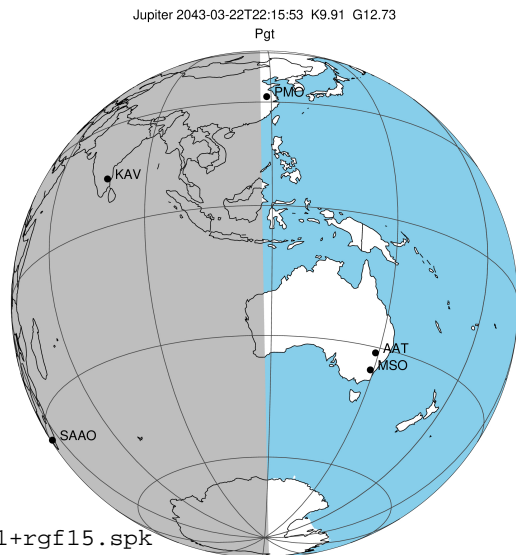


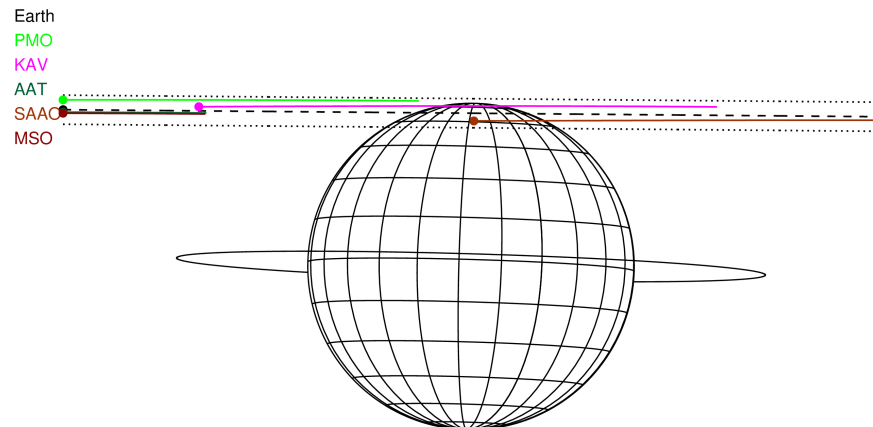
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-03-22T22:15:53.670
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4066598799630406912
 2Mass ID (if available) : 18074008-2258346

Jupiter 2043-03-22T22:15:53 K9.91 G12.73 Pgt

ICRS Star Coord at Epoch: 18h 07m 40.06651s -22:58:34.40175s
 RUWE (>1.4 is poor) : 0.90
 K magnitude : 9.907
 G magnitude : 12.727
 RP magnitude : 11.900
 BP magnitude : 13.458
 DUPflag : 0
 Distance (au) : 5.205
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 13.27
 Sun-Target sep (deg) : 89.82
 Sun-Moon sep (deg) : 120.48
 B (ring opening deg) : -2.47
 PA of pole (deg) : -1.66
 Pole direction: RA (deg): 268.05664
 Dec (deg): 64.49732
 C/A sky separation (") : 17.787
 C/A sky separation (km) : 67148.9
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

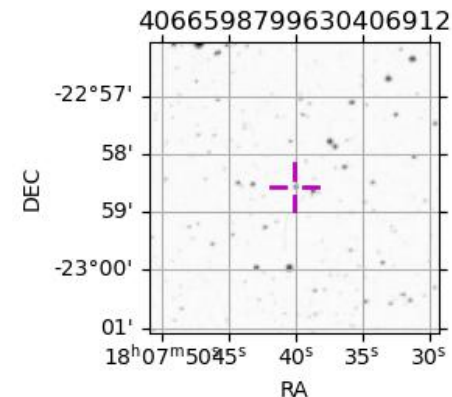


2043-03-22T22:15:53.6700 a: 18 07 40.0665 s: -22 58 34.402 C/A ***** PA 179.51 deg v_sky +13.27 km/s D 05.21 AU
 Credit: Styled after SORA/Lucky Star



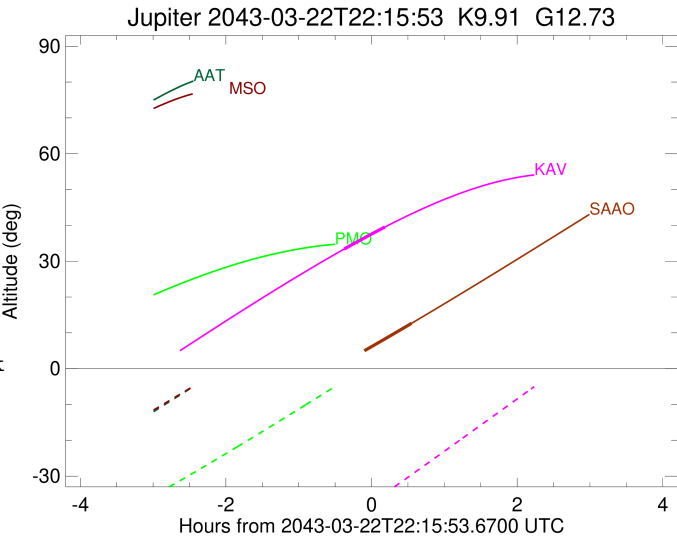
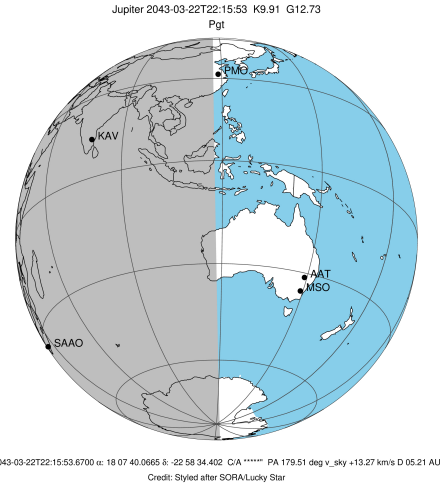
Observable events with sun below -5 deg and altitude above 5 deg

| 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 | | | Pnn |
| 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 22 21:53 - MAR 22 22:26 | Pie |
| 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 | | | Pnn |
| SAAO | So. Afr. Astro. Obs. (Sutherland) | -32.4 | 20.8 | + | MAR 22 22:48 - MAR 22 22:48 | Pne |
| MSO | Mt. Stromlo Observatory | -35.3 | 149.0 | | | Pnn |



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-03-22T22:10:03.960
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        : 4066598799630406912
2Mass ID (if available) : 18074008-2258346
ICRS Star Coord at Epoch: 18h 07m 40.06651s -22:58:34.40175s
RUWE (>1.4 is poor) : 0.90
K magnitude           : 9.907
G magnitude           : 12.727
RP magnitude          : 11.900
BP magnitude          : 13.458
DUPflag              : 0
Distance (au)         : 5.205
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 13.27
Sun-Target sep (deg)  : 89.82
Sun-Moon sep (deg)   : 121.28
B (ring opening deg) : -2.47
PA of pole (deg)     : -1.66
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation (") : 18.625
C/A sky separation (km) : 70312.2
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
    
```

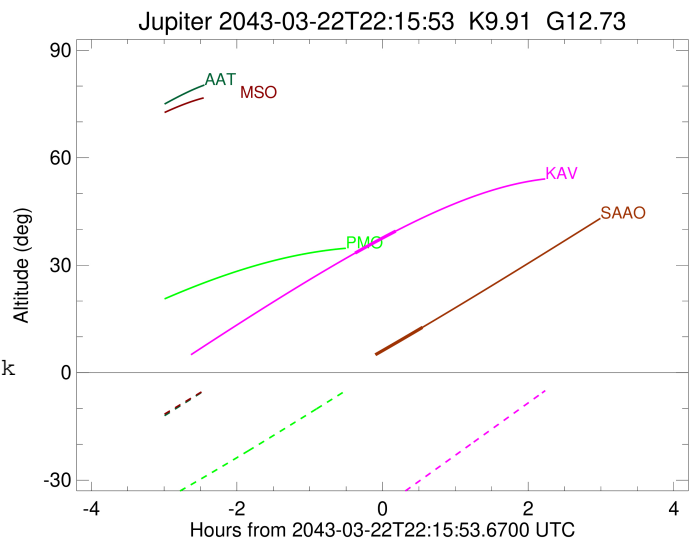
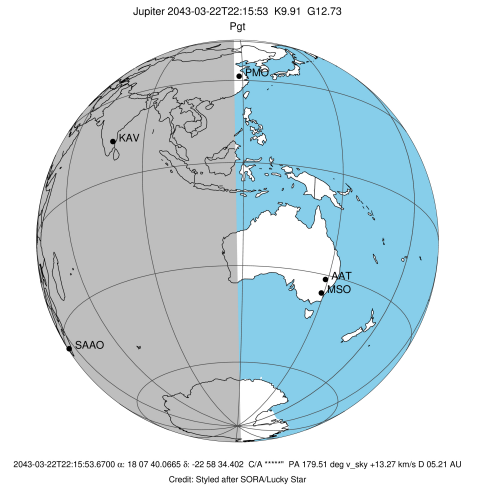


x: target alt < 5.0 deg or sun > -5.0 deg

| Target | I/E | UTC | alt | alt-sun | radius | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I | 2043-03-22T21:53:25.963 | 33.40 | -42.91 | 71484.0 | 77.68 | 79.11 |
| Jupiter | E | 2043-03-22T22:26:44.081 | 39.50 | -34.94 | 71483.9 | 80.91 | 81.97 |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-03-22T22:08:14.500
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : SAAO
Location              : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)        : -32.37953
E. Longitude (deg)    : 20.81070
Altitude (km)         : 1.768
Gaia source ID        : 4066598799630406912
2Mass ID (if available) : 18074008-2258346
ICRS Star Coord at Epoch: 18h 07m 40.06651s -22:58:34.40175s
RUWE (>1.4 is poor) : 0.90
K magnitude           : 9.907
G magnitude           : 12.727
RP magnitude          : 11.900
BP magnitude          : 13.458
DUPflag              : 0
Distance (au)         : 5.205
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 13.27
Sun-Target sep (deg)  : 89.82
Sun-Moon sep (deg)    : 120.95
B (ring opening deg) : -2.47
PA of pole (deg)     : -1.66
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation (") : 16.887
C/A sky separation (km) : 63753.1
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 | 2043-03-22T21:27:58.176 | -2.96x | -53.95 | 71485.6 | 61.20 | 64.17 |
| Jupiter | E | 2043-03-22T22:48:46.335 | 12.63 | -58.65 | 71485.2 | 64.82 | 67.51 |