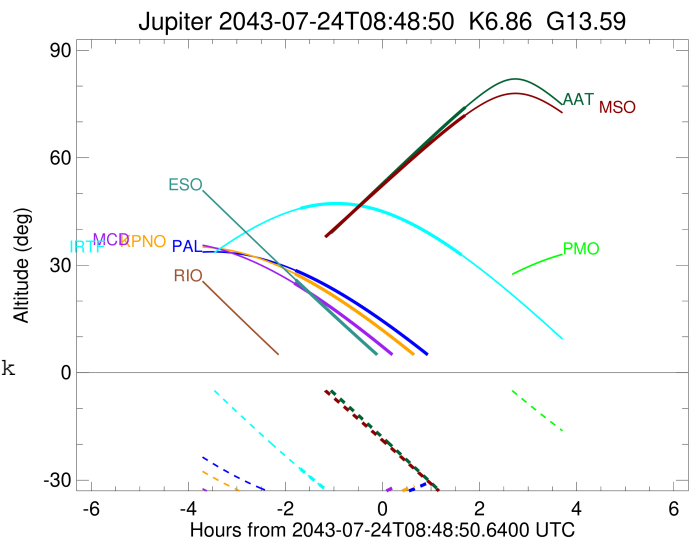
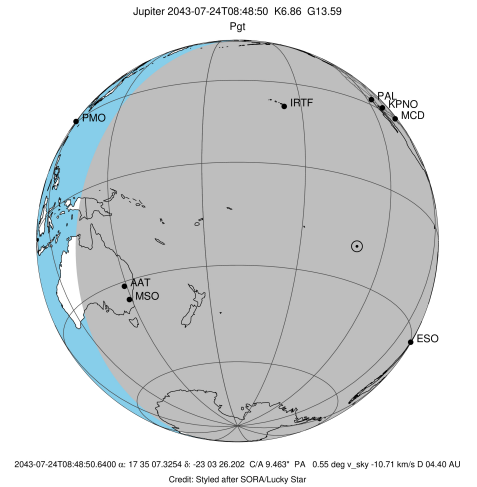



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-24T08:41:59.020
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      : 4116687361077849600
2Mass ID (if available) : 17350732-2303260
ICRS Star Coord at Epoch: 17h 35m 07.32536s -23:03:26.20202s
RUWE (>1.4 is poor) : 0.84
K magnitude          : 6.856
G magnitude          : 13.588
RP magnitude         : 12.018
BP magnitude         : 17.444
DUPflag             : 0
Distance (au)        : 4.403
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -10.71
Sun-Target sep (deg) : 143.49
Sun-Moon sep (deg)  : 63.26
B (ring opening deg) : -2.38
PA of pole (deg)    : 1.84
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49731
C/A sky separation (" ) : 8.032
C/A sky separation (km) : 25649.1
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
    
```

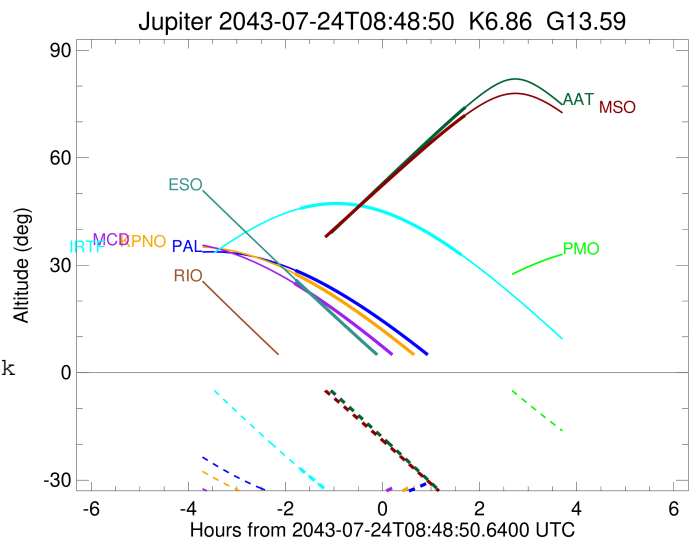
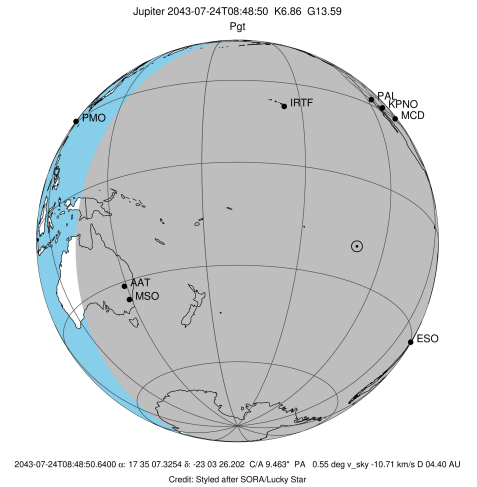


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-24T07:01:11.980	28.55	-35.49	71490.9	-21.81	-24.57
Jupiter	E	2043-07-24T10:24:12.416	-2.24x	-26.01	71491.1	-20.42	-23.04

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-24T08:41:23.560
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        : 4116687361077849600
2Mass ID (if available) : 17350732-2303260
ICRS Star Coord at Epoch: 17h 35m 07.32536s -23:03:26.20202s
RUWE (>1.4 is poor)  : 0.84
K magnitude           : 6.856
G magnitude           : 13.588
RP magnitude          : 12.018
BP magnitude          : 17.444
DUPflag              : 0
Distance (au)         : 4.403
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -10.71
Sun-Target sep (deg)  : 143.49
Sun-Moon sep (deg)    : 63.19
B (ring opening deg)  : -2.38
PA of pole (deg)      : 1.84
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49731
C/A sky separation (") : 8.110
C/A sky separation (km) : 25899.4
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
    
```

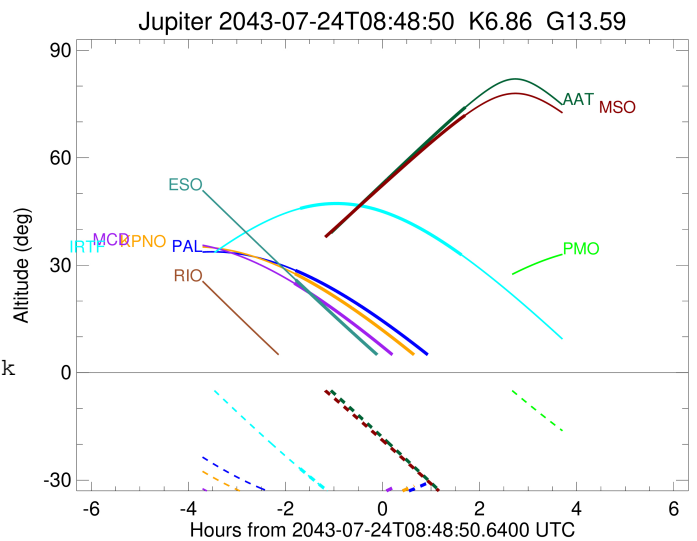
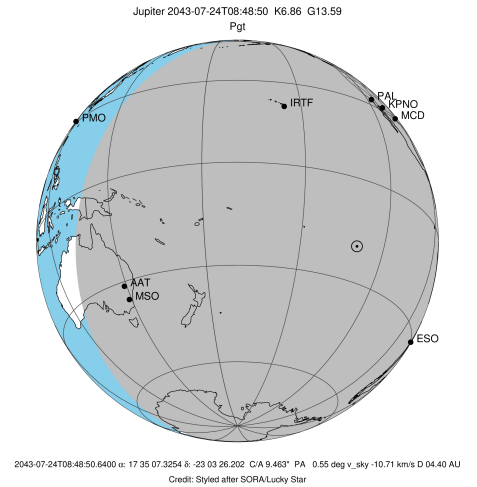


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-24T07:00:35.164	27.61	-37.77	71490.9	-21.97	-24.73
Jupiter	E	2043-07-24T10:23:45.053	-5.59x	-24.13	71491.0	-20.68	-23.32

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-24T08:40:41.330
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      : 4116687361077849600
2Mass ID (if available) : 17350732-2303260
ICRS Star Coord at Epoch: 17h 35m 07.32536s -23:03:26.20202s
RUWE (>1.4 is poor) : 0.84
K magnitude         : 6.856
G magnitude         : 13.588
RP magnitude        : 12.018
BP magnitude        : 17.444
DUPflag            : 0
Distance (au)       : 4.403
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -10.71
Sun-Target sep (deg) : 143.49
Sun-Moon sep (deg)  : 63.10
B (ring opening deg) : -2.38
PA of pole (deg)    : 1.84
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49731
C/A sky separation (" ) : 8.215
C/A sky separation (km) : 26235.0
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
    
```

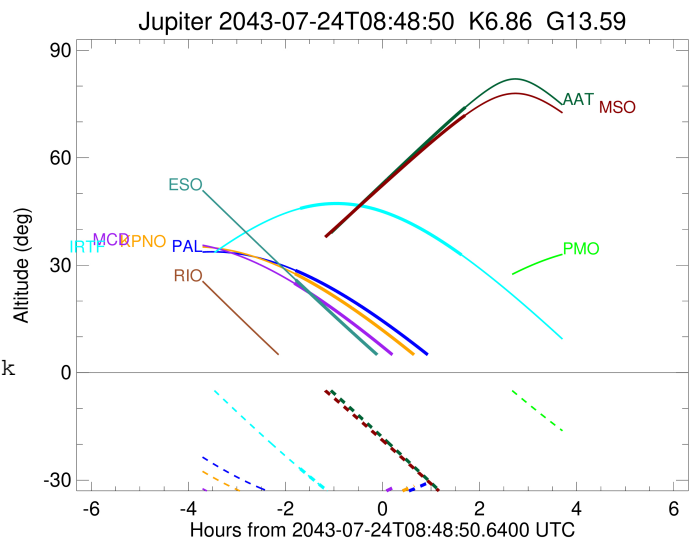
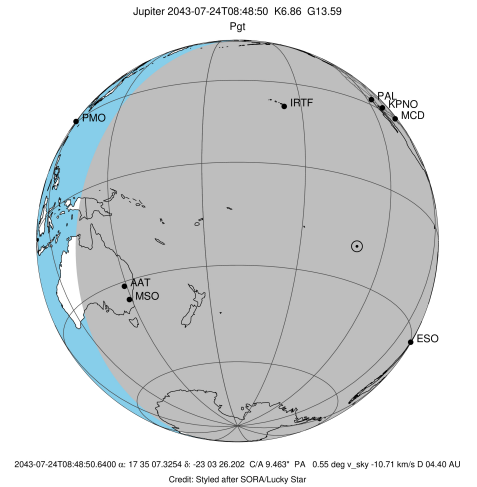


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-24T06:59:45.961	24.97	-39.63	71490.9	-22.17	-24.96
Jupiter	E	2043-07-24T10:23:18.191	-11.02x	-20.30	71491.0	-21.02	-23.69

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-24T08:46:31.280
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      : 4116687361077849600
2Mass ID (if available) : 17350732-2303260
ICRS Star Coord at Epoch: 17h 35m 07.32536s -23:03:26.20202s
RUWE (>1.4 is poor) : 0.84
K magnitude          : 6.856
G magnitude          : 13.588
RP magnitude         : 12.018
BP magnitude         : 17.444
DUPflag             : 0
Distance (au)       : 4.403
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -10.71
Sun-Target sep (deg) : 143.49
Sun-Moon sep (deg)  : 63.83
B (ring opening deg) : -2.38
PA of pole (deg)    : 1.84
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49731
C/A sky separation ("): 8.115
C/A sky separation (km) : 25914.4
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
    
```

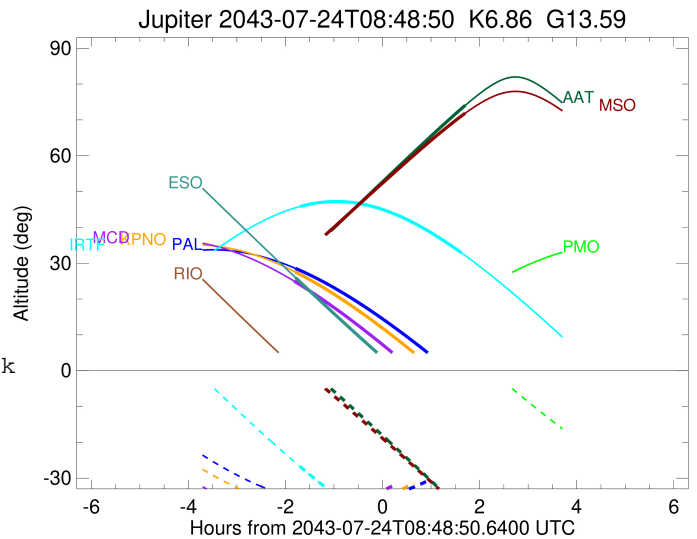
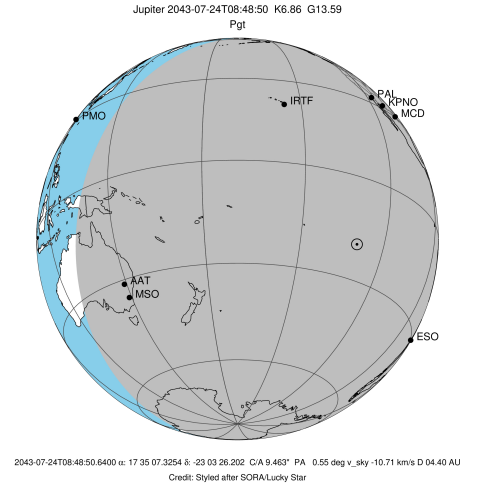


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-24T07:07:06.730	45.84	-26.80	71490.9	-22.52	-25.33
Jupiter	E	2043-07-24T10:26:30.883	32.88	-50.46	71491.1	-20.32	-22.93

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-24T08:39:26.540
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      : 4116687361077849600
2Mass ID (if available) : 17350732-2303260
ICRS Star Coord at Epoch: 17h 35m 07.32536s -23:03:26.20202s
RUWE (>1.4 is poor) : 0.84
K magnitude          : 6.856
G magnitude          : 13.588
RP magnitude         : 12.018
BP magnitude         : 17.444
DUPflag             : 0
Distance (au)       : 4.403
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -10.71
Sun-Target sep (deg) : 143.49
Sun-Moon sep (deg)  : 62.96
B (ring opening deg) : -2.38
PA of pole (deg)    : 1.84
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49731
C/A sky separation ("): 10.418
C/A sky separation (km): 33270.2
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
    
```

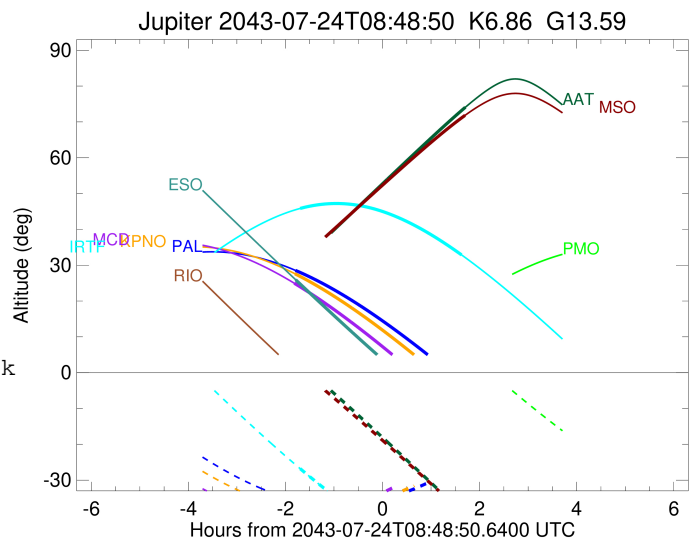
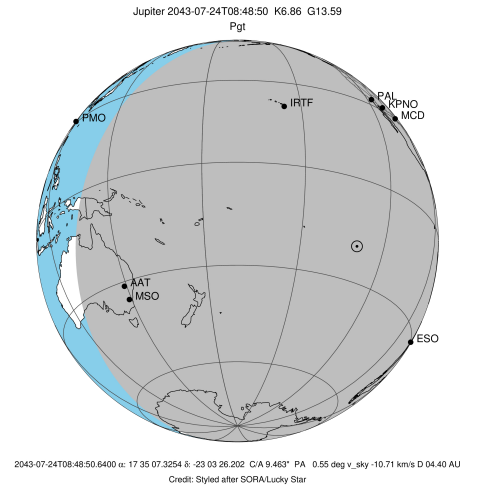


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-24T07:01:28.999	25.94	-58.69	71490.3	-28.16	-31.42
Jupiter	E	2043-07-24T10:19:13.759	-13.40x	-15.84	71490.4	-27.23	-30.42

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-24T08:54:42.500
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       : 4116687361077849600
2Mass ID (if available) : 17350732-2303260
ICRS Star Coord at Epoch: 17h 35m 07.32536s -23:03:26.20202s
RUWE (>1.4 is poor) : 0.84
K magnitude           : 6.856
G magnitude           : 13.588
RP magnitude          : 12.018
BP magnitude          : 17.444
DUPflag              : 0
Distance (au)        : 4.403
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -10.71
Sun-Target sep (deg) : 143.49
Sun-Moon sep (deg)   : 64.20
B (ring opening deg) : -2.38
PA of pole (deg)     : 1.84
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49731
C/A sky separation ("): 9.892
C/A sky separation (km): 31589.3
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
    
```

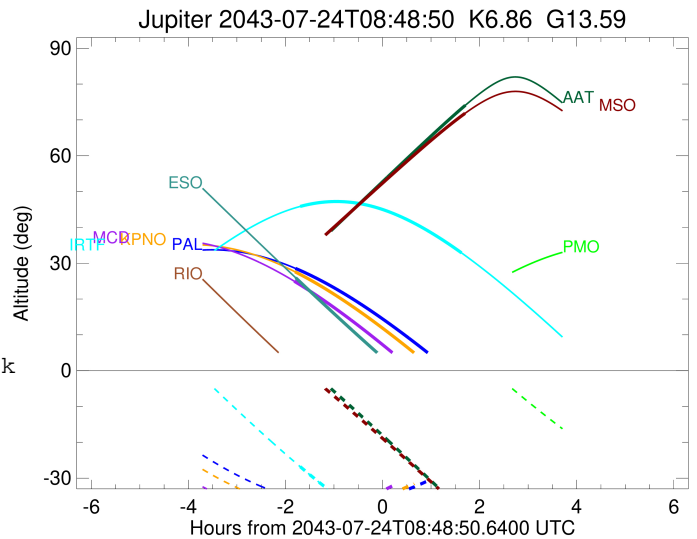
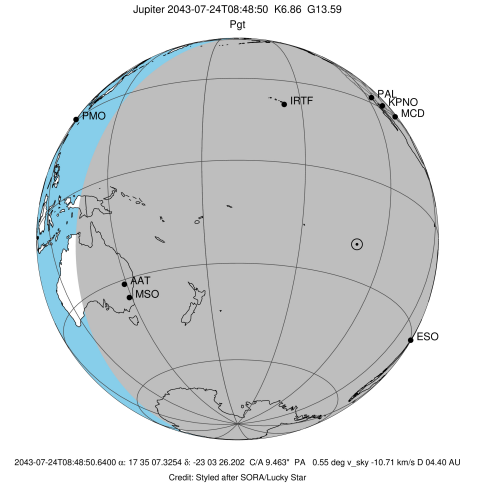


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-24T07:17:18.882	33.12	0.50x	71490.3	-28.13	-31.39
Jupiter	E	2043-07-24T10:31:18.980	74.09	-39.82	71490.7	-24.53	-27.51

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-24T08:54:27.600
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       : 4116687361077849600
2Mass ID (if available) : 17350732-2303260
ICRS Star Coord at Epoch: 17h 35m 07.32536s -23:03:26.20202s
RUWE (>1.4 is poor) : 0.84
K magnitude           : 6.856
G magnitude           : 13.588
RP magnitude          : 12.018
BP magnitude          : 17.444
DUPflag              : 0
Distance (au)        : 4.403
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -10.71
Sun-Target sep (deg) : 143.49
Sun-Moon sep (deg)   : 64.19
B (ring opening deg) : -2.38
PA of pole (deg)     : 1.84
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49731
C/A sky separation ("): 10.023
C/A sky separation (km): 32010.1
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	2043-07-24T07:17:16.733	33.60	-1.07x	71490.2	-28.48	-31.76
Jupiter	E	2043-07-24T10:30:53.890	71.83	-39.62	71490.6	-24.92	-27.94