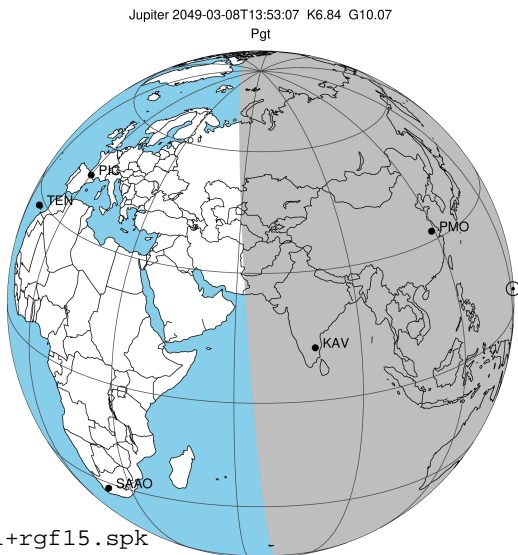


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2049-03-08T13:53:07.060
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3414829785818777984
 2Mass ID (if available) : 05211873+2256410

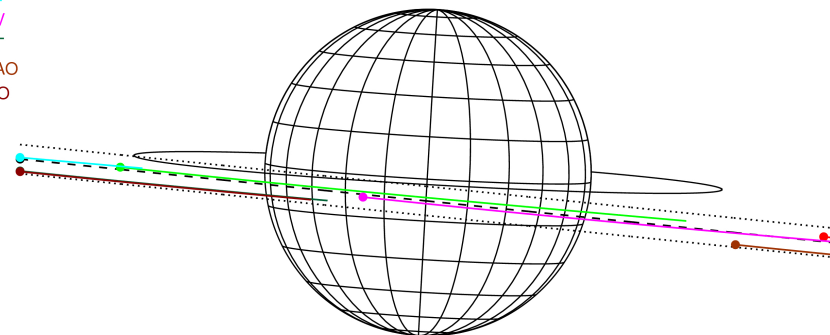
Jupiter 2049-03-08T13:53:07 K6.84 G10.07 Pgt

ICRS Star Coord at Epoch: 05h 21m 18.77688s +22:56:40.88019s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 6.837
 G magnitude : 10.072
 RP magnitude : 9.121
 BP magnitude : 11.000
 DUPflag : 0
 Distance (au) : 4.979
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 10.90
 Sun-Target sep (deg) : 93.36
 Sun-Moon sep (deg) : 35.93
 B (ring opening deg) : 2.35
 PA of pole (deg) : -3.32
 Pole direction: RA (deg): 268.05741
 Dec (deg): 64.49720
 C/A sky separation (") : 3.450
 C/A sky separation (km) : 12459.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp



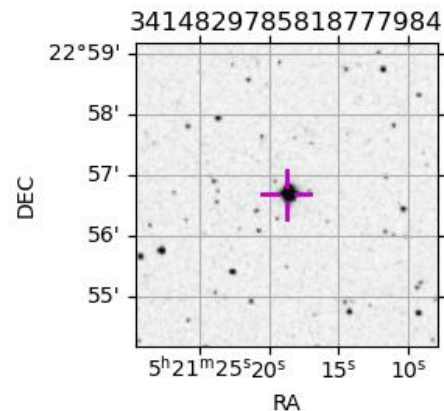
2049-03-08T13:53:07.0600 ex: 05 21 18.77688 s: +22 56 40.880 C/A 3.440" PA 354.13 deg v_sky +10.90 km/s D 04.98 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 PMO
 IRTF
 KAV
 AAT
 SAAO
 MSO



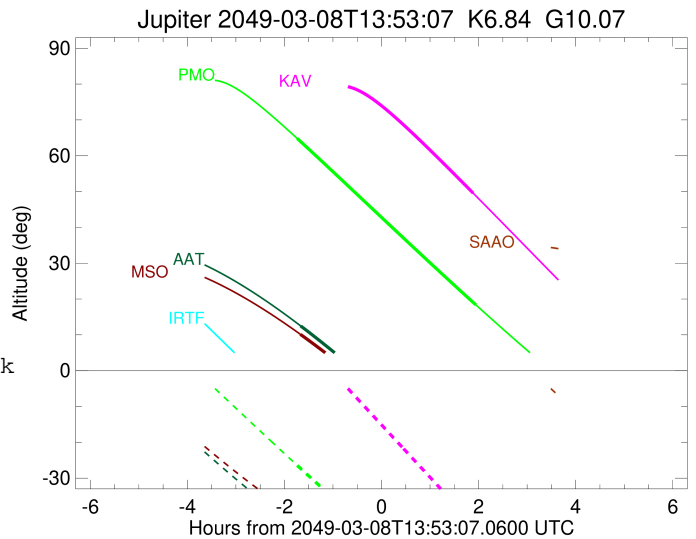
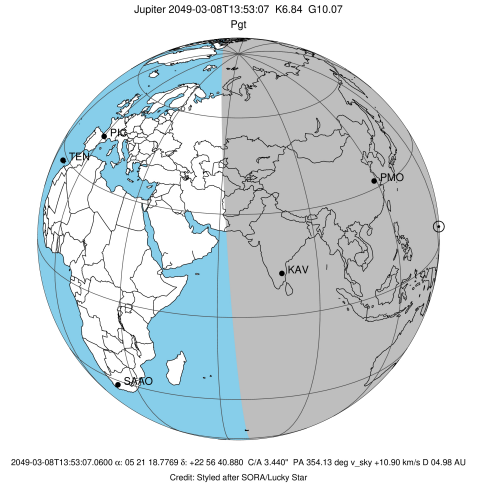
Observable events with sun below -5 deg and altitude above 5 deg

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	+	MAR 08 12:08 - MAR 08 15:49	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	+	MAR 08 15:46 - MAR 08 15:46	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	+	MAR 08 12:13 - MAR 08 12:13	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	MAR 08 12:12 - MAR 08 12:12	Pin



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2049-03-08T14:00:16.000
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      : 3414829785818777984
2Mass ID (if available) : 05211873+2256410
ICRS Star Coord at Epoch: 05h 21m 18.77688s +22:56:40.88019s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 6.837
G magnitude          : 10.072
RP magnitude         : 9.121
BP magnitude         : 11.000
DUPflag             : 0
Distance (au)       : 4.979
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 10.90
Sun-Target sep (deg) : 93.36
Sun-Moon sep (deg)  : 36.81
B (ring opening deg) : 2.35
PA of pole (deg)    : -3.32
Pole direction: RA (deg): 268.05741
Dec (deg): 64.49720
C/A sky separation (" ) : 3.052
C/A sky separation (km) : 11022.5
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
    
```

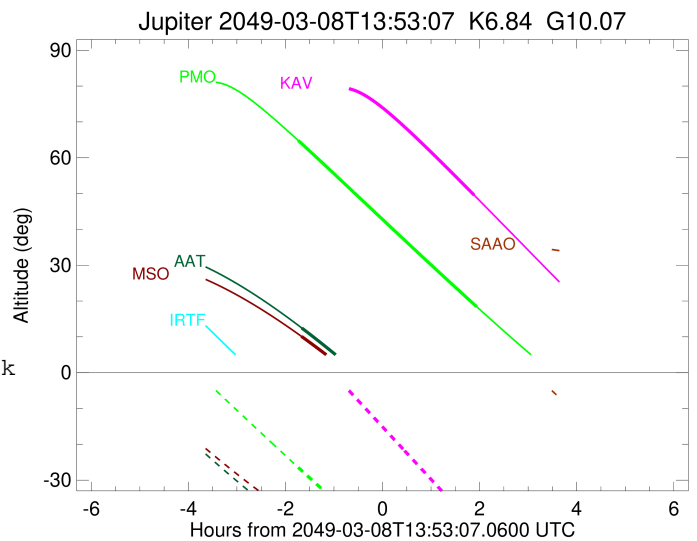
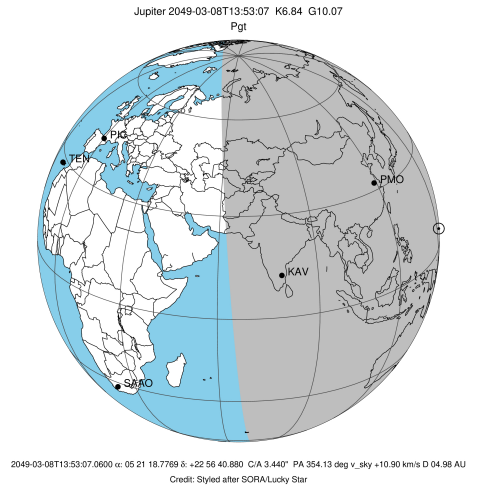


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2049-03-08T12:08:54.032	64.81	-26.44	71491.9	-6.69	-7.64
Jupiter	E	2049-03-08T15:49:40.869	18.38	-62.00	71491.7	-10.72	-12.22

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2049-03-08T13:55:07.630
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        : 3414829785818777984
2Mass ID (if available) : 05211873+2256410
ICRS Star Coord at Epoch: 05h 21m 18.77688s +22:56:40.88019s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 6.837
G magnitude           : 10.072
RP magnitude          : 9.121
BP magnitude          : 11.000
DUPflag              : 0
Distance (au)         : 4.979
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 10.90
Sun-Target sep (deg) : 93.36
Sun-Moon sep (deg)   : 36.63
B (ring opening deg) : 2.35
PA of pole (deg)     : -3.32
Pole direction: RA (deg): 268.05741
Dec (deg): 64.49720
C/A sky separation ("): 3.791
C/A sky separation (km): 13689.7
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
    
```

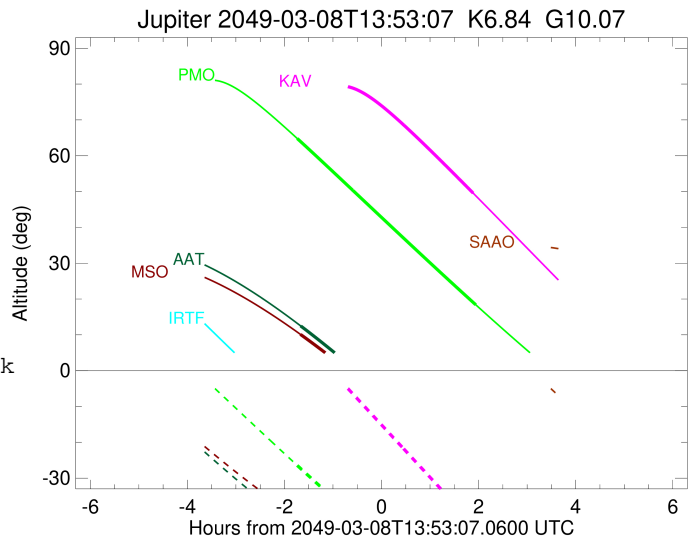
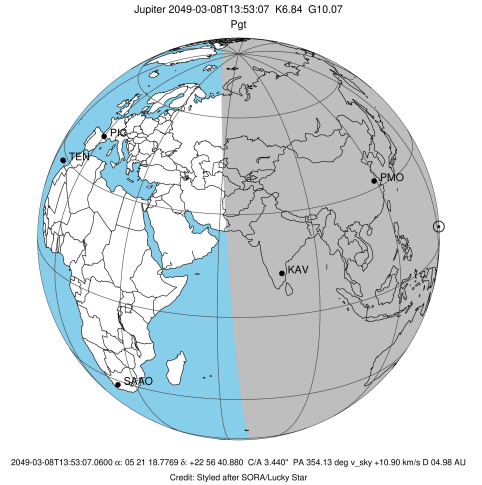


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2049-03-08T12:02:55.725	72.42	11.68x	71491.8	-8.23	-9.39
Jupiter	E	2049-03-08T15:46:27.266	49.54	-42.75	71491.6	-13.34	-15.17

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2049-03-08T14:01:15.500
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       : 3414829785818777984
2Mass ID (if available) : 05211873+2256410
ICRS Star Coord at Epoch: 05h 21m 18.77688s +22:56:40.88019s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 6.837
G magnitude           : 10.072
RP magnitude          : 9.121
BP magnitude          : 11.000
DUPflag              : 0
Distance (au)        : 4.979
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 10.90
Sun-Target sep (deg) : 93.36
Sun-Moon sep (deg)   : 36.52
B (ring opening deg) : 2.35
PA of pole (deg)     : -3.32
Pole direction: RA (deg): 268.05741
Dec (deg): 64.49720
C/A sky separation (") : 4.483
C/A sky separation (km) : 16188.7
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
    
```

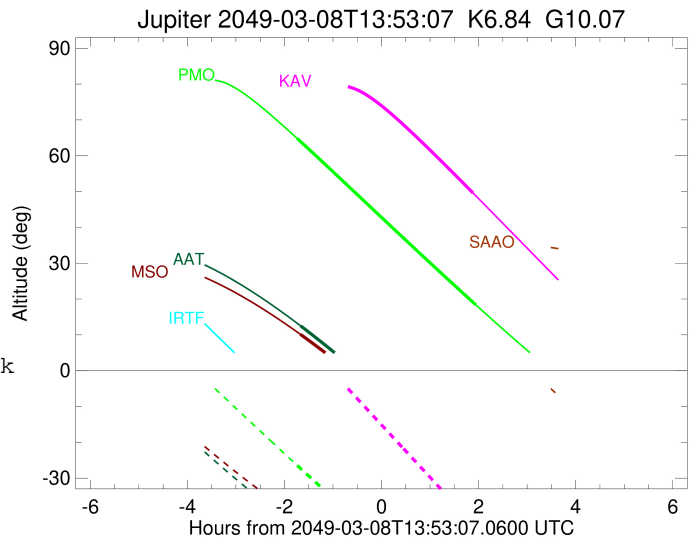
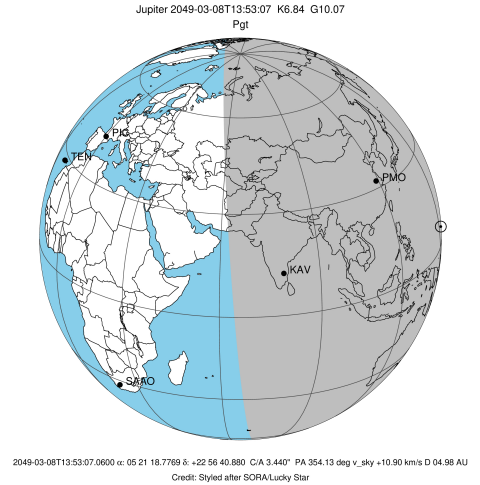


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2049-03-08T12:13:11.964	12.49	-44.09	71491.7	-11.24	-12.80
Jupiter	E	2049-03-08T15:47:07.783	-29.46x	-48.02	71491.5	-14.79	-16.79

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2049-03-08T14:00:49.340
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       : 3414829785818777984
2Mass ID (if available) : 05211873+2256410
ICRS Star Coord at Epoch: 05h 21m 18.77688s +22:56:40.88019s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 6.837
G magnitude          : 10.072
RP magnitude         : 9.121
BP magnitude         : 11.000
DUPflag             : 0
Distance (au)       : 4.979
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 10.90
Sun-Target sep (deg) : 93.36
Sun-Moon sep (deg)  : 36.47
B (ring opening deg) : 2.35
PA of pole (deg)    : -3.32
Pole direction: RA (deg): 268.05741
Dec (deg): 64.49720
C/A sky separation (" ) : 4.570
C/A sky separation (km) : 16505.4
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	2049-03-08T12:12:55.882	10.13	-41.07	71491.7	-11.47	-13.05
Jupiter	E	2049-03-08T15:46:36.765	-29.97x	-44.79	71491.5	-15.09	-17.13