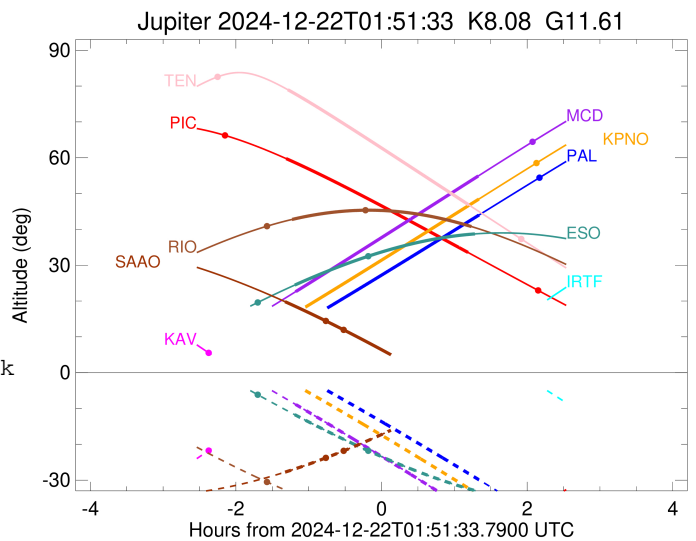
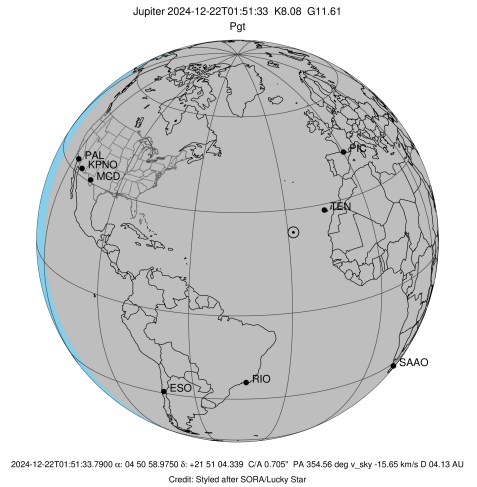



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-22T01:47:46.560
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PIC
Location              : Pic du Midi
Latitude (deg)        : 42.93656
E. Longitude (deg)    : 0.14231
Altitude (km)         : 2.890
Gaia source ID        : 3412783624742018176
2Mass ID (if available) : 04505897+2151044
ICRS Star Coord at Epoch: 04h 50m 58.97498s +21:51:04.33891s
RUWE (>1.4 is poor) : 1.33
K magnitude           : 8.080
G magnitude           : 11.606
RP magnitude          : 10.618
BP magnitude          : 12.587
DUPflag              : 0
Distance (au)         : 4.128
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.65
Sun-Target sep (deg)  : 163.65
Sun-Moon sep (deg)    : 97.80
B (ring opening deg) : 2.84
PA of pole (deg)      : -6.54
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation (") : 0.106
C/A sky separation (km) : 316.2
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
    
```

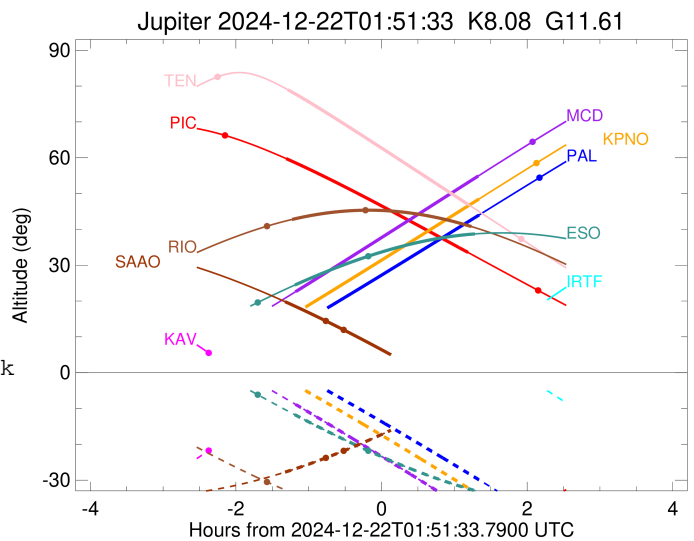
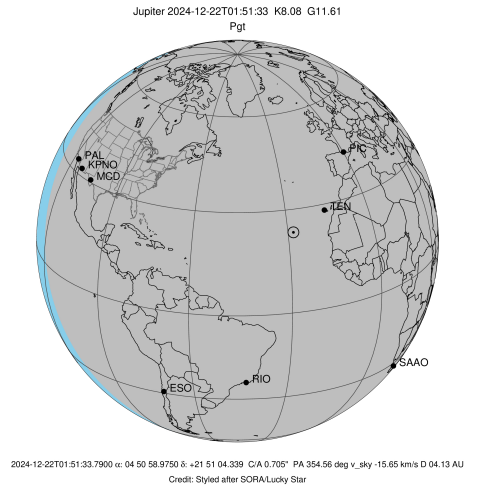


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-22T00:33:01.074	59.74	-69.38	71492.0	1.18	1.35
Jupiter	E	2024-12-22T03:02:55.459	33.54	-47.41	71492.0	-0.54	-0.62

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-22T01:56:37.580
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        : 3412783624742018176
2Mass ID (if available) : 04505897+2151044
ICRS Star Coord at Epoch: 04h 50m 58.97498s +21:51:04.33891s
RUWE (>1.4 is poor) : 1.33
K magnitude           : 8.080
G magnitude           : 11.606
RP magnitude          : 10.618
BP magnitude          : 12.587
DUPflag              : 0
Distance (au)         : 4.128
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.65
Sun-Target sep (deg)  : 163.65
Sun-Moon sep (deg)    : 97.40
B (ring opening deg) : 2.84
PA of pole (deg)      : -6.54
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation (") : 0.284
C/A sky separation (km) : 850.0
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
    
```

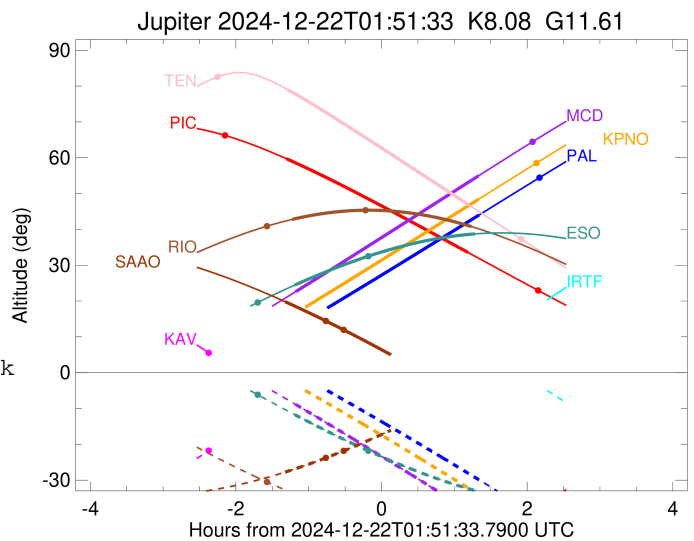
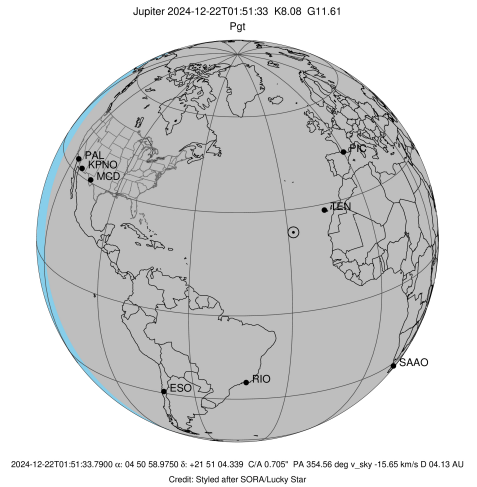


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-22T00:40:48.830	12.80	-0.12x	71492.0	2.32	2.65
Jupiter	E	2024-12-22T03:11:53.814	44.00	-29.90	71492.0	-0.94	-1.07

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-22T01:56:31.890
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        : 3412783624742018176
2Mass ID (if available) : 04505897+2151044
ICRS Star Coord at Epoch: 04h 50m 58.97498s +21:51:04.33891s
RUWE (>1.4 is poor) : 1.33
K magnitude           : 8.080
G magnitude           : 11.606
RP magnitude          : 10.618
BP magnitude          : 12.587
DUPflag              : 0
Distance (au)         : 4.128
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.65
Sun-Target sep (deg) : 163.65
Sun-Moon sep (deg)   : 97.46
B (ring opening deg) : 2.84
PA of pole (deg)     : -6.54
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation (") : 0.180
C/A sky separation (km) : 539.9
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
    
```

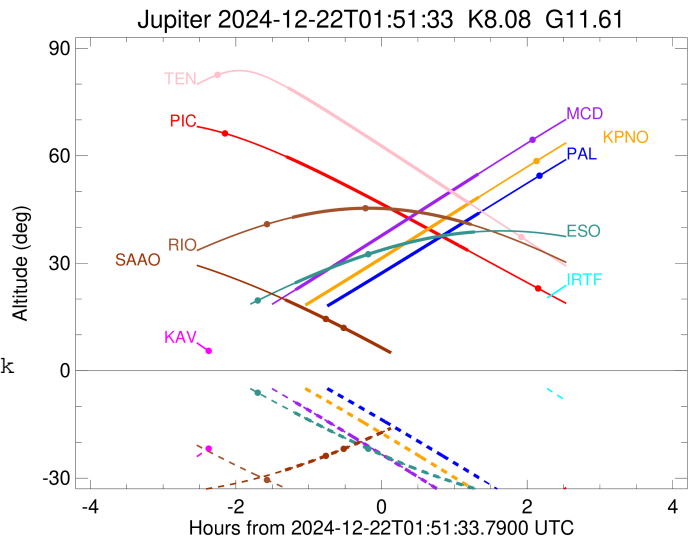
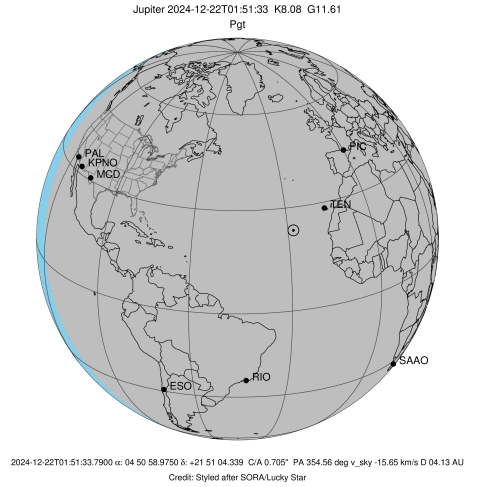


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-22T00:40:53.415	16.66	-3.47x	71492.0	2.08	2.38
Jupiter	E	2024-12-22T03:11:38.751	48.42	-34.01	71492.0	-1.18	-1.34

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-22T01:56:15.660
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       : 3412783624742018176
2Mass ID (if available) : 04505897+2151044
ICRS Star Coord at Epoch: 04h 50m 58.97498s +21:51:04.33891s
RUWE (>1.4 is poor) : 1.33
K magnitude           : 8.080
G magnitude           : 11.606
RP magnitude          : 10.618
BP magnitude          : 12.587
DUPflag              : 0
Distance (au)        : 4.128
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.65
Sun-Target sep (deg) : 163.65
Sun-Moon sep (deg)   : 97.54
B (ring opening deg) : 2.84
PA of pole (deg)     : -6.54
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation (") : 0.052
C/A sky separation (km) : 155.3
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
    
```

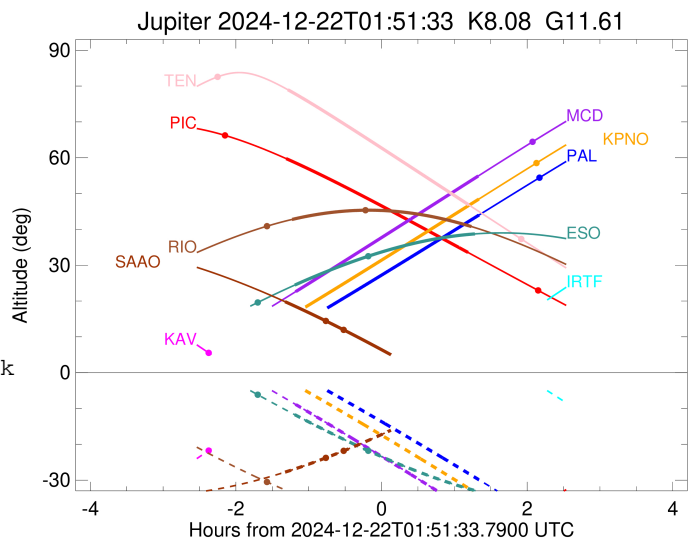
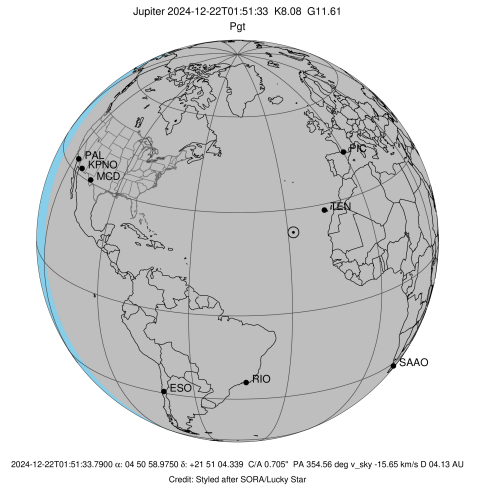


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-22T00:40:51.723	22.62	-8.88	71492.0	1.77	2.02
Jupiter	E	2024-12-22T03:11:10.041	54.87	-40.18	71492.0	-1.46	-1.67

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-22T01:48:36.920
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : TEN
Location              : Teide Obs./Tenerife
Latitude (deg)        : 28.30050
E. Longitude (deg)    : 343.48909
Altitude (km)         : 2.395
Gaia source ID        : 3412783624742018176
2Mass ID (if available) : 04505897+2151044
ICRS Star Coord at Epoch: 04h 50m 58.97498s +21:51:04.33891s
RUWE (>1.4 is poor) : 1.33
K magnitude           : 8.080
G magnitude           : 11.606
RP magnitude          : 10.618
BP magnitude          : 12.587
DUPflag              : 0
Distance (au)         : 4.128
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.65
Sun-Target sep (deg)  : 163.65
Sun-Moon sep (deg)    : 97.93
B (ring opening deg) : 2.84
PA of pole (deg)      : -6.54
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation (") : 0.485
C/A sky separation (km) : 1450.6
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
    
```

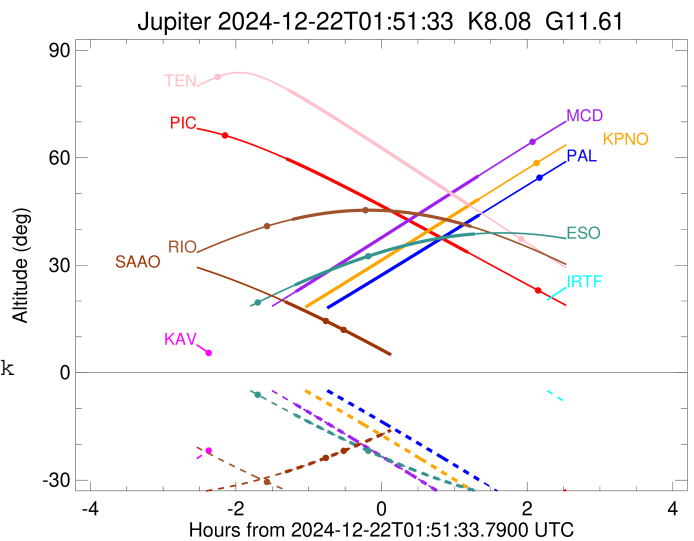
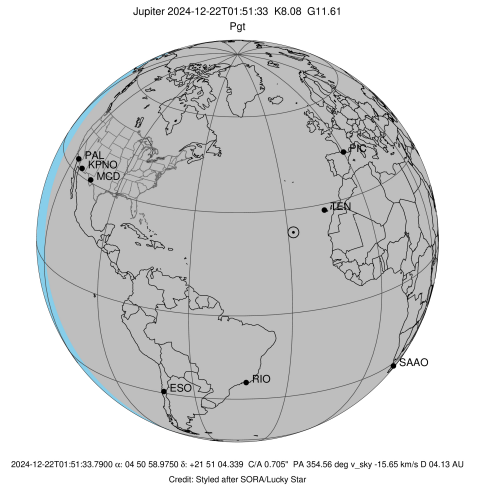


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-22T00:34:21.925	78.98	-81.74	71492.0	-0.11	-0.13
Jupiter	E	2024-12-22T03:03:10.424	46.90	-62.97	71492.0	-2.03	-2.33

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2024-12-22T01:51:41.720
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       : 3412783624742018176
2Mass ID (if available) : 04505897+2151044
ICRS Star Coord at Epoch: 04h 50m 58.97498s +21:51:04.33891s
RUWE (>1.4 is poor) : 1.33
K magnitude          : 8.080
G magnitude          : 11.606
RP magnitude         : 10.618
BP magnitude         : 12.587
DUPflag             : 0
Distance (au)        : 4.128
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.65
Sun-Target sep (deg) : 163.65
Sun-Moon sep (deg)   : 97.71
B (ring opening deg) : 2.84
PA of pole (deg)     : -6.54
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation ("): 2.215
C/A sky separation (km): 6631.4
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
    
```

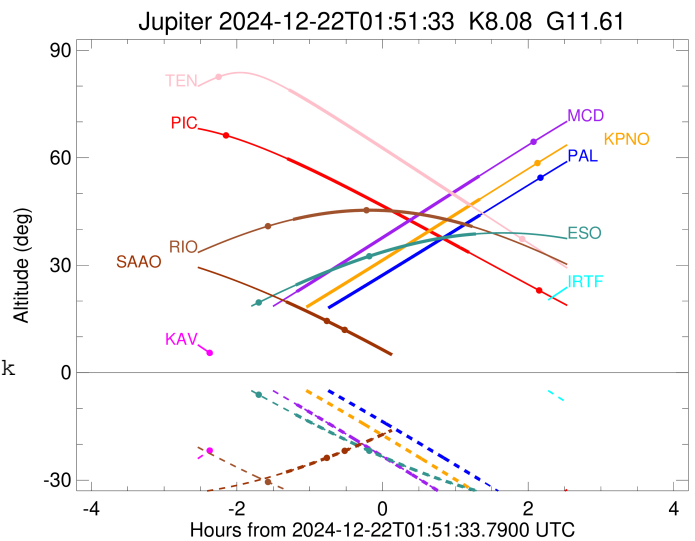
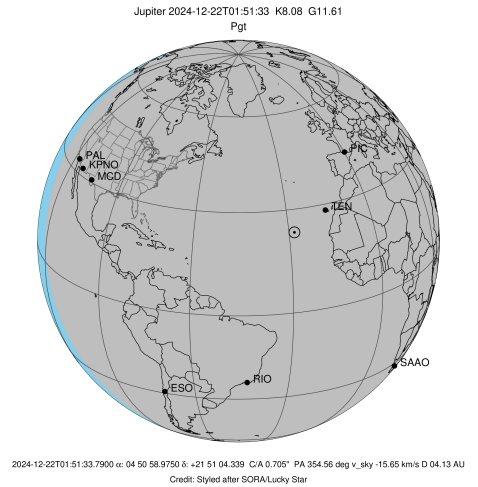


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-22T00:37:53.386	42.77	-33.54	71491.9	-4.01	-4.58
Jupiter	E	2024-12-22T03:05:32.575	40.80	-43.68	71491.9	-6.44	-7.35

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-22T01:54:24.230
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        : 3412783624742018176
2Mass ID (if available) : 04505897+2151044
ICRS Star Coord at Epoch: 04h 50m 58.97498s +21:51:04.33891s
RUWE (>1.4 is poor) : 1.33
K magnitude           : 8.080
G magnitude           : 11.606
RP magnitude          : 10.618
BP magnitude          : 12.587
DUPflag              : 0
Distance (au)         : 4.128
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.65
Sun-Target sep (deg) : 163.65
Sun-Moon sep (deg)   : 97.52
B (ring opening deg) : 2.84
PA of pole (deg)     : -6.54
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation ("): 2.234
C/A sky separation (km): 6689.4
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
    
```

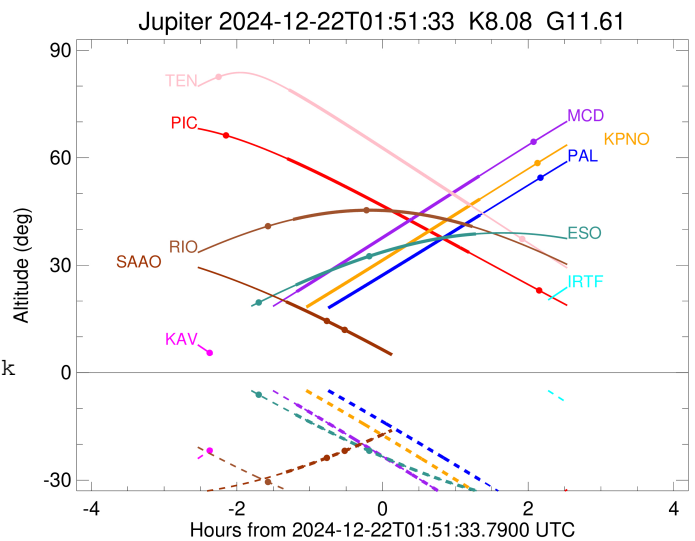
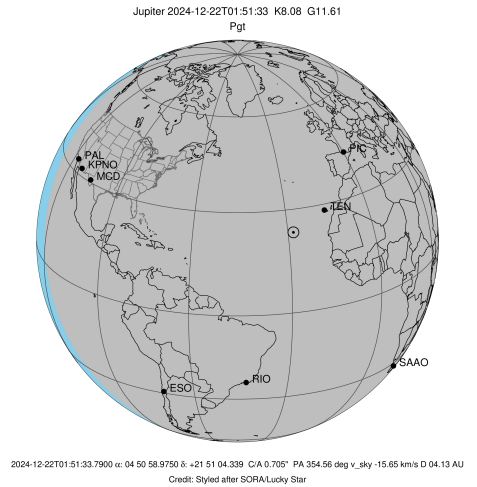


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2024-12-22T00:40:10.906	24.46	-11.74	71491.9	-3.85	-4.40
Jupiter	E	2024-12-22T03:08:23.808	38.73	-32.89	71491.8	-6.73	-7.68


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2024-12-22T01:46:48.200
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : SAAO
Location             : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)       : -32.37953
E. Longitude (deg)   : 20.81070
Altitude (km)        : 1.768
Gaia source ID       : 3412783624742018176
2Mass ID (if available) : 04505897+2151044
ICRS Star Coord at Epoch: 04h 50m 58.97498s +21:51:04.33891s
RUWE (>1.4 is poor) : 1.33
K magnitude           : 8.080
G magnitude           : 11.606
RP magnitude          : 10.618
BP magnitude          : 12.587
DUPflag              : 0
Distance (au)         : 4.128
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.65
Sun-Target sep (deg) : 163.65
Sun-Moon sep (deg)   : 97.25
B (ring opening deg) : 2.84
PA of pole (deg)     : -6.54
Pole direction: RA (deg): 268.05784
Dec (deg): 64.49672
C/A sky separation ("): 2.194
C/A sky separation (km): 6568.6
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	2024-12-22T00:32:06.329	19.81	-27.76	71491.9	-4.53	-5.17
Jupiter	E	2024-12-22T03:02:04.421	-7.00x	-5.48	71491.9	-5.89	-6.73