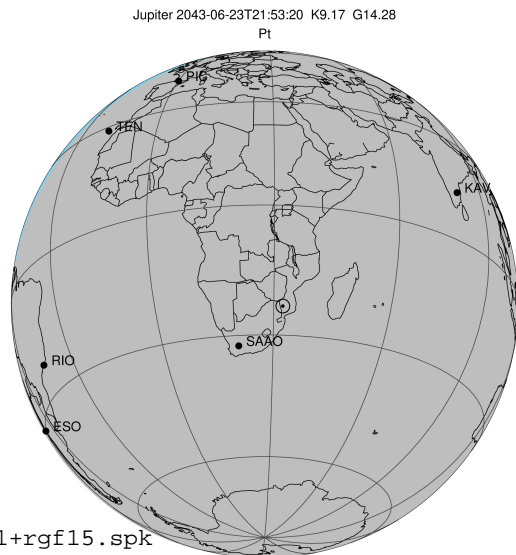


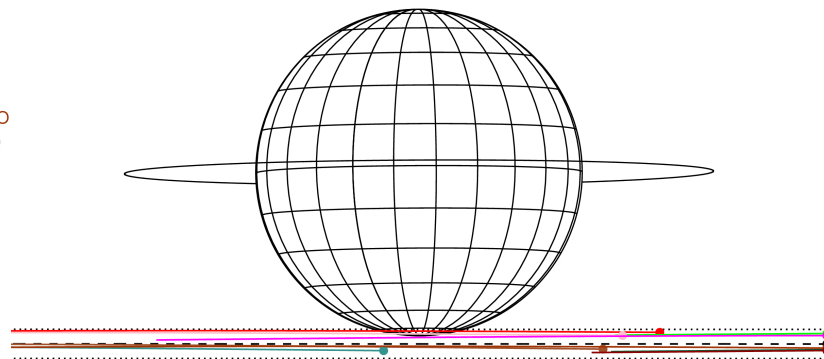
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-06-23T21:53:20.400
 Event type : Pt
 : Jupiter occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4068870979120813824
 2Mass ID (if available) : 17493794-2305072

Jupiter 2043-06-23T21:53:20 K9.17 G14.28 Pt

ICRS Star Coord at Epoch: 17h 49m 37.92788s -23:05:07.29536s
 RUWE (>1.4 is poor) : 0.98
 K magnitude : 9.167
 G magnitude : 14.278
 RP magnitude : 12.999
 BP magnitude : 16.102
 DUPflag : 0
 Distance (au) : 4.251
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.34
 Sun-Target sep (deg) : 175.86
 Sun-Moon sep (deg) : 19.74
 B (ring opening deg) : -2.42
 PA of pole (deg) : 0.28
 Pole direction: RA (deg): 268.05669
 Dec (deg): 64.49732
 C/A sky separation (") : 24.359
 C/A sky separation (km) : 75101.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



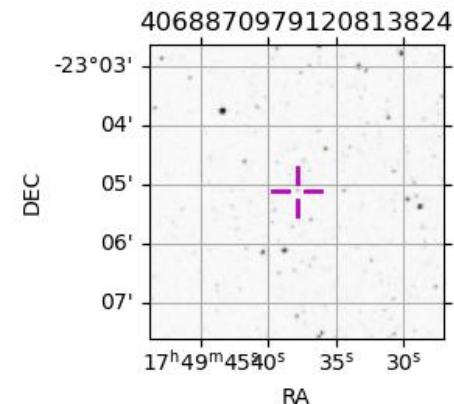
Earth
 PIC
 PMO
 TEN
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



2043-06-23T21:53:20.4000 a: 17 49 37.92788 s: -23 05 07.295 C/A ***** PA 359.99 deg v_sky -16.34 km/s D 04.25 AU
 Credit: Styled after SORA/Lucky Star

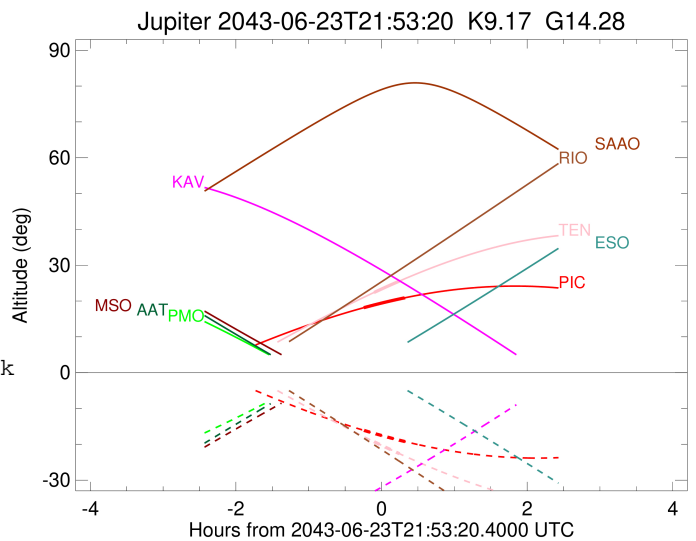
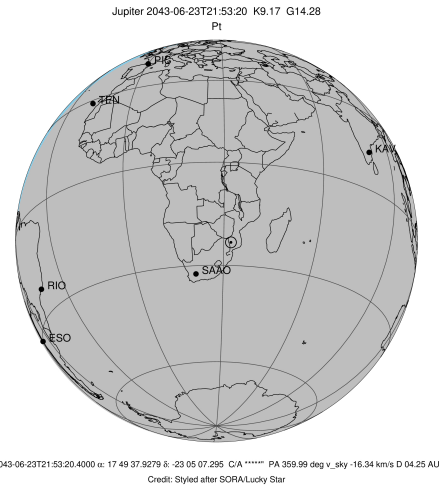
Observable events with sun below -5 deg and altitude above 5 deg

| Obs | Location | lat | Elon | Target | Observed Events Interval | OCode |
|------|-----------------------------------|-------|-------|--------|-----------------------------|-------|
| PIC | Pic du Midi | 42.9 | 0.1 | + + | JUN 23 21:38 - JUN 23 22:12 | Pie |
| 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 | + + | JUN 23 21:47 - JUN 23 22:08 | Pie |
| IRTF | Mauna Kea/IRTF | 19.8 | 204.5 | | | Pnn |
| KAV | Kavalur Observatory | 12.6 | 78.8 | | | Pnn |
| 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 | | | Pnn |
| MSO | Mt. Stromlo Observatory | -35.3 | 149.0 | | | Pnn |



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-23T21:55:43.950
Event type           : Pt
: Jupiter occs: topocentric, not geocentric
: Not a ringed target
Observer code        : PIC
Location             : Pic du Midi
Latitude (deg)       : 42.93656
E. Longitude (deg)   : 0.14231
Altitude (km)        : 2.890
Gaia source ID       : 4068870979120813824
2Mass ID (if available) : 17493794-2305072
ICRS Star Coord at Epoch: 17h 49m 37.92788s -23:05:07.29536s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 9.167
G magnitude           : 14.278
RP magnitude          : 12.999
BP magnitude          : 16.102
DUPflag              : 0
Distance (au)         : 4.251
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.34
Sun-Target sep (deg) : 175.86
Sun-Moon sep (deg)   : 20.35
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.28
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 22.535
C/A sky separation (km): 69478.7
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
    
```

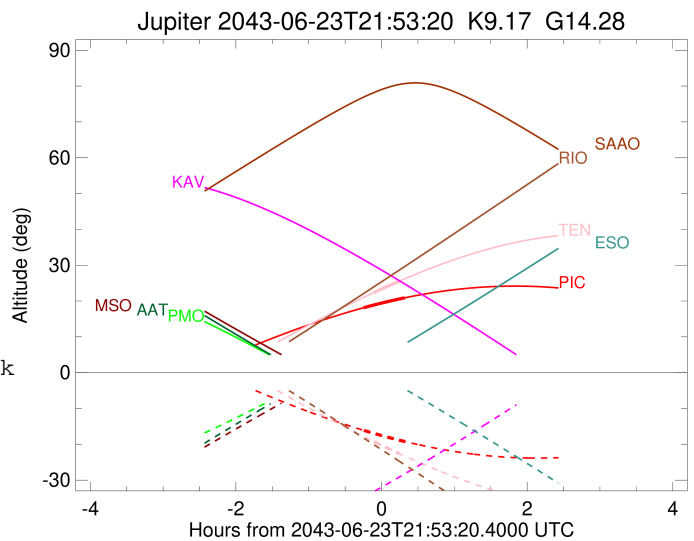
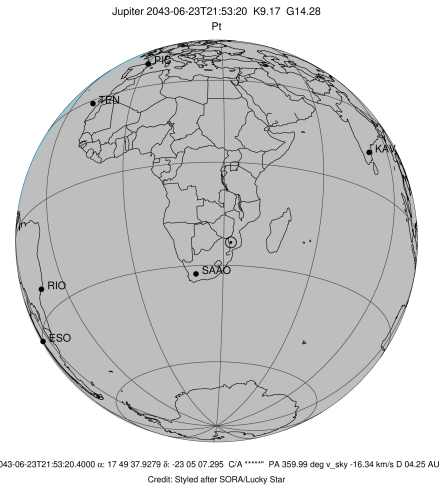


x: target alt < 5.0 deg or sun > -5.0 deg

| Target | I/E | UTC | alt | alt-sun | radius | lat-geo | lat-geodetic |
|---------|-----|-------------------------|-------|---------|---------|---------|--------------|
| Jupiter | I | 2043-06-23T21:38:54.608 | 18.15 | -16.12 | 71484.4 | -76.68 | -78.22 |
| Jupiter | E | 2043-06-23T22:12:32.623 | 20.89 | -19.22 | 71484.5 | -75.72 | -77.35 |

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-23T21:57:42.680
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: Not a ringed target
Observer code         : TEN
Location              : Teide Obs./Tenerife
Latitude (deg)        : 28.30050
E. Longitude (deg)    : 343.48909
Altitude (km)         : 2.395
Gaia source ID        : 4068870979120813824
2Mass ID (if available) : 17493794-2305072
ICRS Star Coord at Epoch: 17h 49m 37.92788s -23:05:07.29536s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 9.167
G magnitude           : 14.278
RP magnitude          : 12.999
BP magnitude          : 16.102
DUPflag              : 0
Distance (au)         : 4.251
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.34
Sun-Target sep (deg)  : 175.86
Sun-Moon sep (deg)   : 20.54
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.28
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 22.934
C/A sky separation (km) : 70710.3
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 | 2043-06-23T21:47:12.805 | 22.38 | -19.27 | 71484.1 | -81.87 | -82.82 |
| Jupiter | E | 2043-06-23T22:08:12.083 | 25.58 | -22.62 | 71484.2 | -80.60 | -81.69 |