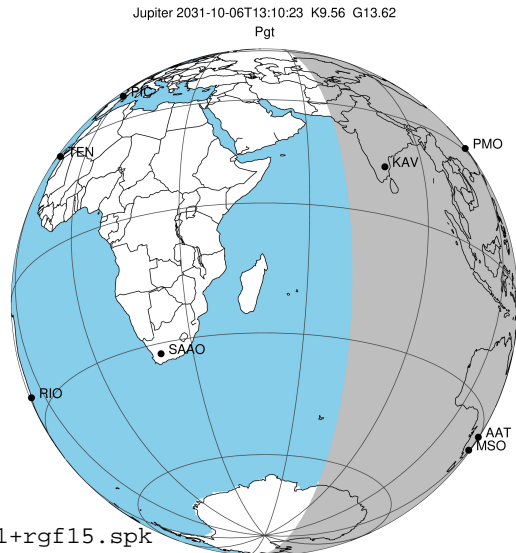


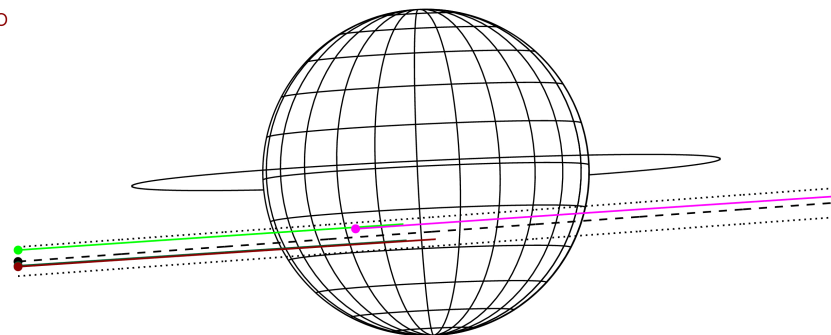
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-10-06T13:10:23.490
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4111469113250254720
 2Mass ID (if available) : 17273025-2303519

Jupiter 2031-10-06T13:10:23 K9.56 G13.62 Pgt

ICRS Star Coord at Epoch: 17h 27m 30.24629s -23°03:52.14912s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 9.560
 G magnitude : 13.624
 RP magnitude : 12.535
 BP magnitude : 14.856
 DUPflag : 0
 Distance (au) : 5.500
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 23.34
 Sun-Target sep (deg) : 69.88
 Sun-Moon sep (deg) : 177.24
 B (ring opening deg) : -2.31
 PA of pole (deg) : 2.66
 Pole direction: RA (deg): 268.05683
 Dec (deg): 64.49652
 C/A sky separation (") : 6.535
 C/A sky separation (km) : 26069.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



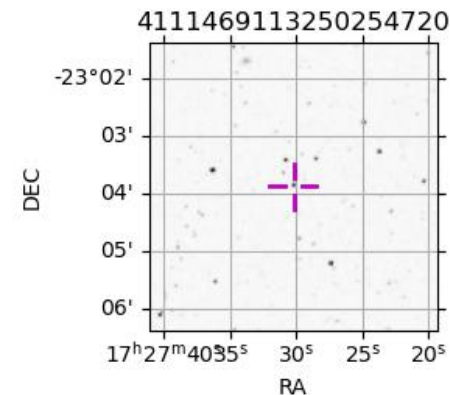
Earth
 PMO
 KAV
 AAT
 MSO



2031-10-06T13:10:23.4900 @: 17 27 30.2463 @: -23 03 52.149 C/A 6.544" PA 4.12 deg v_sky +23.34 km/s D 05.50 AU
 Credit: Styled after SORA/Lucky Star

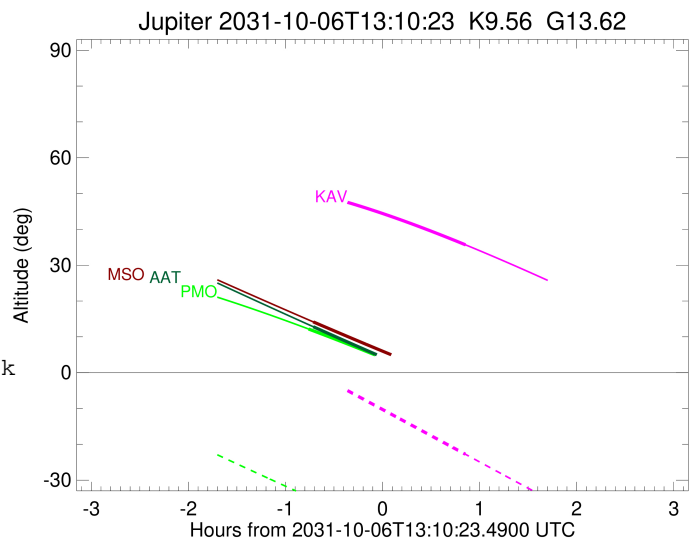
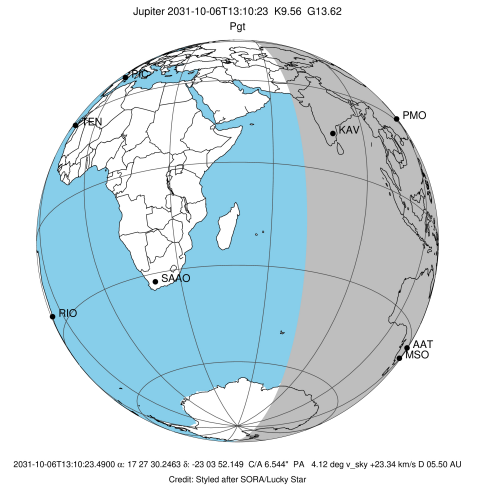
Observable events with sun below -5 deg and altitude above 5 deg

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	+	OCT 06 12:24 - OCT 06 12:24	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 06 14:01 - OCT 06 14:01	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 06 12:27 - OCT 06 12:27	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	OCT 06 12:27 - OCT 06 12:27	Pin



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-10-06T13:13:44.010
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        : 4111469113250254720
2Mass ID (if available) : 17273025-2303519
ICRS Star Coord at Epoch: 17h 27m 30.24629s -23:03:52.14912s
RUWE (>1.4 is poor) : 0.93
K magnitude           : 9.560
G magnitude           : 13.624
RP magnitude          : 12.535
BP magnitude          : 14.856
DUPflag              : 0
Distance (au)         : 5.500
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 23.34
Sun-Target sep (deg) : 69.88
Sun-Moon sep (deg)   : 176.76
B (ring opening deg) : -2.31
PA of pole (deg)     : 2.66
Pole direction: RA (deg): 268.05683
Dec (deg): 64.49652
C/A sky separation (" ) : 5.491
C/A sky separation (km) : 21904.6
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
    
```

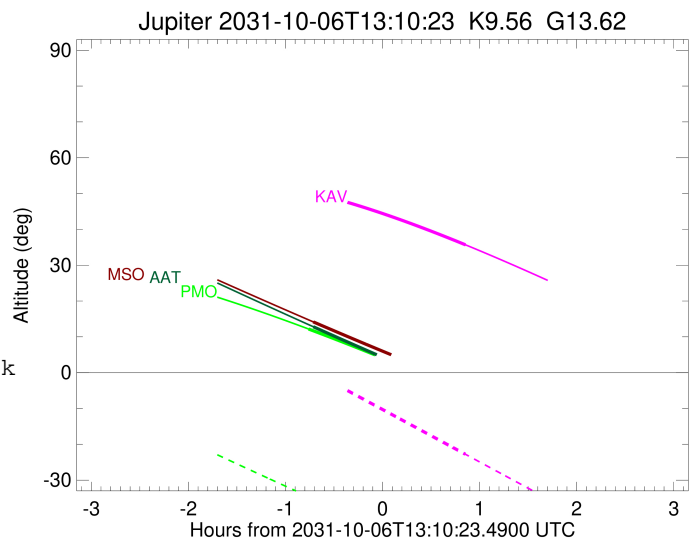
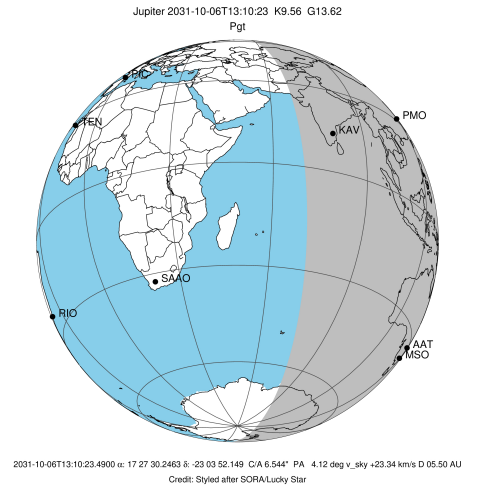


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-06T12:24:44.206	12.18	-34.59	71491.2	-18.97	-21.44
Jupiter	E	2031-10-06T14:02:31.996	-5.76x	-52.87	71491.4	-16.72	-18.95

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-06T13:12:22.390
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      : 4111469113250254720
2Mass ID (if available) : 17273025-2303519
ICRS Star Coord at Epoch: 17h 27m 30.24629s -23:03:52.14912s
RUWE (>1.4 is poor) : 0.93
K magnitude          : 9.560
G magnitude          : 13.624
RP magnitude         : 12.535
BP magnitude         : 14.856
DUPflag             : 0
Distance (au)       : 5.500
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 23.34
Sun-Target sep (deg) : 69.88
Sun-Moon sep (deg)  : 176.85
B (ring opening deg) : -2.31
PA of pole (deg)    : 2.66
Pole direction: RA (deg): 268.05683
Dec (deg): 64.49652
C/A sky separation (" ) : 5.634
C/A sky separation (km) : 22474.0
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
    
```

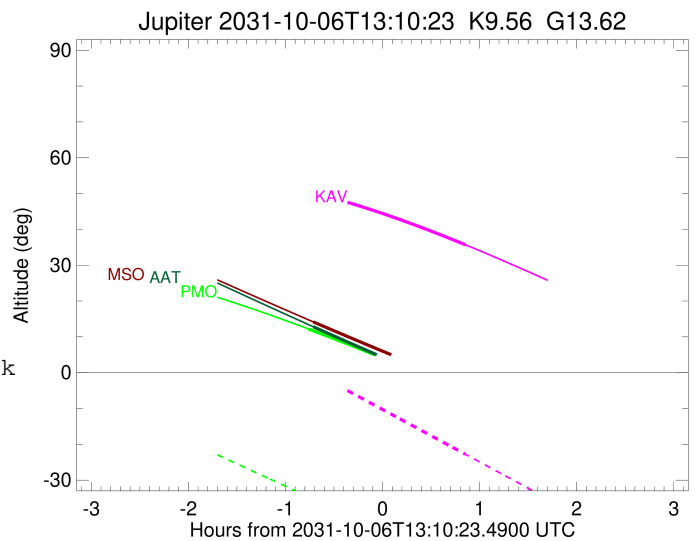
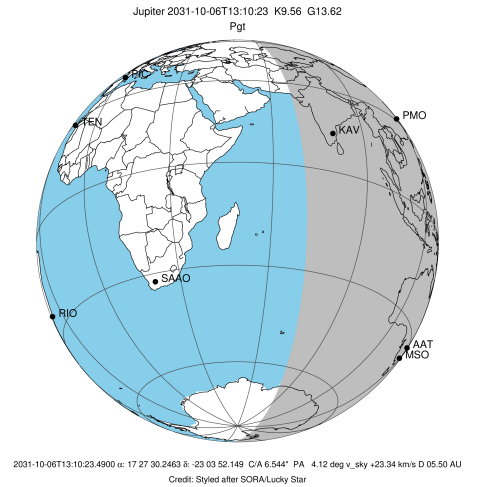


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-06T12:23:00.652	50.63	1.27x	71491.2	-19.66	-22.20
Jupiter	E	2031-10-06T14:01:36.184	35.70	-22.77	71491.4	-17.05	-19.31

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-06T13:14:14.620
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       : 4111469113250254720
2Mass ID (if available) : 17273025-2303519
ICRS Star Coord at Epoch: 17h 27m 30.24629s -23:03:52.14912s
RUWE (>1.4 is poor) : 0.93
K magnitude           : 9.560
G magnitude           : 13.624
RP magnitude         : 12.535
BP magnitude         : 14.856
DUPflag              : 0
Distance (au)        : 5.500
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 23.34
Sun-Target sep (deg) : 69.88
Sun-Moon sep (deg)   : 177.79
B (ring opening deg) : -2.31
PA of pole (deg)     : 2.66
Pole direction: RA (deg): 268.05683
Dec (deg): 64.49652
C/A sky separation (") : 7.296
C/A sky separation (km) : 29105.3
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
    
```

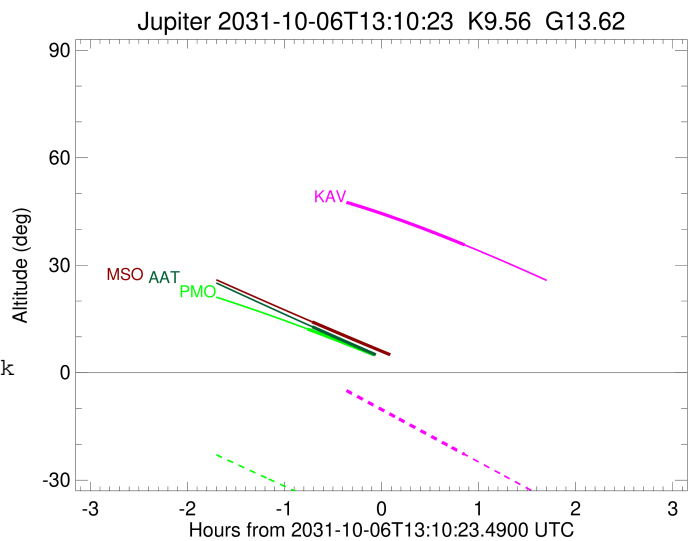
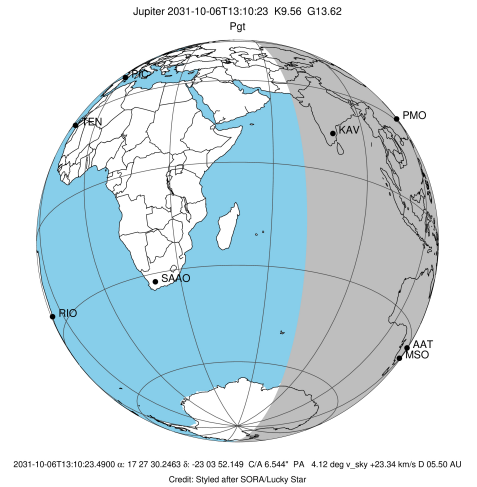


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-06T12:27:38.156	12.81	-48.54	71490.7	-25.08	-28.11
Jupiter	E	2031-10-06T14:00:39.897	-5.24x	-53.65	71490.9	-22.93	-25.78

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-06T13:14:05.560
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      : 4111469113250254720
2Mass ID (if available) : 17273025-2303519
ICRS Star Coord at Epoch: 17h 27m 30.24629s -23:03:52.14912s
RUWE (>1.4 is poor) : 0.93
K magnitude          : 9.560
G magnitude          : 13.624
RP magnitude         : 12.535
BP magnitude         : 14.856
DUPflag             : 0
Distance (au)       : 5.500
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 23.34
Sun-Target sep (deg) : 69.88
Sun-Moon sep (deg)  : 177.84
B (ring opening deg) : -2.31
PA of pole (deg)    : 2.66
Pole direction: RA (deg): 268.05683
Dec (deg): 64.49652
C/A sky separation (" ) : 7.381
C/A sky separation (km) : 29444.9
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	2031-10-06T12:27:35.437	14.18	-45.07	71490.7	-25.39	-28.45
Jupiter	E	2031-10-06T14:00:24.950	-3.07x	-49.63	71490.9	-23.21	-26.09