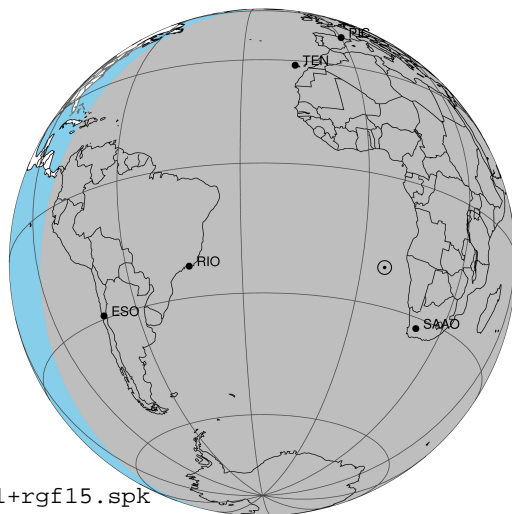


target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-07-16T23:41:18.020  
 Event type : Pt  
 : Jupiter occs: topocentric, not geocentric  
 : Not a ringed target  
 Gaia source ID : 4116722648523345536  
 2Mass ID (if available) : 17375930-2303182

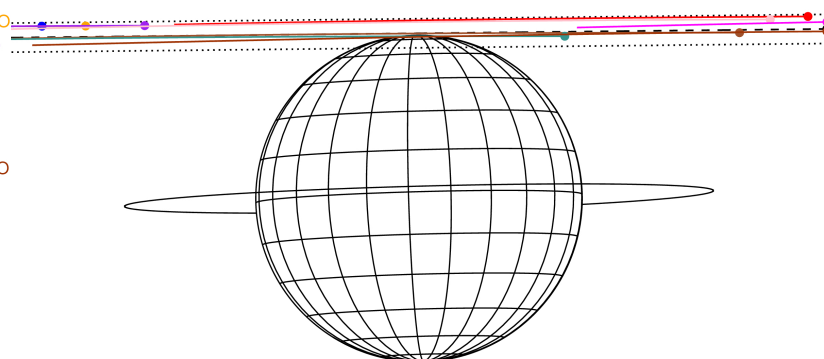
Jupiter 2043-07-16T23:41:18 K8.91 G14.82 Pt

ICRS Star Coord at Epoch: 17h 37m 59.30715s -23°03'18.63627s  
 RUWE (>1.4 is poor) : 0.76  
 K magnitude : 8.910  
 G magnitude : 14.816  
 RP magnitude : 13.350  
 BP magnitude : 17.726  
 DUPflag : 0  
 Distance (au) : 4.344  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -12.83  
 Sun-Target sep (deg) : 151.19  
 Sun-Moon sep (deg) : 29.69  
 B (ring opening deg) : -2.40  
 PA of pole (deg) : 1.53  
 Pole direction: RA (deg): 268.05670  
 Dec (deg): 64.49732  
 C/A sky separation (") : 22.972  
 C/A sky separation (km) : 72370.8  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



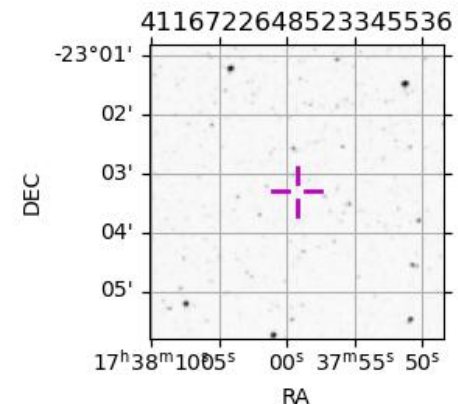
2043-07-16T23:41:18.0200 a: 17 37 59.3072 & -23 03 18.636 C/A \*\*\*\*\* PA 180.61 deg v\_sky -12.83 km/s D 04.34 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PIC  
 PAL  
 KPNO  
 MCD  
 TEN  
 KAV  
 RIO  
 ESO  
 SAAO



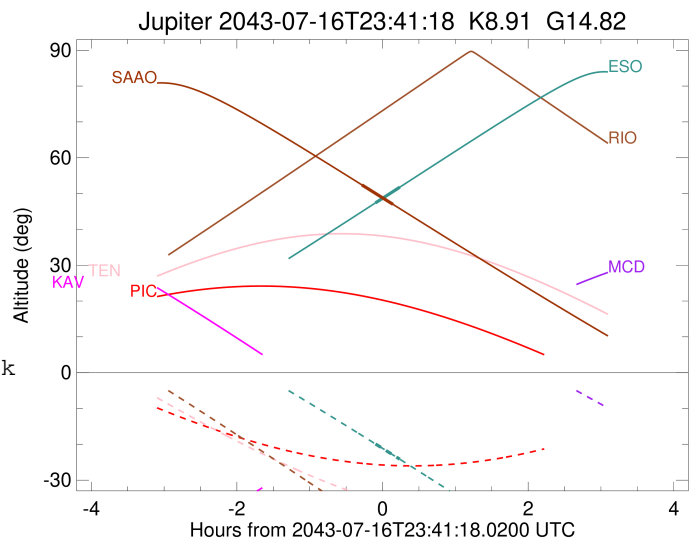
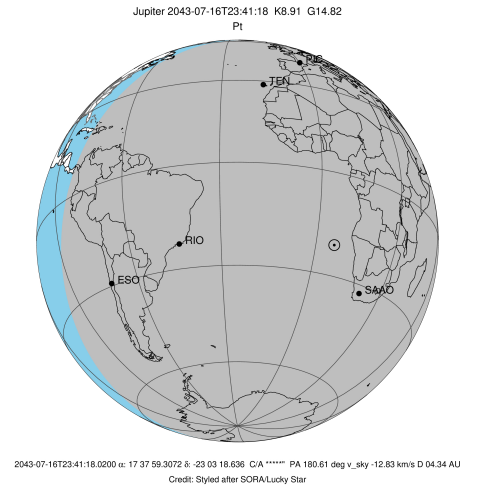
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	JUL 16 23:35 - JUL 16 23:55	Pie
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUL 16 23:24 - JUL 16 23:49	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-16T23:45:35.150
Event type           : Pt
: Jupiter occs: topocentric, not geocentric
: 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       : 4116722648523345536
2Mass ID (if available) : 17375930-2303182
ICRS Star Coord at Epoch: 17h 37m 59.30715s -23:03:18.63627s
RUWE (>1.4 is poor) : 0.76
K magnitude           : 8.910
G magnitude           : 14.816
RP magnitude          : 13.350
BP magnitude          : 17.726
DUPflag              : 0
Distance (au)        : 4.344
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -12.83
Sun-Target sep (deg) : 151.19
Sun-Moon sep (deg)   : 29.52
B (ring opening deg) : -2.40
PA of pole (deg)     : 1.53
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation ("): 22.552
C/A sky separation (km): 71048.2
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
    
```

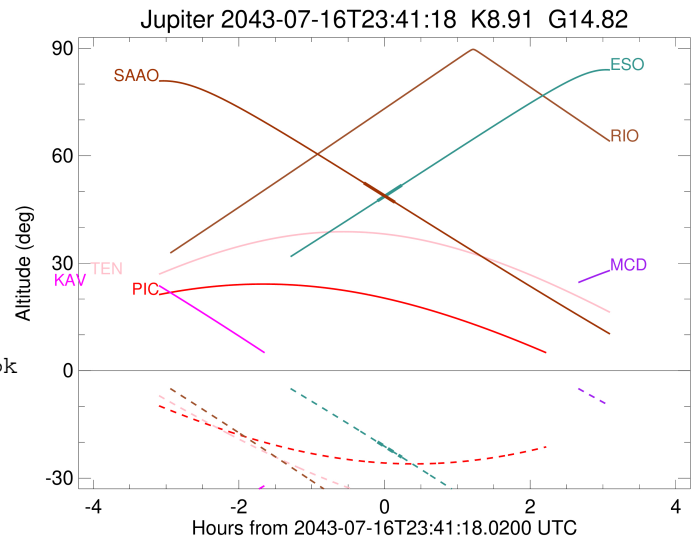
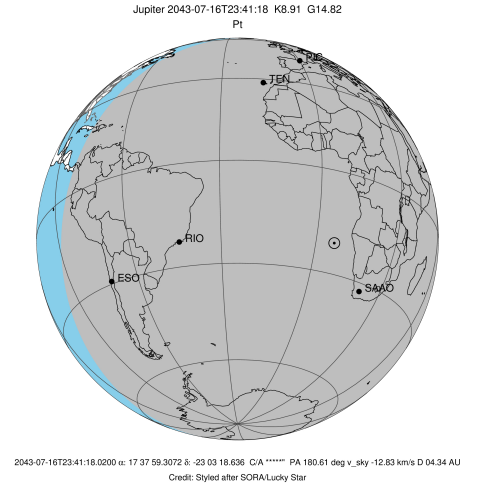


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-16T23:35:32.672	47.39	-19.90	71484.3	81.88	82.83
Jupiter	E	2043-07-16T23:55:37.101	51.79	-24.17	71484.2	84.53	85.17

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-16T23:37:06.660
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: 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        : 4116722648523345536
2Mass ID (if available) : 17375930-2303182
ICRS Star Coord at Epoch: 17h 37m 59.30715s -23:03:18.63627s
RUWE (>1.4 is poor) : 0.76
K magnitude           : 8.910
G magnitude           : 14.816
RP magnitude          : 13.350
BP magnitude          : 17.726
DUPflag              : 0
Distance (au)         : 4.344
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -12.83
Sun-Target sep (deg) : 151.19
Sun-Moon sep (deg)   : 30.48
B (ring opening deg) : -2.40
PA of pole (deg)     : 1.53
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation ("): 22.465
C/A sky separation (km): 70775.0
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	2043-07-16T23:24:19.426	52.41	-75.67	71484.3	81.12	82.16
Jupiter	E	2043-07-16T23:49:54.858	46.98	-71.49	71484.3	82.00	82.94