

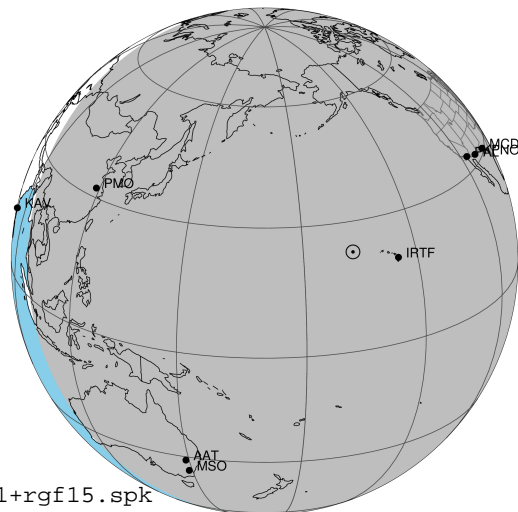
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2036-12-30T11:12:06.990
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3415304293805538048
 2Mass ID (if available) : 05092064+2225495

Jupiter 2036-12-30T11:12:06 K9.71 G12.51 Pgt

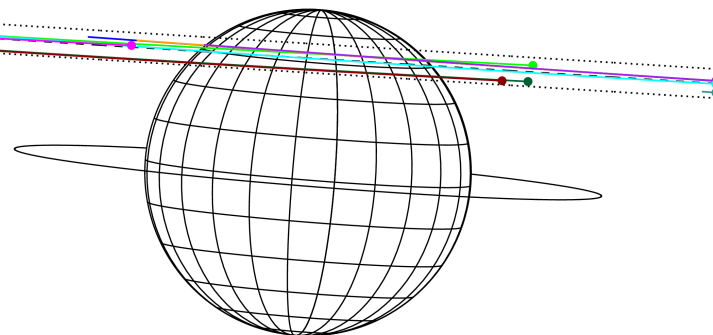
ICRS Star Coord at Epoch: 05h 09m 20.63458s +22:25:49.37285s

RUWE (>1.4 is poor) : 0.98
 K magnitude : 9.715
 G magnitude : 12.507
 RP magnitude : 11.656
 BP magnitude : 13.260
 DUPflag : 0
 Distance (au) : 4.165
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -15.02
 Sun-Target sep (deg) : 159.47
 Sun-Moon sep (deg) : 15.10
 B (ring opening deg) : 2.67
 PA of pole (deg) : -4.60
 Pole direction: RA (deg): 268.05631
 Dec (deg): 64.49687
 C/A sky separation (") : 16.559
 C/A sky separation (km) : 50025.0
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2036-12-30T11:12:06 K9.71 G12.51
 Pgt



Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 ESO
 AAT
 MSO

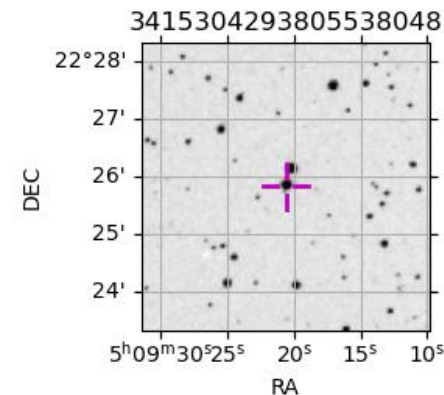


2036-12-30T11:12:06.9900 a: 05 09 20.6346 s: +22 25 49.373 C/A ***** PA 176.42 deg v_sky -15.02 km/s D 04.17 AU

Credit: Styled after SORA/Lucky Star

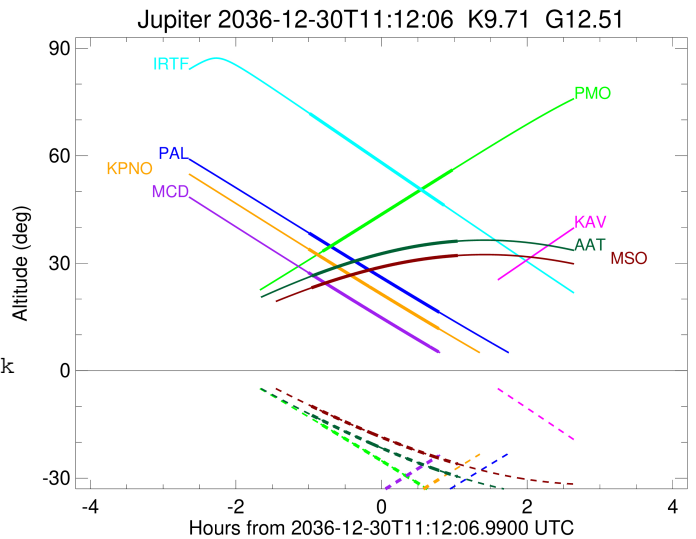
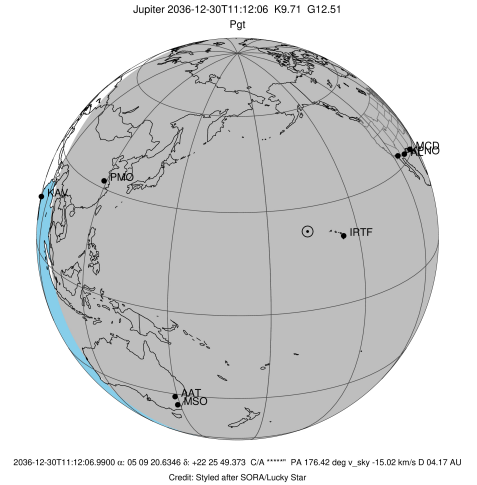
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events	Interval	OCode
PIC	Pic du Midi	42.9	0.1				Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	DEC 30 10:12	- DEC 30 11:59	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	DEC 30 10:23	- DEC 30 12:10	Pie
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	DEC 30 10:12	- DEC 30 11:59	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	DEC 30 10:11	- DEC 30 11:59	Pie
TEN	Teide Obs./Tenerife	28.3	343.5				Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+ +	DEC 30 10:12	- DEC 30 12:03	Pie
KAV	Kavalur Observatory	12.6	78.8				Pnn
RIO	Rio de Janeiro	-22.9	316.8				Pnn
ESO	European Southern Obs. (3.6m)	-29.3	289.3				Pnn
AAT	Siding Spring (AAT)	-31.3	149.1	+ +	DEC 30 10:14	- DEC 30 12:14	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8				Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	DEC 30 10:14	- DEC 30 12:14	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2036-12-30T11:05:50.810
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       : 3415304293805538048
2Mass ID (if available) : 05092064+2225495
ICRS Star Coord at Epoch: 05h 09m 20.63458s +22:25:49.37285s
RUWE (>1.4 is poor) : 0.98
K magnitude          : 9.715
G magnitude          : 12.507
RP magnitude         : 11.656
BP magnitude         : 13.260
DUPflag             : 0
Distance (au)        : 4.165
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.02
Sun-Target sep (deg) : 159.47
Sun-Moon sep (deg)   : 16.05
B (ring opening deg) : 2.67
PA of pole (deg)     : -4.60
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (") : 17.310
C/A sky separation (km) : 52292.1
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
    
```

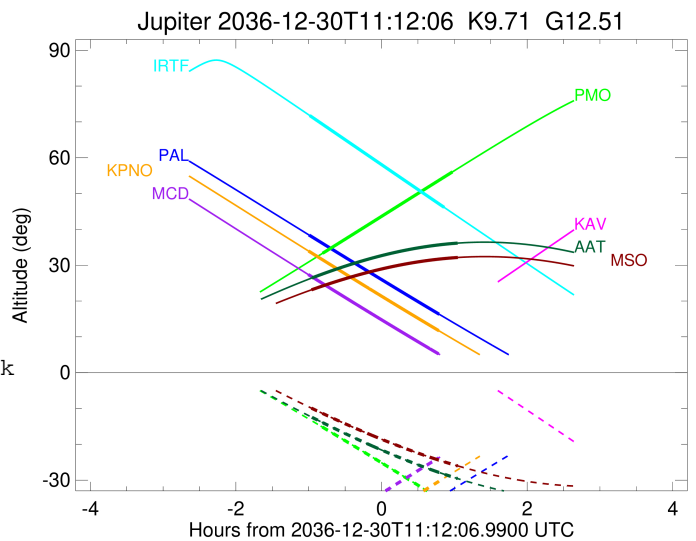
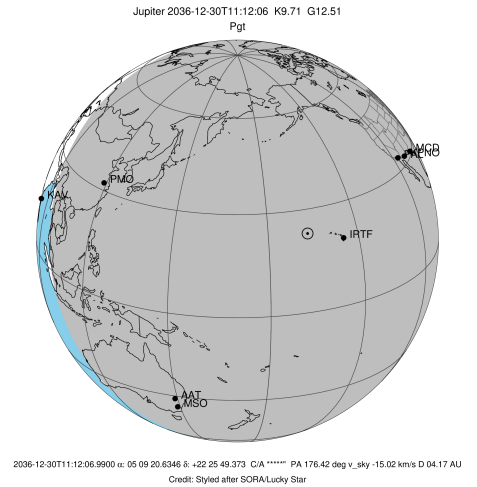


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-12-30T10:12:26.336	38.41	-57.24	71486.7	47.50	51.15
Jupiter	E	2036-12-30T11:59:35.308	16.32	-34.89	71486.8	46.46	50.14

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch             : 2036-12-30T11:17:06.330
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        : 3415304293805538048
2Mass ID (if available) : 05092064+2225495
ICRS Star Coord at Epoch: 05h 09m 20.63458s +22:25:49.37285s
RUWE (>1.4 is poor)  : 0.98
K magnitude           : 9.715
G magnitude           : 12.507
RP magnitude          : 11.656
BP magnitude          : 13.260
DUPflag              : 0
Distance (au)         : 4.165
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -15.02
Sun-Target sep (deg)  : 159.47
Sun-Moon sep (deg)    : 14.79
B (ring opening deg)  : 2.67
PA of pole (deg)      : -4.60
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (") : 17.232
C/A sky separation (km) : 52058.2
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
    
```

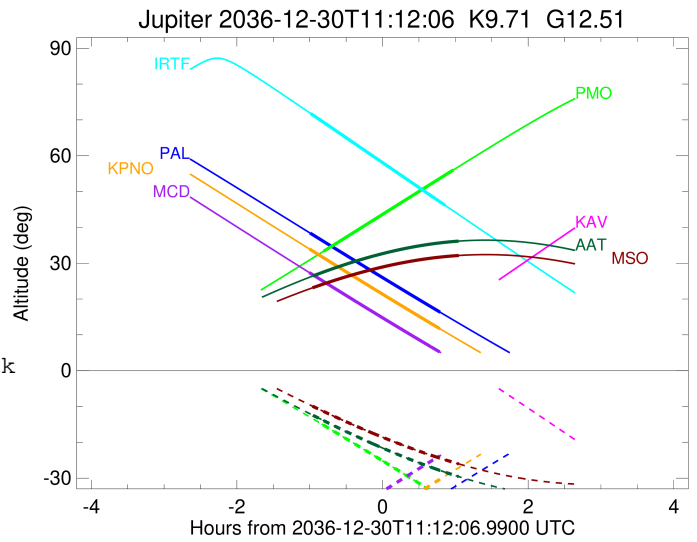
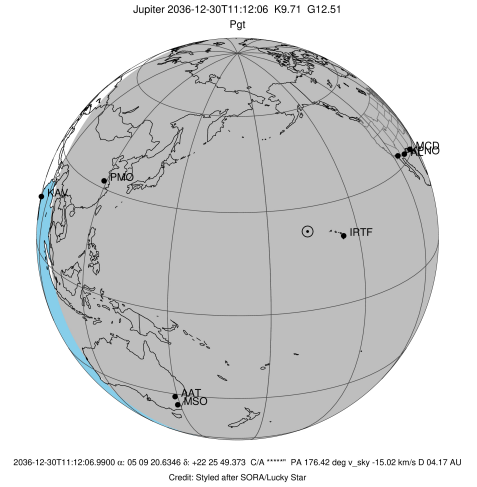


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-12-30T10:23:31.557	33.31	-15.20	71486.5	48.21	51.85
Jupiter	E	2036-12-30T12:10:26.997	56.01	-37.35	71487.1	45.21	48.90

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2036-12-30T11:05:34.330
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       : 3415304293805538048
2Mass ID (if available) : 05092064+2225495
ICRS Star Coord at Epoch: 05h 09m 20.63458s +22:25:49.37285s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 9.715
G magnitude           : 12.507
RP magnitude         : 11.656
BP magnitude         : 13.260
DUPflag              : 0
Distance (au)        : 4.165
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.02
Sun-Target sep (deg) : 159.47
Sun-Moon sep (deg)  : 16.06
B (ring opening deg) : 2.67
PA of pole (deg)    : -4.60
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (") : 17.322
C/A sky separation (km) : 52329.6
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
    
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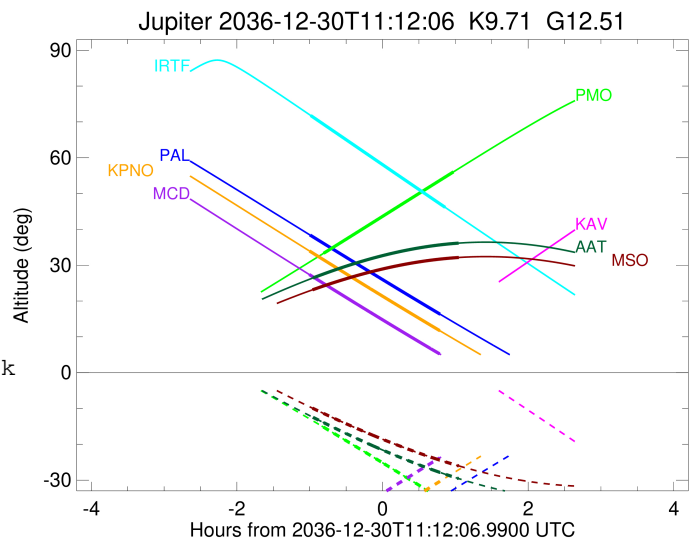
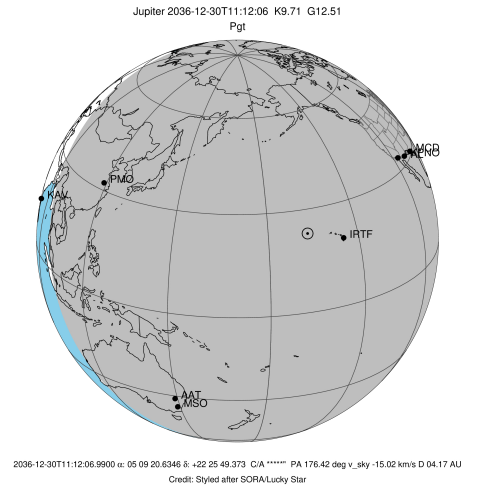


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-12-30T10:12:05.973	33.93	-53.03	71486.7	47.50	51.16
Jupiter	E	2036-12-30T11:59:23.658	11.71	-30.34	71486.8	46.53	50.21

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2036-12-30T11:05:18.600
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        : 3415304293805538048
2Mass ID (if available) : 05092064+2225495
ICRS Star Coord at Epoch: 05h 09m 20.63458s +22:25:49.37285s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 9.715
G magnitude           : 12.507
RP magnitude          : 11.656
BP magnitude          : 13.260
DUPflag              : 0
Distance (au)         : 4.165
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.02
Sun-Target sep (deg) : 159.47
Sun-Moon sep (deg)   : 16.06
B (ring opening deg) : 2.67
PA of pole (deg)     : -4.60
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (") : 17.368
C/A sky separation (km) : 52469.3
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
    
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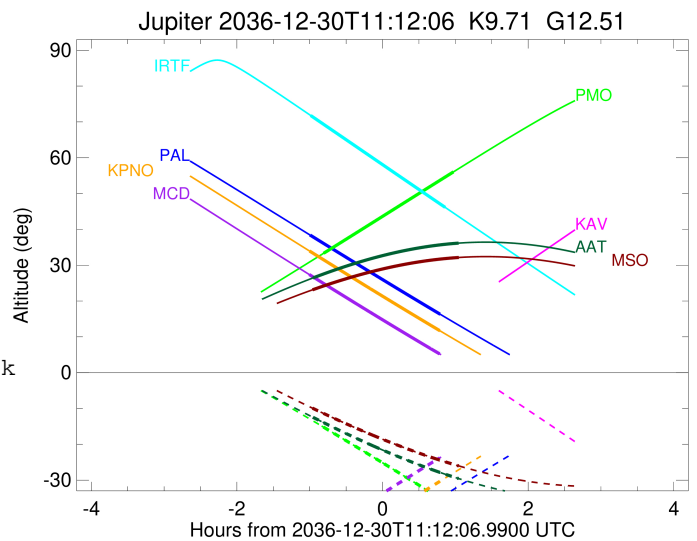
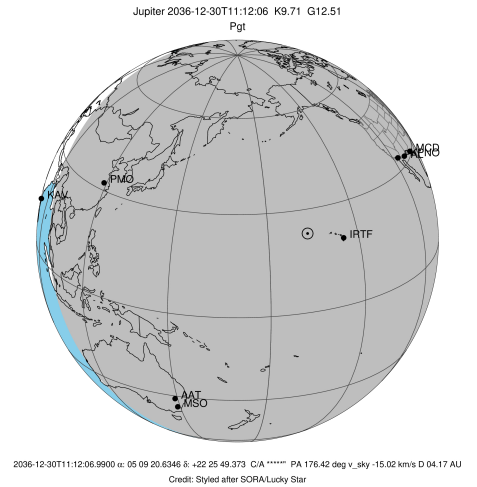


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-12-30T10:11:49.652	27.38	-46.62	71486.6	47.63	51.28
Jupiter	E	2036-12-30T11:59:09.428	5.24	-23.77	71486.8	46.72	50.39

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2036-12-30T11:08:13.180
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      : 3415304293805538048
2Mass ID (if available) : 05092064+2225495
ICRS Star Coord at Epoch: 05h 09m 20.63458s +22:25:49.37285s
RUWE (>1.4 is poor) : 0.98
K magnitude          : 9.715
G magnitude          : 12.507
RP magnitude         : 11.656
BP magnitude         : 13.260
DUPflag             : 0
Distance (au)       : 4.165
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.02
Sun-Target sep (deg) : 159.47
Sun-Moon sep (deg)  : 15.79
B (ring opening deg) : 2.67
PA of pole (deg)    : -4.60
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (") : 16.517
C/A sky separation (km) : 49898.7
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
    
```

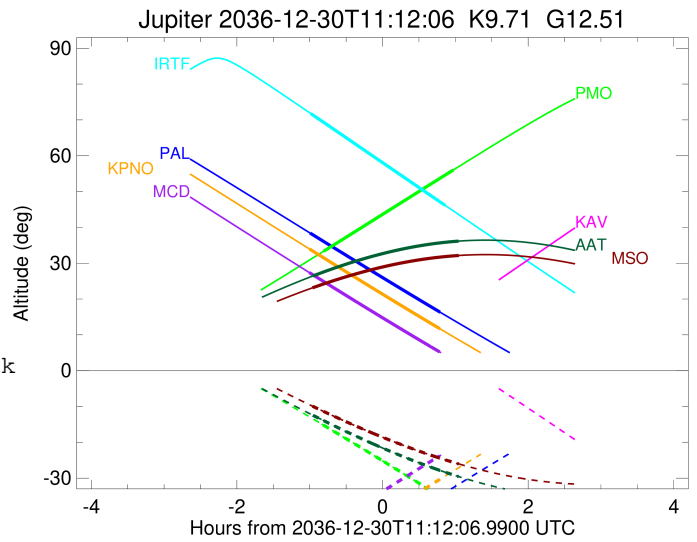
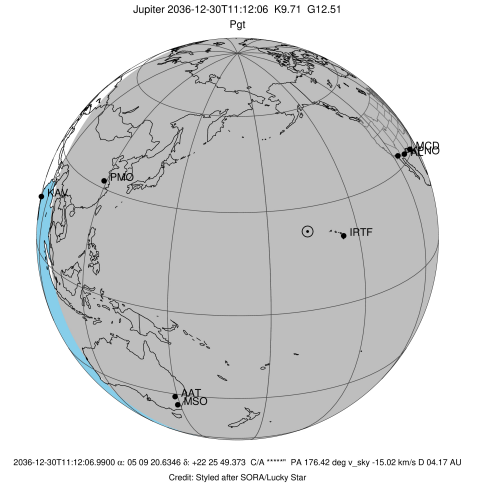


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-12-30T10:12:57.621	71.77	-85.65	71487.1	45.03	48.74
Jupiter	E	2036-12-30T12:03:42.550	46.15	-66.72	71487.3	43.52	47.23

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2036-12-30T11:14:49.000
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        : 3415304293805538048
2Mass ID (if available) : 05092064+2225495
ICRS Star Coord at Epoch: 05h 09m 20.63458s +22:25:49.37285s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 9.715
G magnitude           : 12.507
RP magnitude          : 11.656
BP magnitude          : 13.260
DUPflag              : 0
Distance (au)         : 4.165
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.02
Sun-Target sep (deg) : 159.47
Sun-Moon sep (deg)   : 14.70
B (ring opening deg) : 2.67
PA of pole (deg)     : -4.60
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation ("): 14.946
C/A sky separation (km): 45152.0
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
    
```

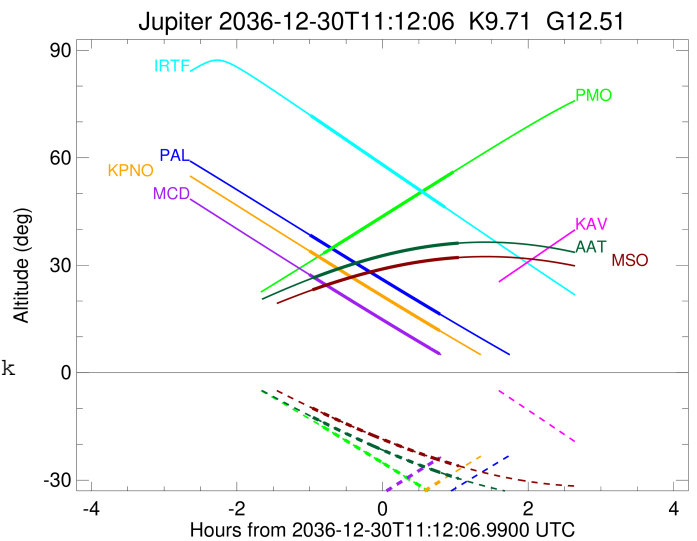
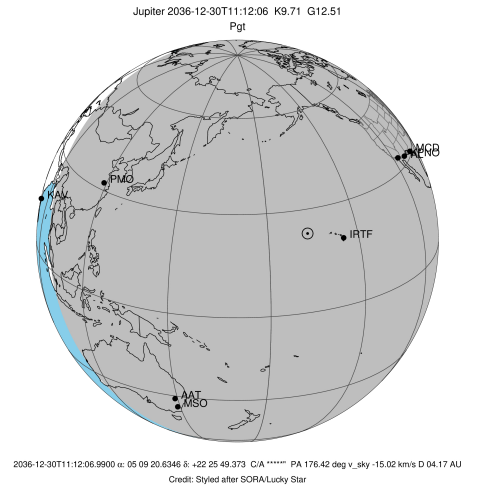


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2036-12-30T10:14:46.193	26.44	-12.45	71487.9	40.48	44.19
Jupiter	E	2036-12-30T12:14:44.304	36.16	-29.55	71488.3	37.89	41.56


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2036-12-30T11:14:43.970
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       : 3415304293805538048
2Mass ID (if available) : 05092064+2225495
ICRS Star Coord at Epoch: 05h 09m 20.63458s +22:25:49.37285s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 9.715
G magnitude           : 12.507
RP magnitude         : 11.656
BP magnitude         : 13.260
DUPflag              : 0
Distance (au)        : 4.165
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.02
Sun-Target sep (deg) : 159.47
Sun-Moon sep (deg)   : 14.69
B (ring opening deg) : 2.67
PA of pole (deg)     : -4.60
Pole direction: RA (deg): 268.05631
Dec (deg): 64.49687
C/A sky separation (") : 14.859
C/A sky separation (km) : 44890.7
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	2036-12-30T10:14:23.478	23.12	-9.91	71487.9	40.19	43.90
Jupiter	E	2036-12-30T12:14:57.290	32.15	-26.03	71488.3	37.63	41.30