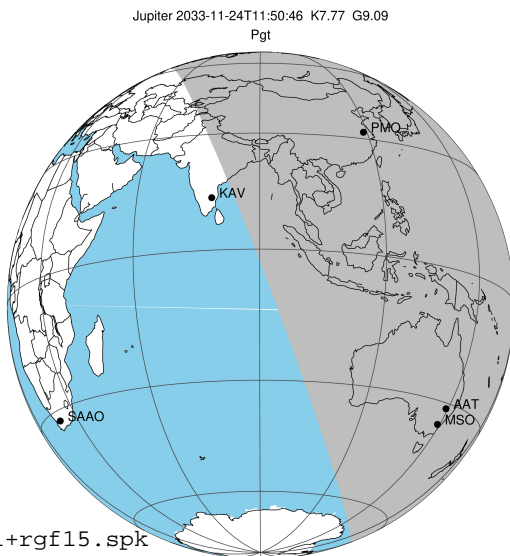


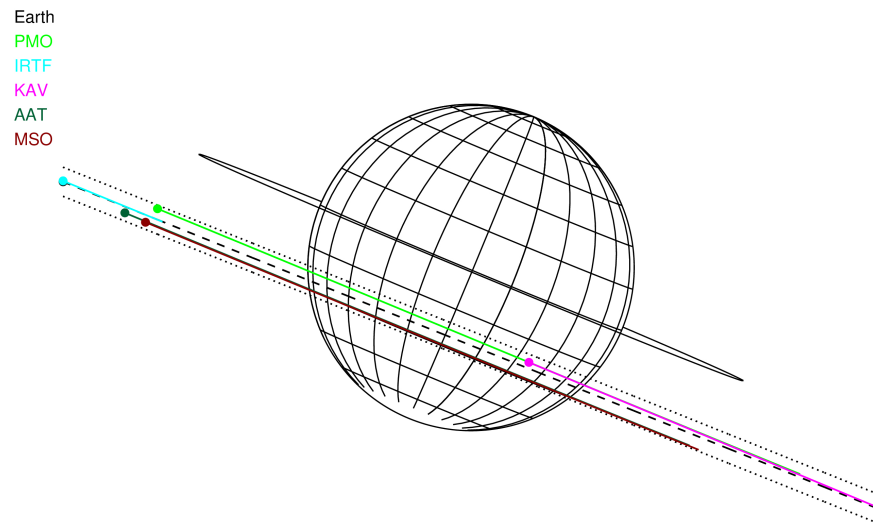
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2033-11-24T11:50:46.090
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 2612488280985556992
 2Mass ID (if available) : 22045636-1259396

Jupiter 2033-11-24T11:50:46 K7.77 G9.09 Pgt

ICRS Star Coord at Epoch: 22h 04m 56.68348s -12:59:41.66284s
 RUWE (>1.4 is poor) : 1.43
 K magnitude : 7.774
 G magnitude : 9.095
 RP magnitude : 8.622
 BP magnitude : 9.390
 DUPflag : 0
 Distance (au) : 4.952
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 15.36
 Sun-Target sep (deg) : 86.65
 Sun-Moon sep (deg) : 59.32
 B (ring opening deg) : 0.78
 PA of pole (deg) : -22.60
 Pole direction: RA (deg): 268.05644
 Dec (deg): 64.49666
 C/A sky separation (") : 8.821
 C/A sky separation (km) : 31679.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

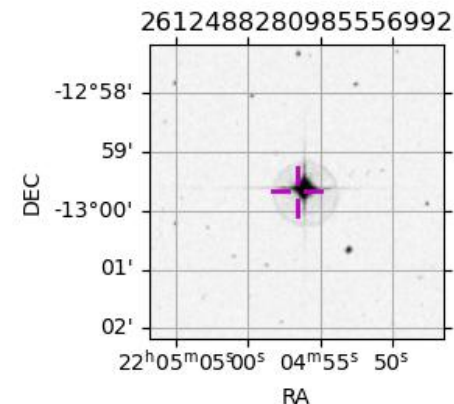


2033-11-24T11:50:46.0900 ex: 22 04 56.6835 s: -12 59 41.663 C/A 8.818" PA 338.14 deg v_sky +15.36 km/s D 04.95 AU
 Credit: Styled after SORA/Lucky Star



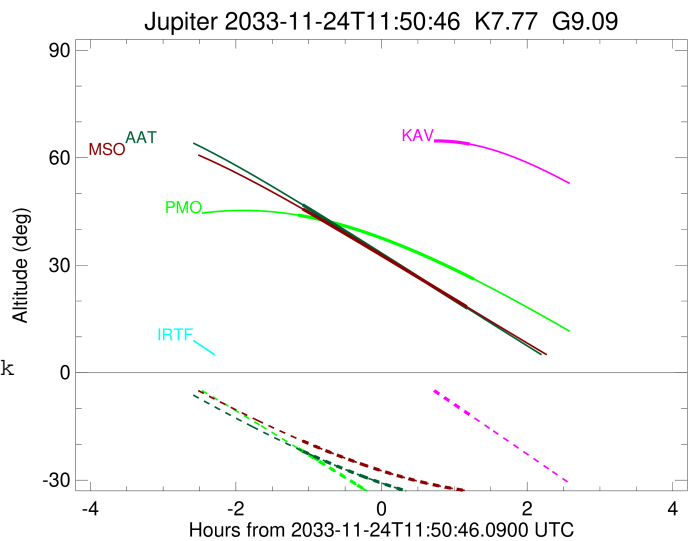
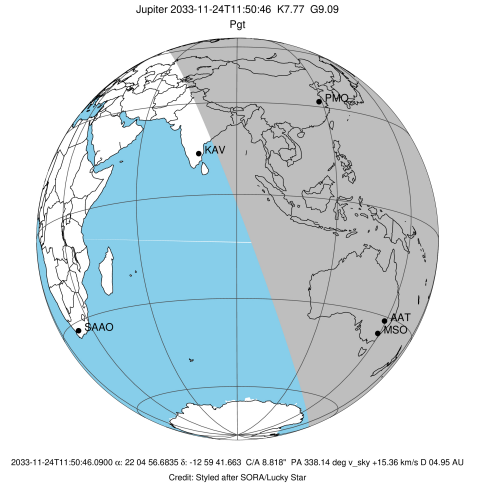
Observable events with sun below -5 deg and altitude above 5 deg

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			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	NOV 24 10:42 - NOV 24 13:07	Pie
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	NOV 24 13:03 - NOV 24 13:03	Pne
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	+ +	NOV 24 10:45 - NOV 24 13:01	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	NOV 24 10:45 - NOV 24 13:01	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2033-11-24T11:54:51.930
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       : 2612488280985556992
2Mass ID (if available) : 22045636-1259396
ICRS Star Coord at Epoch: 22h 04m 56.68348s -12:59:41.66284s
RUWE (>1.4 is poor) : 1.43
K magnitude          : 7.774
G magnitude          : 9.095
RP magnitude         : 8.622
BP magnitude         : 9.390
DUPflag             : 0
Distance (au)        : 4.952
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 15.36
Sun-Target sep (deg) : 86.65
Sun-Moon sep (deg)  : 60.07
B (ring opening deg) : 0.78
PA of pole (deg)    : -22.60
Pole direction: RA (deg): 268.05644
Dec (deg): 64.49666
C/A sky separation (" ) : 7.982
C/A sky separation (km) : 28666.4
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
    
```

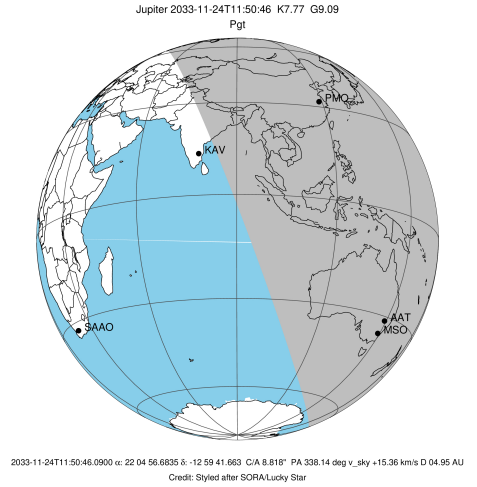


x: target alt < 5.0 deg or sun > -5.0 deg

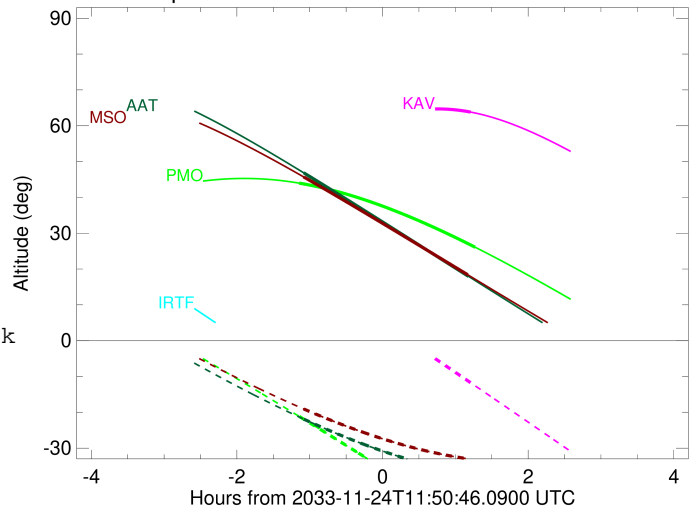
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2033-11-24T10:42:11.849	43.96	-21.15	71491.9	-23.75	-26.67
Jupiter	E	2033-11-24T13:07:06.122	26.09	-51.74	71491.9	-23.52	-26.42

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2033-11-24T11:50:18.210
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : KAV
Location            : Kavalur Observatory
Latitude (deg)      : 12.57556
E. Longitude (deg)  : 78.83167
Altitude (km)       : 0.722
Gaia source ID      : 2612488280985556992
2Mass ID (if available) : 22045636-1259396
ICRS Star Coord at Epoch: 22h 04m 56.68348s -12:59:41.66284s
RUWE (>1.4 is poor) : 1.43
K magnitude          : 7.774
G magnitude          : 9.095
RP magnitude         : 8.622
BP magnitude         : 9.390
DUPflag             : 0
Distance (au)       : 4.952
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 15.36
Sun-Target sep (deg) : 86.65
Sun-Moon sep (deg)  : 60.00
B (ring opening deg) : 0.78
PA of pole (deg)    : -22.60
Pole direction: RA (deg): 268.05644
Dec (deg): 64.49666
C/A sky separation (" ) : 7.994
C/A sky separation (km) : 28711.4
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
    
```



Jupiter 2033-11-24T11:50:46 K7.77 G9.09

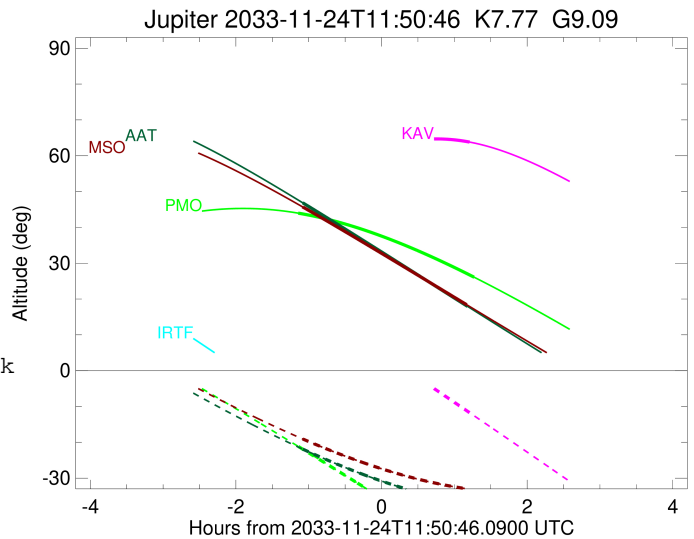
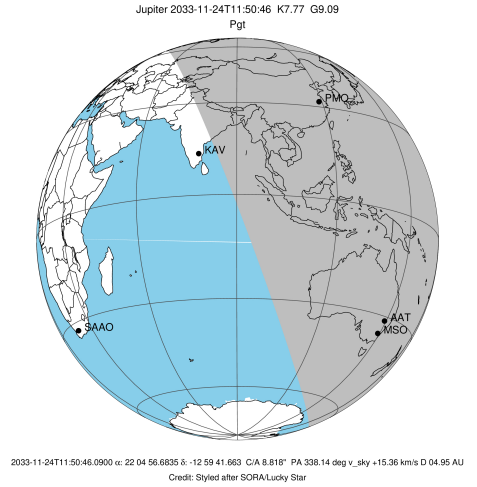


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2033-11-24T10:37:19.360	51.07	21.09x	71491.9	-23.94	-26.88
Jupiter	E	2033-11-24T13:03:14.175	63.81	-11.70	71491.9	-23.56	-26.47

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2033-11-24T11:54:04.860
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      : 2612488280985556992
2Mass ID (if available) : 22045636-1259396
ICRS Star Coord at Epoch: 22h 04m 56.68348s -12:59:41.66284s
RUWE (>1.4 is poor) : 1.43
K magnitude          : 7.774
G magnitude          : 9.095
RP magnitude         : 8.622
BP magnitude         : 9.390
DUPflag             : 0
Distance (au)       : 4.952
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 15.36
Sun-Target sep (deg) : 86.65
Sun-Moon sep (deg)  : 60.05
B (ring opening deg) : 0.78
PA of pole (deg)    : -22.60
Pole direction: RA (deg): 268.05644
Dec (deg): 64.49666
C/A sky separation ("): 9.982
C/A sky separation (km): 35851.2
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
    
```

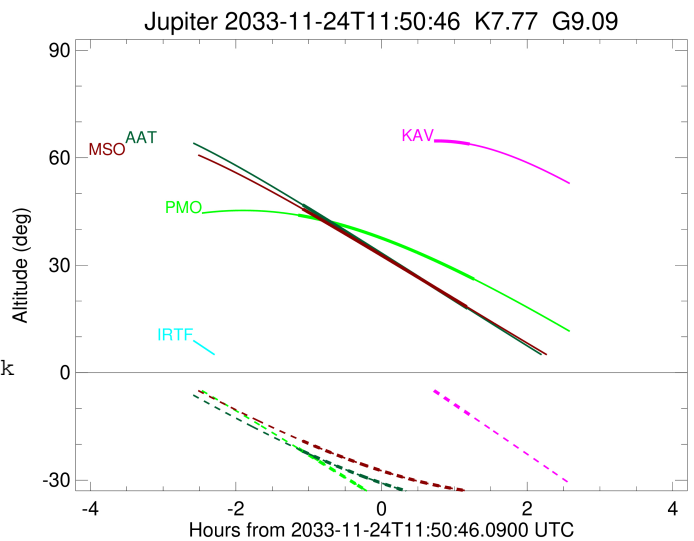
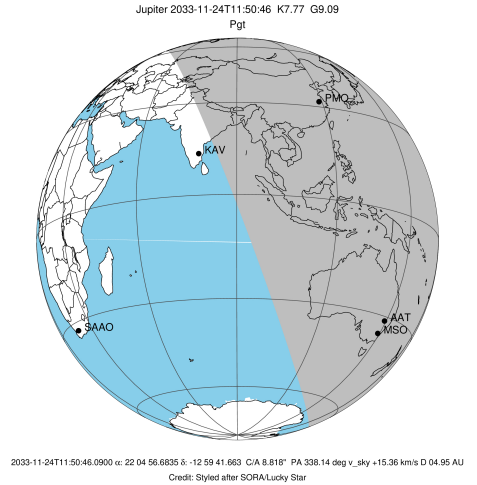


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2033-11-24T10:45:59.130	46.82	-21.92	71491.8	-30.24	-33.63
Jupiter	E	2033-11-24T13:01:38.224	17.95	-36.92	71491.8	-29.84	-33.20

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2033-11-24T11:53:42.920
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        : 2612488280985556992
2Mass ID (if available) : 22045636-1259396
ICRS Star Coord at Epoch: 22h 04m 56.68348s -12:59:41.66284s
RUWE (>1.4 is poor) : 1.43
K magnitude           : 7.774
G magnitude           : 9.095
RP magnitude          : 8.622
BP magnitude          : 9.390
DUPflag              : 0
Distance (au)         : 4.952
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 15.36
Sun-Target sep (deg)  : 86.65
Sun-Moon sep (deg)    : 60.02
B (ring opening deg) : 0.78
PA of pole (deg)      : -22.60
Pole direction: RA (deg): 268.05644
Dec (deg): 64.49666
C/A sky separation (" ) : 10.060
C/A sky separation (km) : 36131.0
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	2033-11-24T10:45:50.321	45.70	-19.06	71491.8	-30.53	-33.93
Jupiter	E	2033-11-24T13:01:04.561	18.38	-32.97	71491.8	-30.08	-33.46