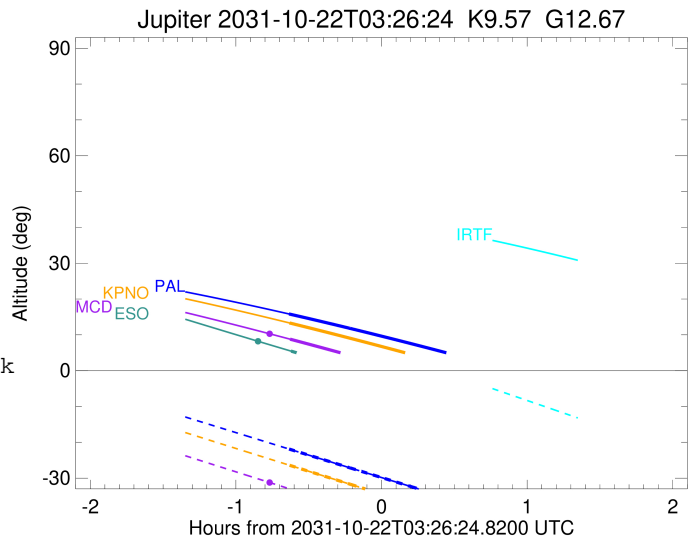
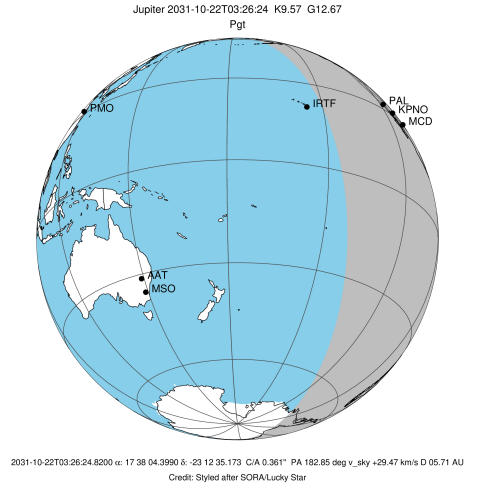



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-22T03:28:56.800
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       : 4116526901096562432
2Mass ID (if available) : 17380440-2312349
ICRS Star Coord at Epoch: 17h 38m 04.39897s -23:12:35.17278s
RUWE (>1.4 is poor) : 0.74
K magnitude          : 9.573
G magnitude          : 12.669
RP magnitude         : 11.760
BP magnitude         : 13.524
DUPflag              : 0
Distance (au)        : 5.713
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 29.47
Sun-Target sep (deg) : 56.87
Sun-Moon sep (deg)  : 17.36
B (ring opening deg) : -2.25
PA of pole (deg)    : 1.52
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (") : 1.442
C/A sky separation (km) : 5972.6
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
    
```

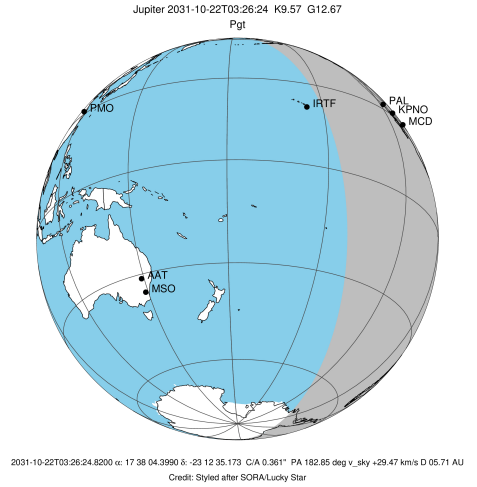


x: target alt < 5.0 deg or sun > -5.0 deg

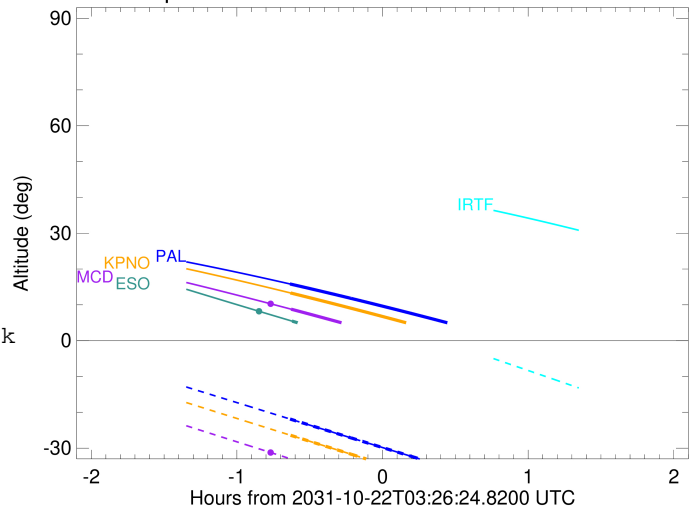
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-22T02:48:20.228	15.82	-21.88	71492.0	3.69	4.22
Jupiter	E	2031-10-22T04:09:27.428	2.05x	-38.70	71491.9	5.85	6.68

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-10-22T03:29:07.360
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        : 4116526901096562432
2Mass ID (if available) : 17380440-2312349
ICRS Star Coord at Epoch: 17h 38m 04.39897s -23:12:35.17278s
RUWE (>1.4 is poor) : 0.74
K magnitude           : 9.573
G magnitude           : 12.669
RP magnitude          : 11.760
BP magnitude          : 13.524
DUPflag              : 0
Distance (au)         : 5.713
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 29.47
Sun-Target sep (deg)  : 56.87
Sun-Moon sep (deg)    : 17.31
B (ring opening deg) : -2.25
PA of pole (deg)      : 1.52
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (") : 1.377
C/A sky separation (km) : 5706.6
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
    
```



Jupiter 2031-10-22T03:26:24 K9.57 G12.67

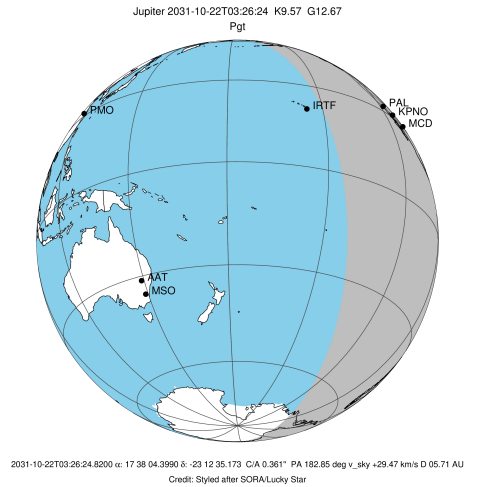


x: target alt < 5.0 deg or sun > -5.0 deg

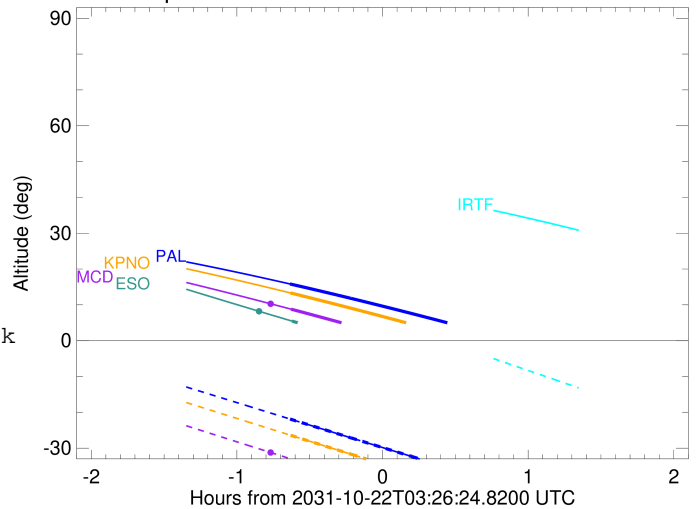
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-22T02:48:32.322	13.31	-26.41	71492.0	3.50	4.00
Jupiter	E	2031-10-22T04:09:36.135	-1.23x	-43.38	71491.9	5.62	6.42

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-22T03:29:18.780
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      : 4116526901096562432
2Mass ID (if available) : 17380440-2312349
ICRS Star Coord at Epoch: 17h 38m 04.39897s -23:12:35.17278s
RUWE (>1.4 is poor) : 0.74
K magnitude          : 9.573
G magnitude          : 12.669
RP magnitude         : 11.760
BP magnitude         : 13.524
DUPflag             : 0
Distance (au)       : 5.713
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 29.47
Sun-Target sep (deg) : 56.87
Sun-Moon sep (deg)  : 17.24
B (ring opening deg) : -2.25
PA of pole (deg)    : 1.52
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (" ) : 1.291
C/A sky separation (km) : 5350.7
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
    
```



Jupiter 2031-10-22T03:26:24 K9.57 G12.67

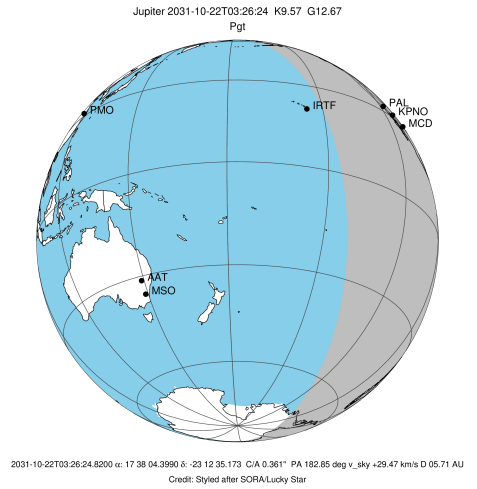


x: target alt < 5.0 deg or sun > -5.0 deg

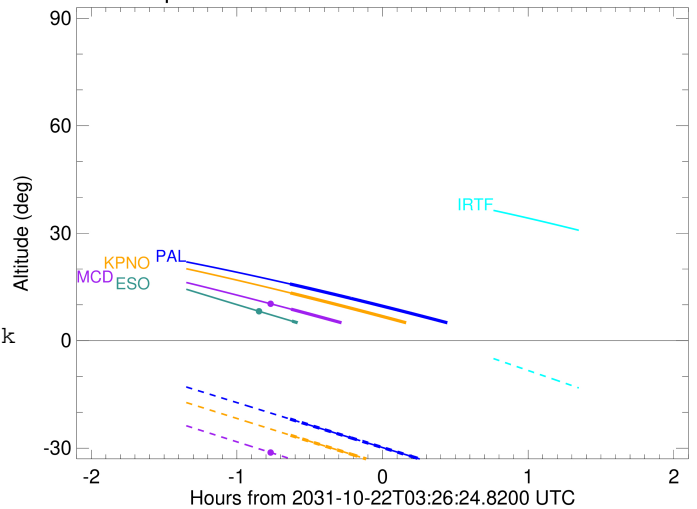
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-22T02:48:46.564	8.79	-33.03	71492.0	3.24	3.70
Jupiter	E	2031-10-22T04:09:44.413	-6.60x	-49.96	71491.9	5.31	6.07

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-22T03:29:30.550
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      : 4116526901096562432
2Mass ID (if available) : 17380440-2312349
ICRS Star Coord at Epoch: 17h 38m 04.39897s -23:12:35.17278s
RUWE (>1.4 is poor) : 0.74
K magnitude          : 9.573
G magnitude          : 12.669
RP magnitude         : 11.760
BP magnitude         : 13.524
DUPflag             : 0
Distance (au)        : 5.713
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 29.47
Sun-Target sep (deg) : 56.87
Sun-Moon sep (deg)  : 17.43
B (ring opening deg) : -2.25
PA of pole (deg)    : 1.52
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (" ) : 0.414
C/A sky separation (km) : 1713.5
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
    
```



Jupiter 2031-10-22T03:26:24 K9.57 G12.67



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	2031-10-22T02:49:11.181	5.45	-43.47	71492.0	-2.38	-2.73
Jupiter	E	2031-10-22T04:09:43.360	-10.02x	-49.71	71492.0	-0.35	-0.40