

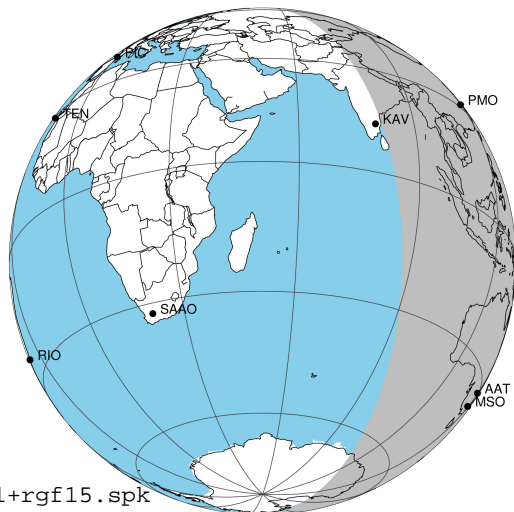
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-10-22T12:10:34.600
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116526385700517632
 2Mass ID (if available) : 17382066-2312422

Jupiter 2031-10-22T12:10:34 K8.10 G14.18 Pgt

ICRS Star Coord at Epoch: 17h 38m 20.64875s -23:12:42.33869s

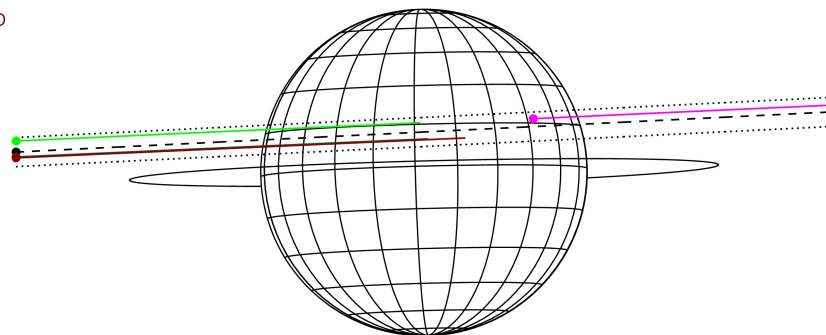
RUWE (>1.4 is poor) : 0.87
 K magnitude : 8.103
 G magnitude : 14.177
 RP magnitude : 12.702
 BP magnitude : 17.081
 DUPflag : 0
 Distance (au) : 5.717
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 29.60
 Sun-Target sep (deg) : 56.57
 Sun-Moon sep (deg) : 23.13
 B (ring opening deg) : -2.25
 PA of pole (deg) : 1.49
 Pole direction: RA (deg): 268.05681
 Dec (deg): 64.49652
 C/A sky separation (") : 4.275
 C/A sky separation (km) : 17728.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-10-22T12:10:34 K8.10 G14.18
 Pgt



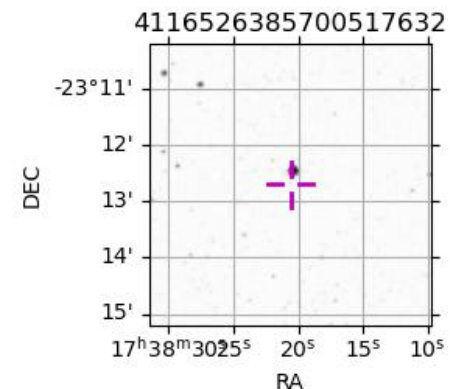
2031-10-22T12:10:34.6000 cc: 17 38 20.6488 s: -23 12 42.339 C/A 4.2677 PA 182.82 deg v_sky +29.60 km/s D 05.72 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PMO
 KAV
 AAT
 MSO



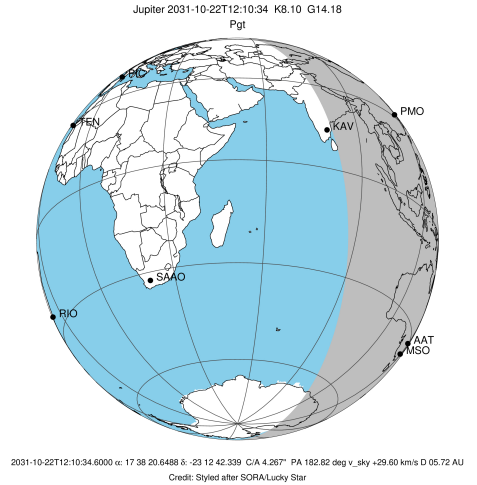
Observable events with sun below -5 deg and altitude above 5 deg

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	+	OCT 22 11:34 - OCT 22 11:34	Pin
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	+	OCT 22 12:51 - OCT 22 12:51	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	+	OCT 22 11:34 - OCT 22 11:34	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	OCT 22 11:34 - OCT 22 11:34	Pin

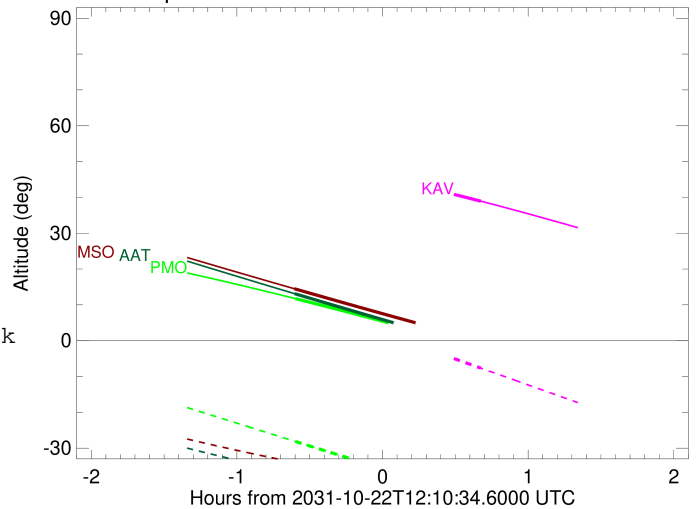


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-10-22T12:13:21.100
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       : 4116526385700517632
2Mass ID (if available) : 17382066-2312422
ICRS Star Coord at Epoch: 17h 38m 20.64875s -23:12:42.33869s
RUWE (>1.4 is poor) : 0.87
K magnitude           : 8.103
G magnitude           : 14.177
RP magnitude         : 12.702
BP magnitude         : 17.081
DUPflag              : 0
Distance (au)        : 5.717
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 29.60
Sun-Target sep (deg) : 56.57
Sun-Moon sep (deg)   : 22.38
B (ring opening deg) : -2.25
PA of pole (deg)     : 1.49
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (") : 5.270
C/A sky separation (km) : 21853.0
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
    
```



Jupiter 2031-10-22T12:10:34 K8.10 G14.18

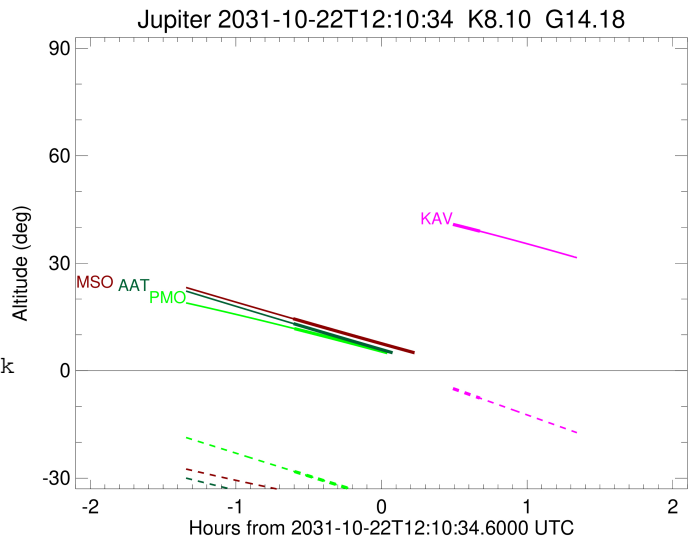
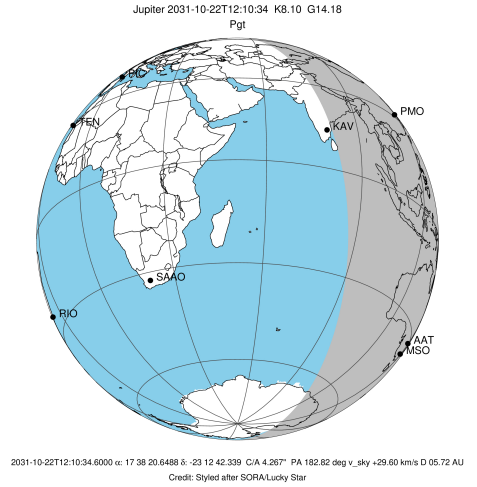


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-22T11:34:46.449	11.72	-28.16	71491.4	16.72	18.94
Jupiter	E	2031-10-22T12:51:50.035	-2.24x	-44.23	71491.3	18.83	21.28

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-10-22T12:12:08.000
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        : 4116526385700517632
2Mass ID (if available) : 17382066-2312422
ICRS Star Coord at Epoch: 17h 38m 20.64875s -23:12:42.33869s
RUWE (>1.4 is poor)  : 0.87
K magnitude           : 8.103
G magnitude           : 14.177
RP magnitude          : 12.702
BP magnitude          : 17.081
DUPflag              : 0
Distance (au)         : 5.717
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 29.60
Sun-Target sep (deg)  : 56.57
Sun-Moon sep (deg)    : 22.93
B (ring opening deg)  : -2.25
PA of pole (deg)      : 1.49
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (") : 5.137
C/A sky separation (km) : 21301.9
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
    
```

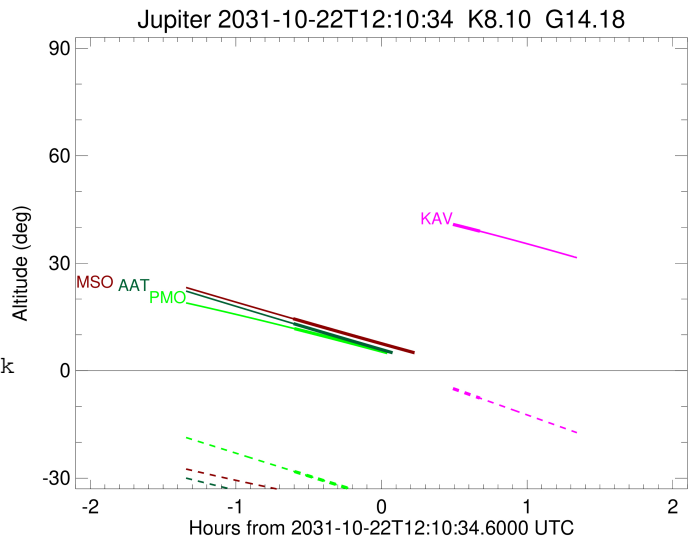
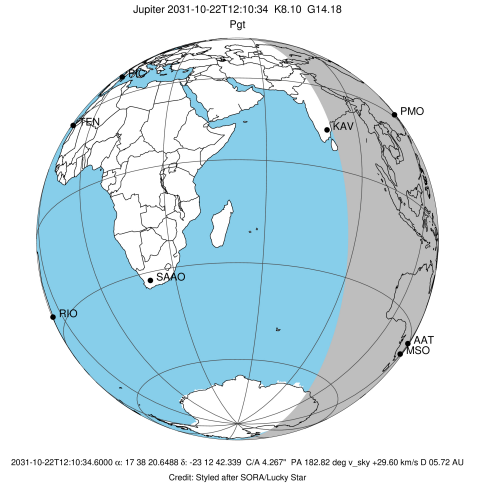


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-22T11:33:08.386	50.27	10.97x	71491.5	16.10	18.25
Jupiter	E	2031-10-22T12:51:03.912	38.94	-7.65	71491.3	18.49	20.91

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-22T12:13:44.680
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      : 4116526385700517632
2Mass ID (if available) : 17382066-2312422
ICRS Star Coord at Epoch: 17h 38m 20.64875s -23:12:42.33869s
RUWE (>1.4 is poor) : 0.87
K magnitude          : 8.103
G magnitude          : 14.177
RP magnitude         : 12.702
BP magnitude         : 17.081
DUPflag             : 0
Distance (au)       : 5.717
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 29.60
Sun-Target sep (deg) : 56.57
Sun-Moon sep (deg)   : 22.49
B (ring opening deg) : -2.25
PA of pole (deg)     : 1.49
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation ("): 3.532
C/A sky separation (km): 14647.3
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
    
```

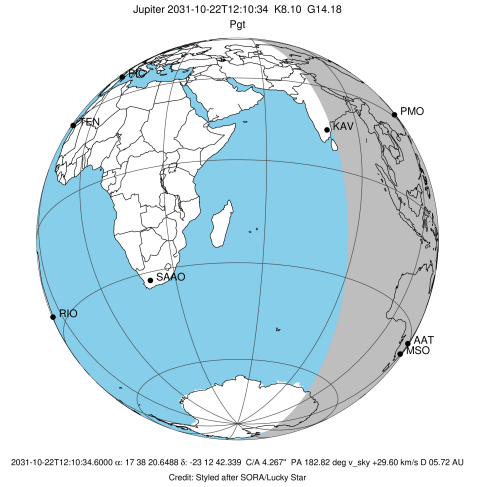


x: target alt < 5.0 deg or sun > -5.0 deg

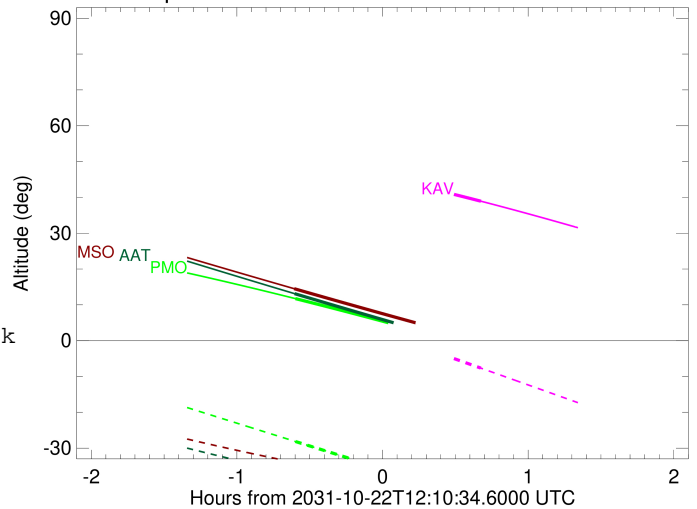
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-22T11:34:21.514	13.12	-37.00	71491.8	10.80	12.30
Jupiter	E	2031-10-22T12:53:01.498	-2.27x	-45.77	71491.7	12.83	14.59

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-22T12:13:36.810
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      : 4116526385700517632
2Mass ID (if available) : 17382066-2312422
ICRS Star Coord at Epoch: 17h 38m 20.64875s -23:12:42.33869s
RUWE (>1.4 is poor) : 0.87
K magnitude          : 8.103
G magnitude          : 14.177
RP magnitude         : 12.702
BP magnitude         : 17.081
DUPflag             : 0
Distance (au)       : 5.717
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 29.60
Sun-Target sep (deg) : 56.57
Sun-Moon sep (deg)  : 22.55
B (ring opening deg) : -2.25
PA of pole (deg)    : 1.49
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (") : 3.451
C/A sky separation (km) : 14309.4
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 2031-10-22T12:10:34 K8.10 G14.18



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	2031-10-22T11:34:11.176	14.51	-33.93	71491.8	10.51	11.97
Jupiter	E	2031-10-22T12:52:56.336	-0.25x	-41.94	71491.7	12.57	14.30