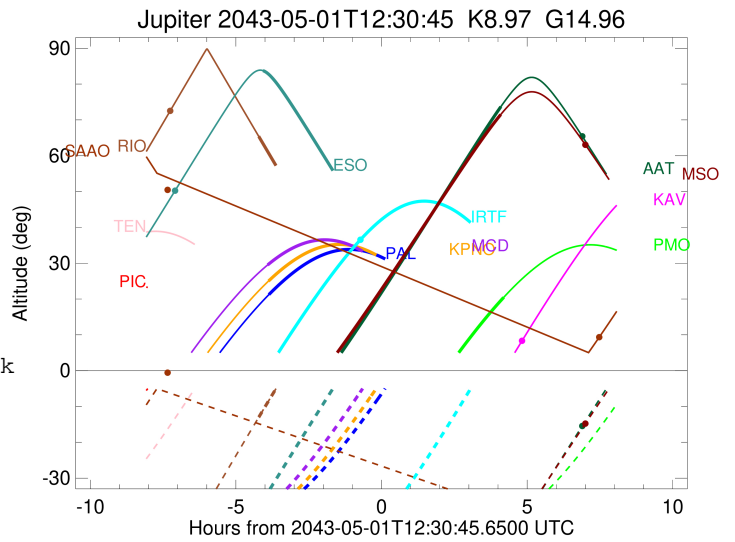
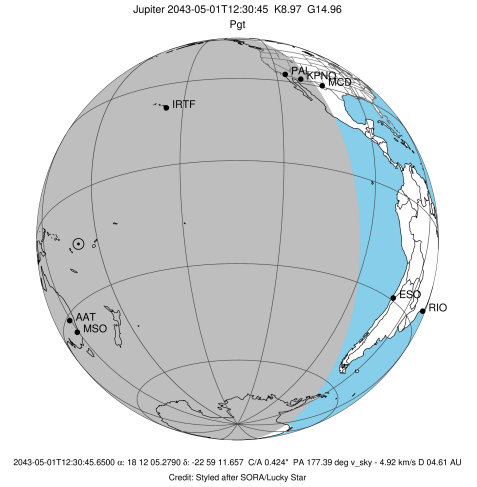




```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-01T12:25:23.830
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        : 4066622134253775360
2Mass ID (if available) : 18120532-2259114
ICRS Star Coord at Epoch: 18h 12m 05.27898s -22:59:11.65700s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 8.970
G magnitude           : 14.956
RP magnitude          : 13.584
BP magnitude          : 17.265
DUPflag              : 0
Distance (au)         : 4.607
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -4.92
Sun-Target sep (deg)  : 127.66
Sun-Moon sep (deg)   : 28.20
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.14
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (") : 1.975
C/A sky separation (km) : 6598.6
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
    
```

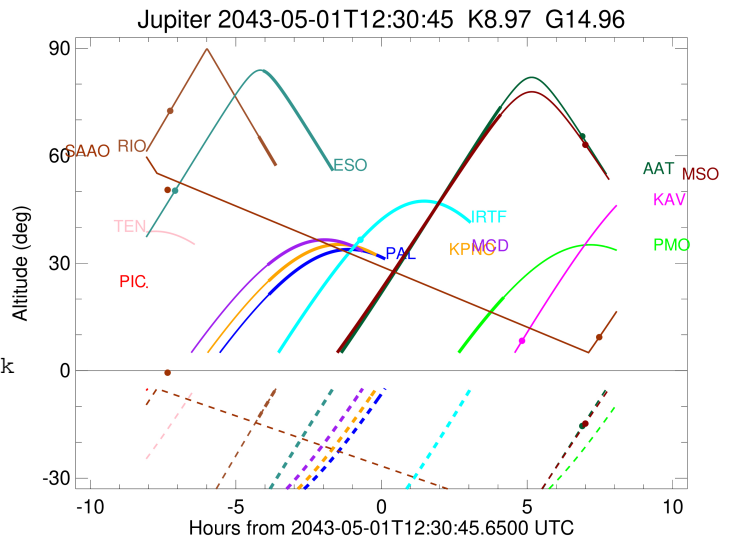
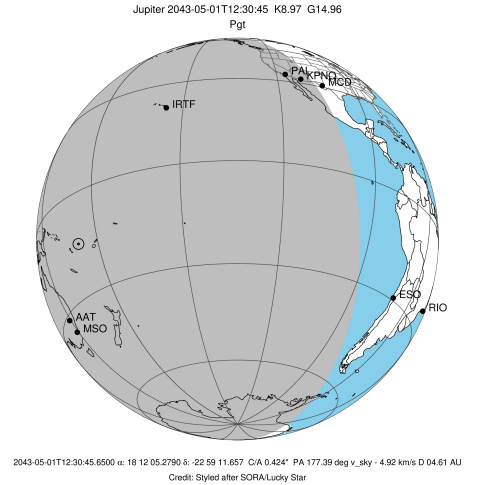


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt   | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I   | 2043-05-01T08:39:01.105 | 21.26 | -40.01  | 71491.9 | 4.65    | 5.31         |
| Jupiter | E   | 2043-05-01T16:13:16.515 | 1.19x | 39.17x  | 71491.9 | 4.50    | 5.14         |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-01T12:47:39.100
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      : 4066622134253775360
2Mass ID (if available) : 18120532-2259114
ICRS Star Coord at Epoch: 18h 12m 05.27898s -22:59:11.65700s
RUWE (>1.4 is poor) : 0.98
K magnitude          : 8.970
G magnitude          : 14.956
RP magnitude         : 13.584
BP magnitude         : 17.265
DUPflag             : 0
Distance (au)       : 4.607
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -4.92
Sun-Target sep (deg) : 127.66
Sun-Moon sep (deg)  : 28.54
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.14
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (") : 1.293
C/A sky separation (km) : 4320.1
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
    
```

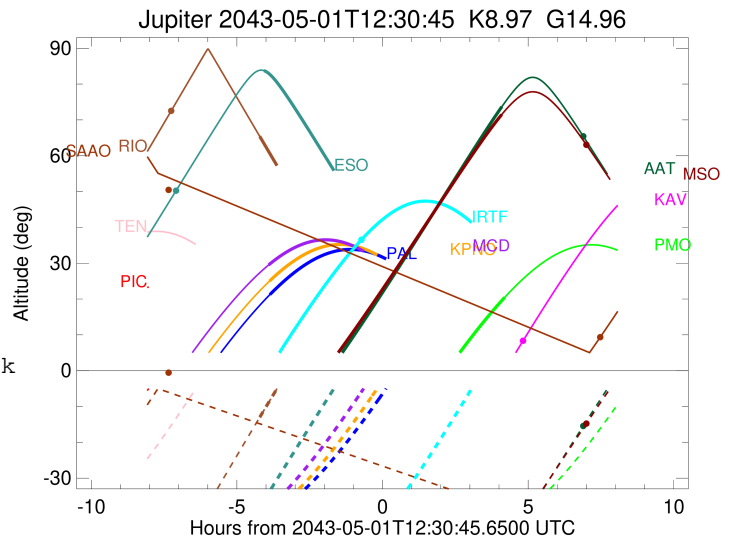
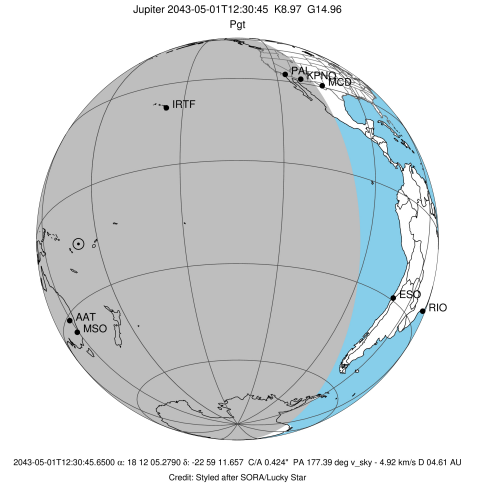


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt     | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|---------|---------|---------|---------|--------------|
| Jupiter | I   | 2043-05-01T08:30:31.978 | -76.15x | 27.09x  | 71492.0 | 1.56    | 1.78         |
| Jupiter | E   | 2043-05-01T16:42:31.498 | 20.46   | -41.91  | 71491.9 | 5.46    | 6.24         |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-01T12:23:54.150
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       : 4066622134253775360
2Mass ID (if available) : 18120532-2259114
ICRS Star Coord at Epoch: 18h 12m 05.27898s -22:59:11.65700s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 8.970
G magnitude           : 14.956
RP magnitude         : 13.584
BP magnitude         : 17.265
DUPflag              : 0
Distance (au)        : 4.607
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -4.92
Sun-Target sep (deg) : 127.66
Sun-Moon sep (deg)  : 28.13
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.14
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 1.925
C/A sky separation (km) : 6433.2
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
    
```

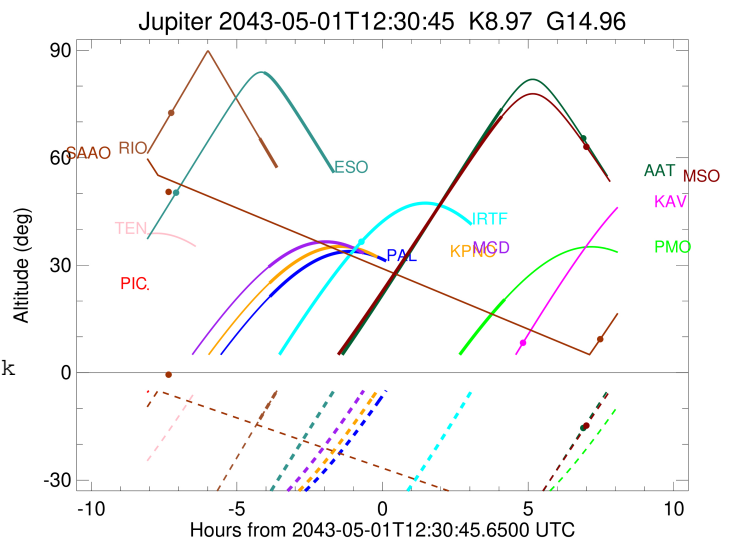
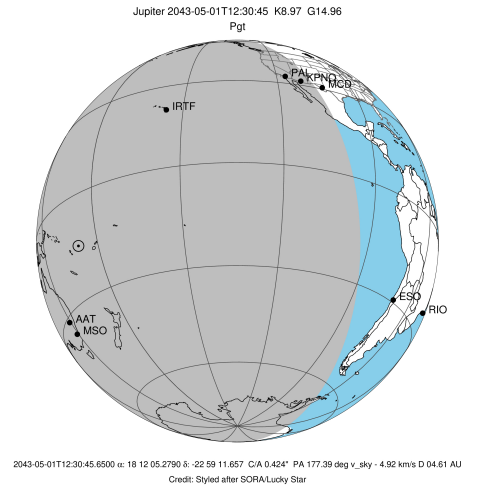


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt    | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|--------|---------|---------|---------|--------------|
| Jupiter | I   | 2043-05-01T08:37:56.969 | 25.00  | -39.83  | 71491.9 | 4.65    | 5.32         |
| Jupiter | E   | 2043-05-01T16:12:42.211 | -2.01x | 43.65x  | 71492.0 | 4.26    | 4.87         |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-01T12:21:48.680
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       : 4066622134253775360
2Mass ID (if available) : 18120532-2259114
ICRS Star Coord at Epoch: 18h 12m 05.27898s -22:59:11.65700s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 8.970
G magnitude           : 14.956
RP magnitude         : 13.584
BP magnitude         : 17.265
DUPflag              : 0
Distance (au)        : 4.607
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -4.92
Sun-Target sep (deg) : 127.66
Sun-Moon sep (deg)   : 28.02
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.14
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 1.859
C/A sky separation (km): 6210.5
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
    
```

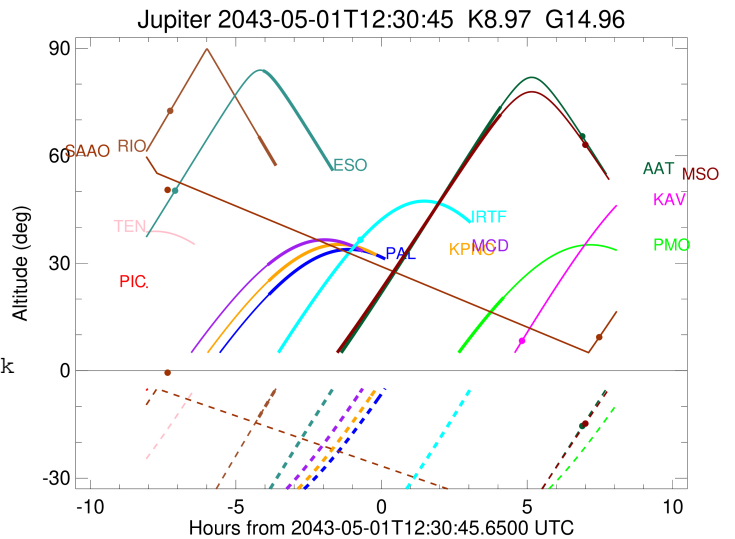
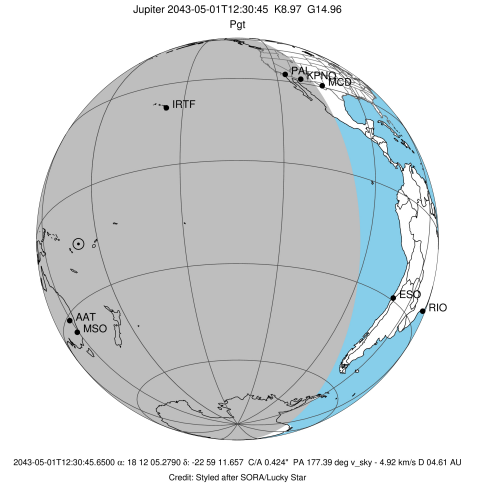


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt    | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|--------|---------|---------|---------|--------------|
| Jupiter | I   | 2043-05-01T08:36:08.265 | 29.50  | -38.11  | 71491.9 | 4.67    | 5.34         |
| Jupiter | E   | 2043-05-01T16:12:14.371 | -7.31x | 50.16x  | 71492.0 | 3.95    | 4.51         |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-01T12:11:09.690
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : RIO
Location              : Rio de Janeiro
Latitude (deg)        : -22.89506
E. Longitude (deg)    : 316.77708
Altitude (km)         : 0.033
Gaia source ID        : 4066622134253775360
2Mass ID (if available) : 18120532-2259114
ICRS Star Coord at Epoch: 18h 12m 05.27898s -22:59:11.65700s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 8.970
G magnitude           : 14.956
RP magnitude          : 13.584
BP magnitude          : 17.265
DUPflag              : 0
Distance (au)         : 4.608
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -4.92
Sun-Target sep (deg)  : 127.66
Sun-Moon sep (deg)   : 27.30
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.14
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (" ) : 0.275
C/A sky separation (km) : 917.6
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
    
```

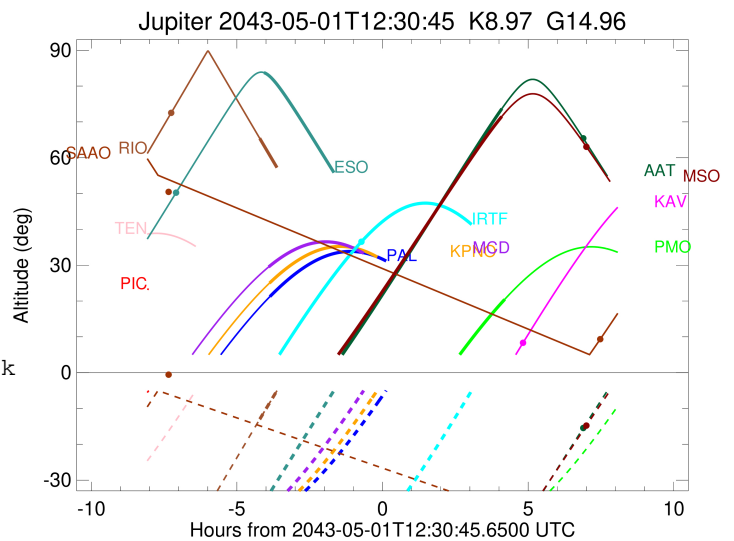
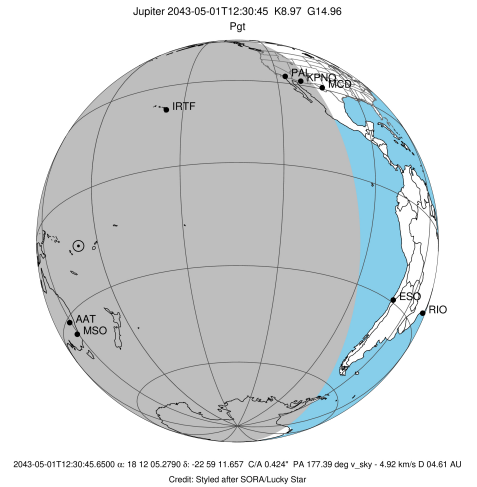


x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt     | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|---------|---------|---------|---------|--------------|
| Jupiter | I   | 2043-05-01T08:17:41.889 | 65.43   | -13.04  | 71492.0 | 0.40    | 0.46         |
| Jupiter | E   | 2043-05-01T16:21:35.806 | -34.69x | 45.92x  | 71492.0 | -1.87   | -2.14        |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-01T12:14:53.250
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       : 4066622134253775360
2Mass ID (if available) : 18120532-2259114
ICRS Star Coord at Epoch: 18h 12m 05.27898s -22:59:11.65700s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 8.970
G magnitude           : 14.956
RP magnitude         : 13.584
BP magnitude         : 17.265
DUPflag              : 0
Distance (au)        : 4.607
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -4.92
Sun-Target sep (deg) : 127.66
Sun-Moon sep (deg)   : 27.60
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.14
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (") : 0.152
C/A sky separation (km) : 506.4
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
    
```



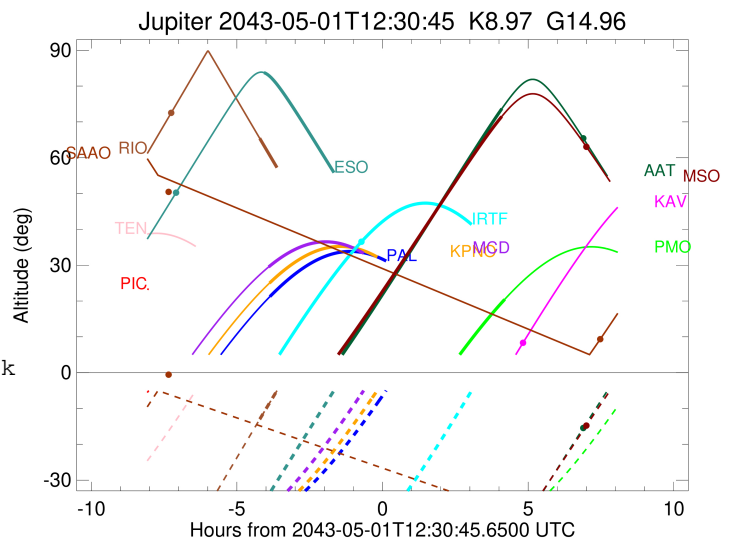
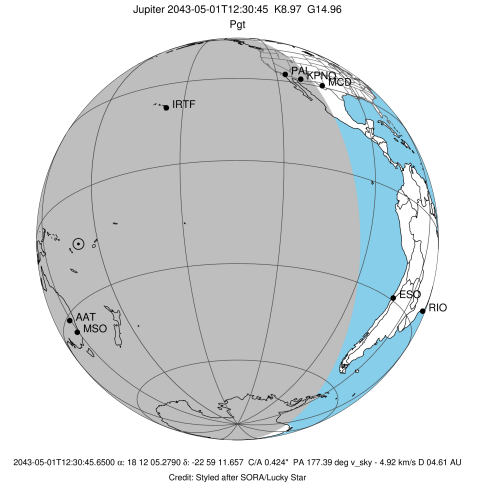
x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt     | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|---------|---------|---------|---------|--------------|
| Jupiter | I   | 2043-05-01T08:26:22.646 | 83.76   | -36.24  | 71492.0 | 0.13    | 0.15         |
| Jupiter | E   | 2043-05-01T16:15:42.025 | -11.57x | 45.33x  | 71492.0 | -1.69   | -1.94        |



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-01T12:48:53.910
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       : 4066622134253775360
2Mass ID (if available) : 18120532-2259114
ICRS Star Coord at Epoch: 18h 12m 05.27898s -22:59:11.65700s
RUWE (>1.4 is poor) : 0.98
K magnitude          : 8.970
G magnitude          : 14.956
RP magnitude         : 13.584
BP magnitude         : 17.265
DUPflag             : 0
Distance (au)        : 4.607
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -4.92
Sun-Target sep (deg) : 127.66
Sun-Moon sep (deg)   : 28.82
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.14
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 0.207
C/A sky separation (km): 691.7
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
    
```



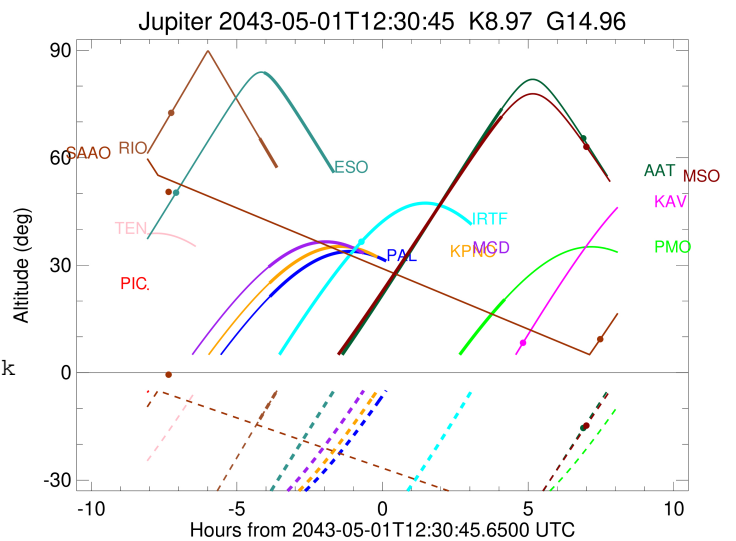
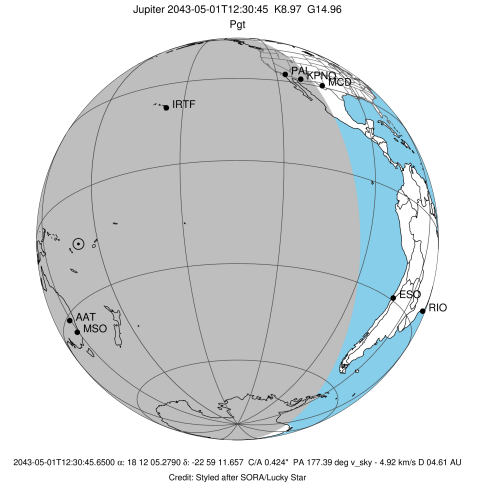
x: target alt < 5.0 deg or sun > -5.0 deg

| Target  | I/E | UTC                     | alt     | alt-sun | radius  | lat-geo | lat-geodetic |
|---------|-----|-------------------------|---------|---------|---------|---------|--------------|
| Jupiter | I   | 2043-05-01T08:40:53.313 | -20.96x | -16.16  | 71492.0 | -2.79   | -3.19        |
| Jupiter | E   | 2043-05-01T16:36:39.281 | 73.69   | -51.06  | 71492.0 | 0.90    | 1.03         |



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-01T12:48:13.150
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       : 4066622134253775360
2Mass ID (if available) : 18120532-2259114
ICRS Star Coord at Epoch: 18h 12m 05.27898s -22:59:11.65700s
RUWE (>1.4 is poor) : 0.98
K magnitude          : 8.970
G magnitude          : 14.956
RP magnitude         : 13.584
BP magnitude         : 17.265
DUPflag             : 0
Distance (au)        : 4.607
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -4.92
Sun-Target sep (deg) : 127.66
Sun-Moon sep (deg)   : 28.79
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.14
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 0.324
C/A sky separation (km): 1083.8
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   | 2043-05-01T08:40:20.419 | -18.14x | -16.54  | 71492.0 | -3.03   | -3.46        |
| Jupiter | E   | 2043-05-01T16:36:32.063 | 71.51   | -49.92  | 71492.0 | 0.55    | 0.63         |