

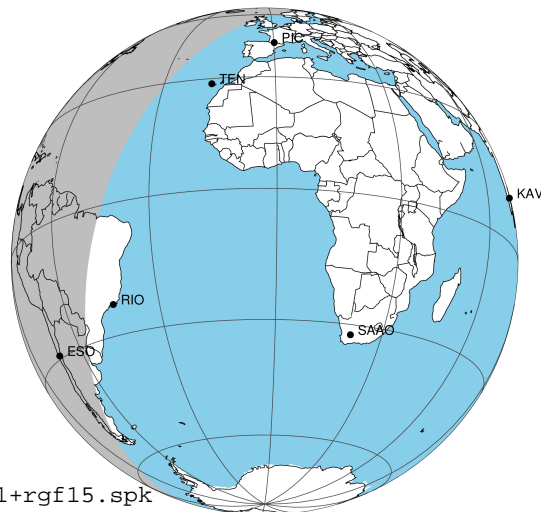
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2029-12-28T08:53:48.390
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 6305861023959779712
 2Mass ID (if available) : 15092122-1638439

Jupiter 2029-12-28T08:53:48 K8.91 G11.94 Pgt

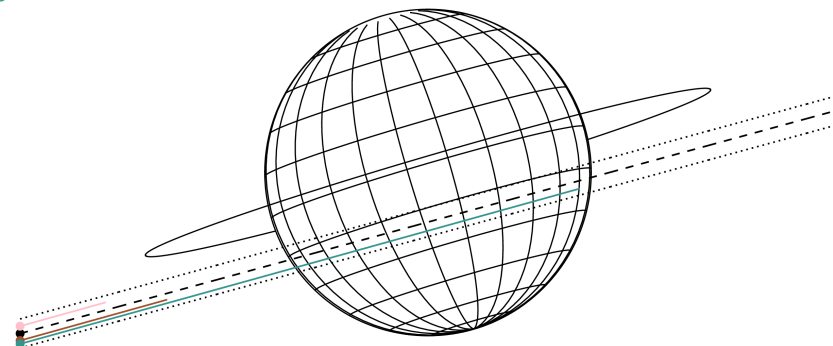
ICRS Star Coord at Epoch: 15h 09m 21.18774s -16:38:50.05649s

RUWE (>1.4 is poor) : 26.66
 K magnitude : 8.908
 G magnitude : 11.941
 RP magnitude : 10.948
 BP magnitude : 12.904
 DUPflag : 0
 Distance (au) : 6.045
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 33.08
 Sun-Target sep (deg) : 46.99
 Sun-Moon sep (deg) : 43.91
 B (ring opening deg) : -3.10
 PA of pole (deg) : 16.34
 Pole direction: RA (deg): 268.05735
 Dec (deg): 64.49653
 C/A sky separation (") : 4.777
 C/A sky separation (km) : 20946.7
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2029-12-28T08:53:48 K8.91 G11.94
 Pgt



Earth
 TEN
 RIO
 ESO

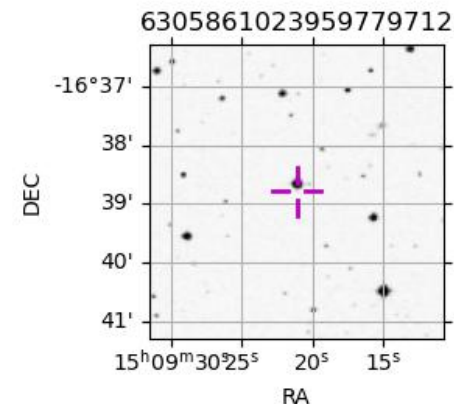


2029-12-28T08:53:48.3900 at: 15 09 21.1877 s: -16 38 50.056 C/A 4.777" PA 15.28 deg v_sky +33.08 km/s D 06.05 AU

Credit: Styled after SORA/Lucky Star

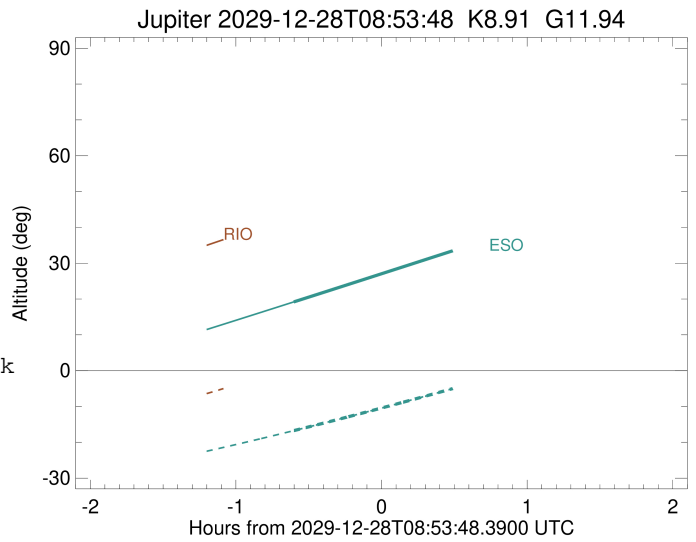
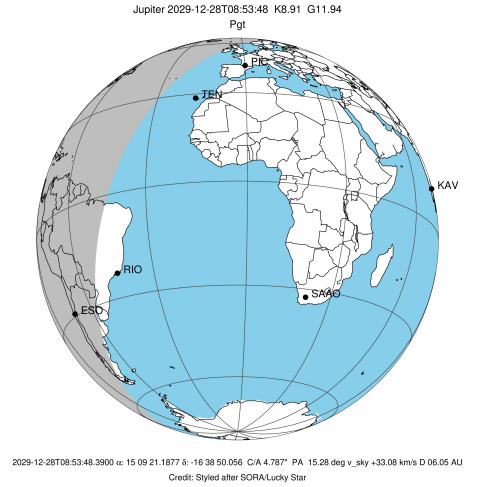
Observable events with sun below -5 deg and altitude above 5 deg

| 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 | | | Pnn |
| RIO | Rio de Janeiro | -22.9 | 316.8 | | | Pnn |
| ESO | European Southern Obs. (3.6m) | -29.3 | 289.3 | + | DEC 28 08:17 - DEC 28 08:17 | Pin |
| 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 |



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2029-12-28T08:51:39.220
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : ESO
Location            : European Southern Obs. (3.6m)
Latitude (deg)      : -29.26097
E. Longitude (deg)  : 289.26831
Altitude (km)       : 2.400
Gaia source ID      : 6305861023959779712
2Mass ID (if available) : 15092122-1638439
ICRS Star Coord at Epoch: 15h 09m 21.18774s -16:38:50.05649s
RUWE (>1.4 is poor) : 26.66
K magnitude          : 8.908
G magnitude          : 11.941
RP magnitude         : 10.948
BP magnitude         : 12.904
DUPflag             : 0
Distance (au)        : 6.045
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 33.08
Sun-Target sep (deg) : 46.99
Sun-Moon sep (deg)   : 43.68
B (ring opening deg) : -3.10
PA of pole (deg)     : 16.34
Pole direction: RA (deg): 268.05735
Dec (deg): 64.49653
C/A sky separation (") : 5.610
C/A sky separation (km) : 24597.3
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 | 2029-12-28T08:17:44.703 | 19.21 | -16.72 | 71490.6 | -19.28 | -21.78 |
| Jupiter | E | 2029-12-28T09:25:37.716 | 34.00 | -4.53x | 71490.3 | -20.89 | -23.56 |