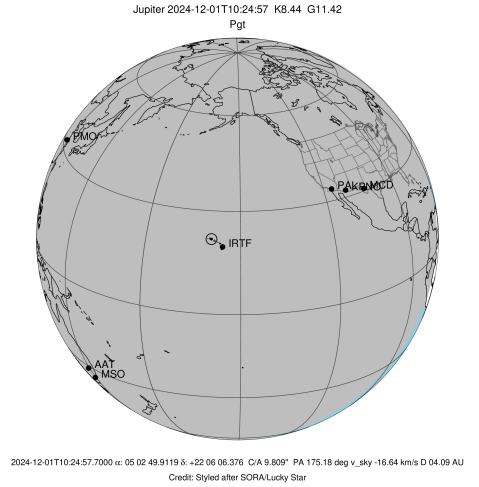


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-01T09:18:22.786	71.11	-64.88	71489.9	25.48	28.55
Jupiter	E	2024-12-01T11:25:27.273	45.43	-38.68	71490.0	24.89	27.91

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2024-12-01T10:30:24.170
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      : 3412232395756328192
2Mass ID (if available) : 05024991+2206065
ICRS Star Coord at Epoch: 05h 02m 49.91188s +22:06:06.37556s
RUWE (>1.4 is poor) : 9.29
K magnitude          : 8.436
G magnitude          : 11.417
RP magnitude         : 10.516
BP magnitude         : 12.176
DUPflag             : 0
Distance (au)       : 4.093
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.64
Sun-Target sep (deg) : 172.57
Sun-Moon sep (deg)  : 171.51
B (ring opening deg) : 2.87
PA of pole (deg)    : -5.29
Pole direction: RA (deg): 268.05785
Dec (deg): 64.49672
C/A sky separation ("): 10.978
C/A sky separation (km): 32591.9
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
    
```

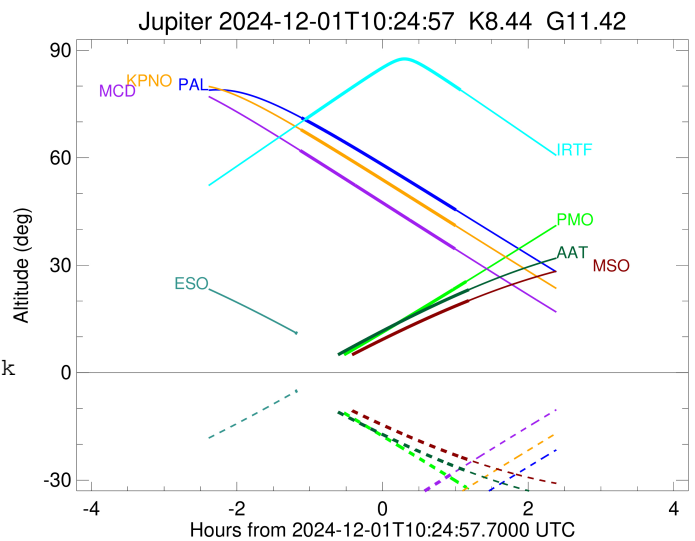
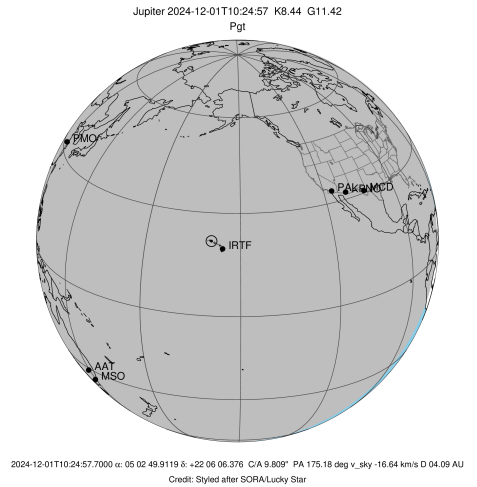


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-01T09:26:25.689	-0.20x	-5.91	71489.5	28.05	31.30
Jupiter	E	2024-12-01T11:33:56.457	25.45	-32.02	71489.8	26.10	29.21

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-01T10:21:21.400
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        : 3412232395756328192
2Mass ID (if available) : 05024991+2206065
ICRS Star Coord at Epoch: 05h 02m 49.91188s +22:06:06.37556s
RUWE (>1.4 is poor) : 9.29
K magnitude           : 8.436
G magnitude           : 11.417
RP magnitude          : 10.516
BP magnitude          : 12.176
DUPflag              : 0
Distance (au)         : 4.093
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.64
Sun-Target sep (deg) : 172.57
Sun-Moon sep (deg)   : 172.70
B (ring opening deg) : 2.87
PA of pole (deg)     : -5.29
Pole direction: RA (deg): 268.05785
Dec (deg): 64.49672
C/A sky separation (") : 10.211
C/A sky separation (km) : 30313.2
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
    
```

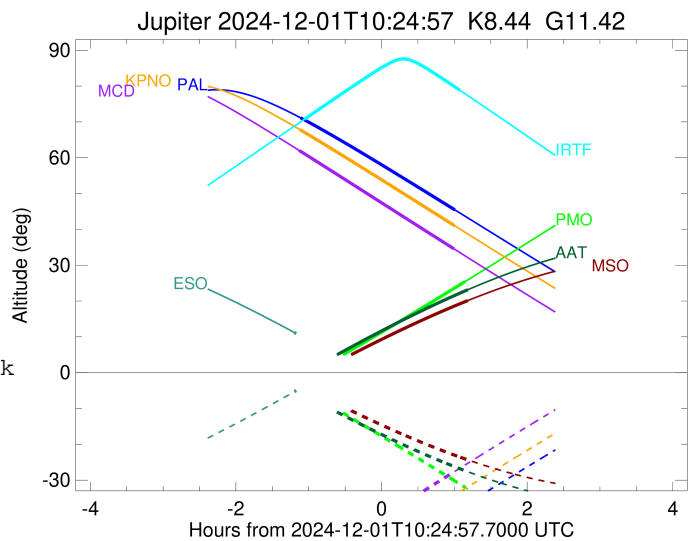
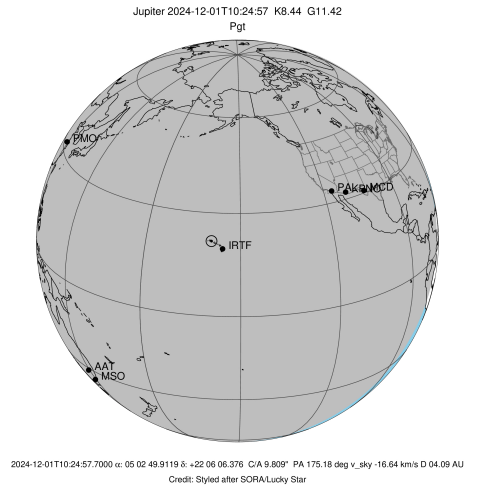


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-01T09:17:50.847	67.80	-61.11	71489.9	25.37	28.43
Jupiter	E	2024-12-01T11:25:06.078	41.05	-34.22	71490.0	24.87	27.89

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2024-12-01T10:20:44.840
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      : 3412232395756328192
2Mass ID (if available) : 05024991+2206065
ICRS Star Coord at Epoch: 05h 02m 49.91188s +22:06:06.37556s
RUWE (>1.4 is poor) : 9.29
K magnitude          : 8.436
G magnitude          : 11.417
RP magnitude         : 10.516
BP magnitude         : 12.176
DUPflag             : 0
Distance (au)       : 4.093
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.64
Sun-Target sep (deg) : 172.57
Sun-Moon sep (deg)  : 172.74
B (ring opening deg) : 2.87
PA of pole (deg)    : -5.29
Pole direction: RA (deg): 268.05785
Dec (deg): 64.49672
C/A sky separation (") : 10.210
C/A sky separation (km) : 30310.9
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
    
```

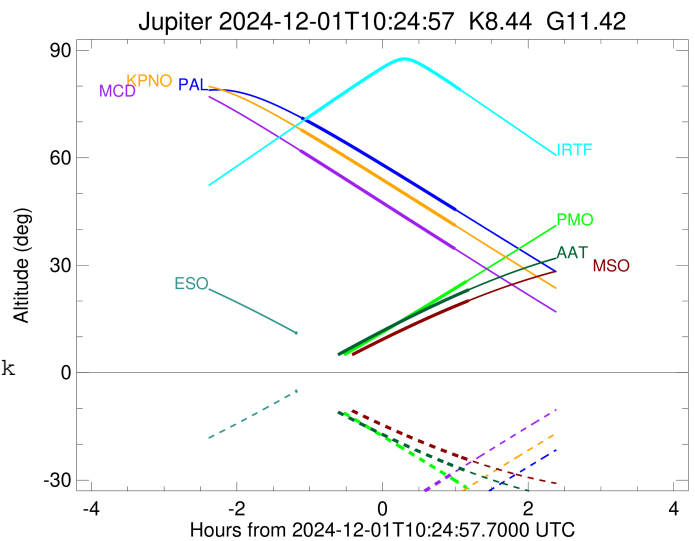
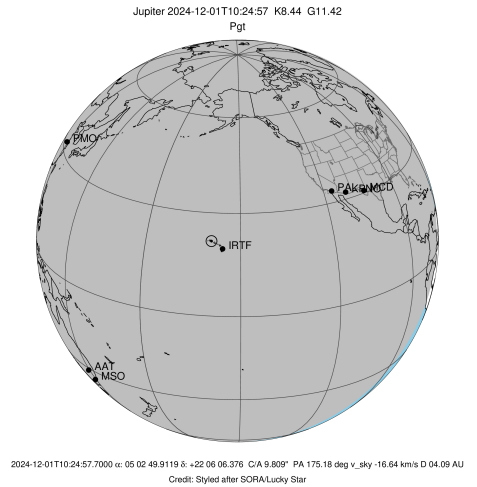


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-01T09:17:09.017	62.02	-55.04	71489.9	25.30	28.35
Jupiter	E	2024-12-01T11:24:37.577	34.58	-27.71	71490.0	24.93	27.95

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2024-12-01T10:25:31.500
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      : 3412232395756328192
2Mass ID (if available) : 05024991+2206065
ICRS Star Coord at Epoch: 05h 02m 49.91188s +22:06:06.37556s
RUWE (>1.4 is poor) : 9.29
K magnitude          : 8.436
G magnitude          : 11.417
RP magnitude         : 10.516
BP magnitude         : 12.176
DUPflag             : 0
Distance (au)       : 4.093
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.64
Sun-Target sep (deg) : 172.57
Sun-Moon sep (deg)  : 172.46
B (ring opening deg) : 2.87
PA of pole (deg)    : -5.29
Pole direction: RA (deg): 268.05785
Dec (deg): 64.49672
C/A sky separation (") : 9.720
C/A sky separation (km) : 28855.5
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
    
```

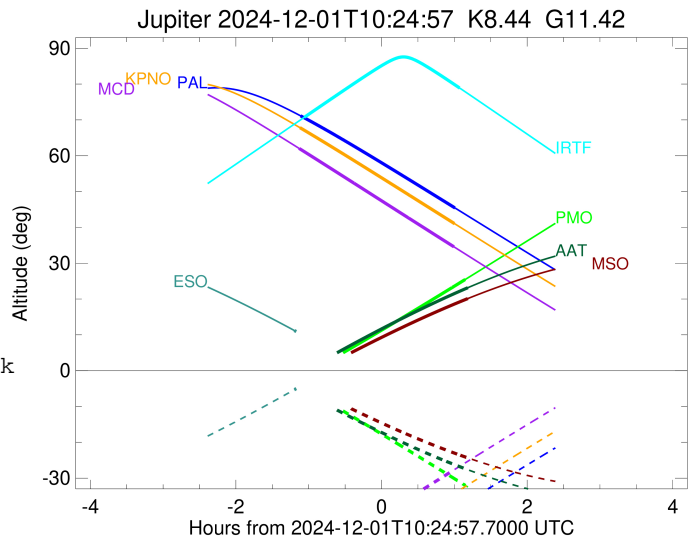
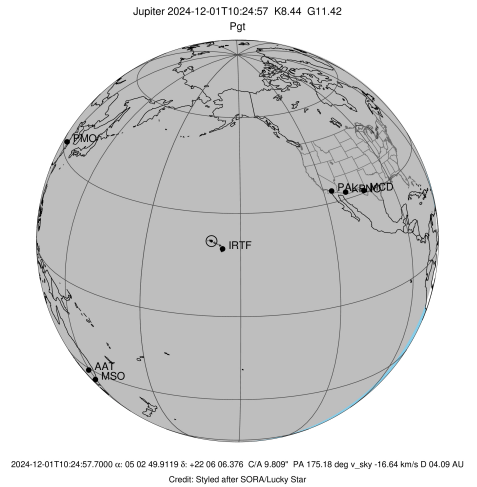


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-01T09:21:39.585	70.79	-78.25	71490.1	24.48	27.47
Jupiter	E	2024-12-01T11:29:19.755	78.90	-71.60	71490.2	23.22	26.09

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2024-12-01T10:19:33.290
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      : 3412232395756328192
2Mass ID (if available) : 05024991+2206065
ICRS Star Coord at Epoch: 05h 02m 49.91188s +22:06:06.37556s
RUWE (>1.4 is poor) : 9.29
K magnitude          : 8.436
G magnitude          : 11.417
RP magnitude         : 10.516
BP magnitude         : 12.176
DUPflag             : 0
Distance (au)       : 4.093
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.64
Sun-Target sep (deg) : 172.57
Sun-Moon sep (deg)  : 173.27
B (ring opening deg) : 2.87
PA of pole (deg)    : -5.29
Pole direction: RA (deg): 268.05785
Dec (deg): 64.49672
C/A sky separation (") : 8.546
C/A sky separation (km) : 25369.8
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
    
```

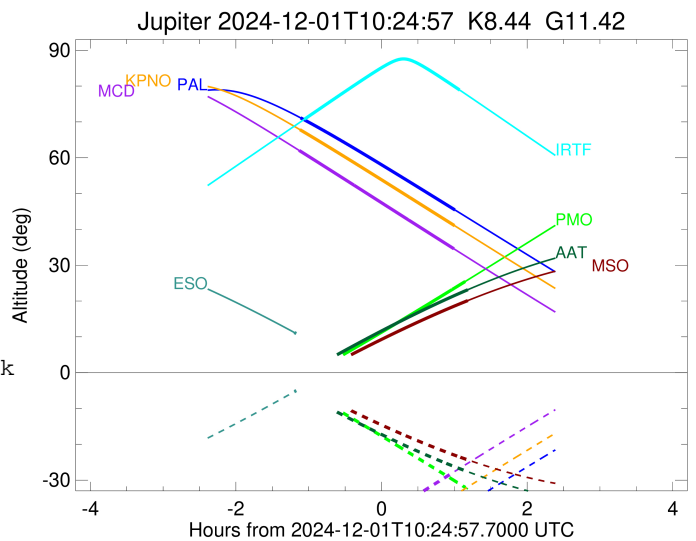
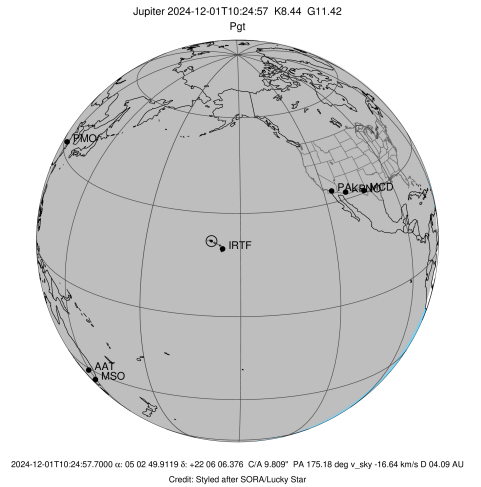


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-01T09:13:12.041	11.20	-5.29	71490.6	20.78	23.43
Jupiter	E	2024-12-01T11:26:21.383	-15.20x	21.81x	71490.6	20.80	23.46


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2024-12-01T10:30:10.250
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       : 3412232395756328192
2Mass ID (if available) : 05024991+2206065
ICRS Star Coord at Epoch: 05h 02m 49.91188s +22:06:06.37556s
RUWE (>1.4 is poor) : 9.29
K magnitude           : 8.436
G magnitude           : 11.417
RP magnitude         : 10.516
BP magnitude         : 12.176
DUPflag              : 0
Distance (au)        : 4.093
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.64
Sun-Target sep (deg) : 172.57
Sun-Moon sep (deg)   : 172.19
B (ring opening deg) : 2.87
PA of pole (deg)     : -5.29
Pole direction: RA (deg): 268.05785
Dec (deg): 64.49672
C/A sky separation (") : 8.541
C/A sky separation (km) : 25357.2
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
    
```

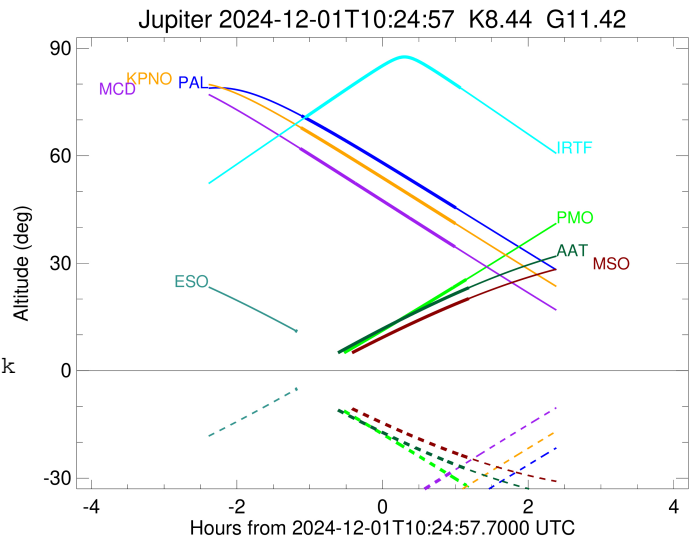
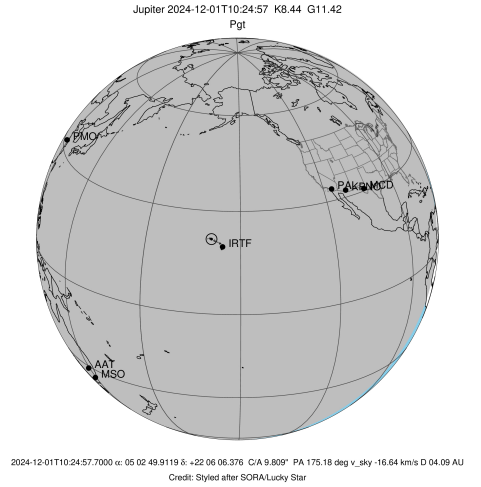


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-01T09:23:47.612	0.34x	-6.56	71490.4	21.73	24.47
Jupiter	E	2024-12-01T11:36:08.439	23.16	-27.66	71490.7	19.82	22.37


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2024-12-01T10:29:58.650
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       : 3412232395756328192
2Mass ID (if available) : 05024991+2206065
ICRS Star Coord at Epoch: 05h 02m 49.91188s +22:06:06.37556s
RUWE (>1.4 is poor) : 9.29
K magnitude          : 8.436
G magnitude          : 11.417
RP magnitude         : 10.516
BP magnitude         : 12.176
DUPflag             : 0
Distance (au)        : 4.093
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.64
Sun-Target sep (deg) : 172.57
Sun-Moon sep (deg)   : 172.23
B (ring opening deg) : 2.87
PA of pole (deg)     : -5.29
Pole direction: RA (deg): 268.05785
Dec (deg): 64.49672
C/A sky separation (") : 8.436
C/A sky separation (km) : 25045.7
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	2024-12-01T09:23:27.250	-1.55x	-4.40x	71490.5	21.44	24.16
Jupiter	E	2024-12-01T11:36:06.532	20.13	-24.34	71490.7	19.57	22.10