

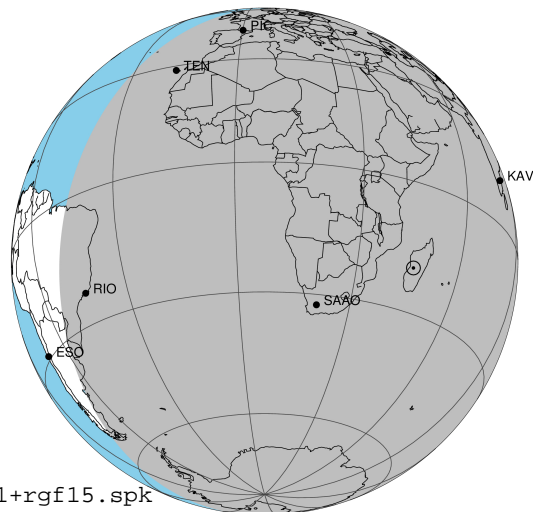
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-07-23T21:04:38.050
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116687228033131136
 2Mass ID (if available) : 17351767-2303398

Jupiter 2043-07-23T21:04:38 K7.09 G13.46 Pgt

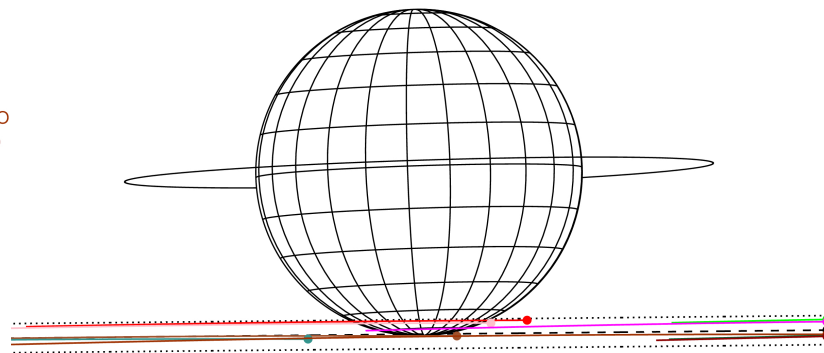
ICRS Star Coord at Epoch: 17h 35m 17.66199s -23°03'40.32018s

RUWE (>1.4 is poor) : 0.84
 K magnitude : 7.089
 G magnitude : 13.459
 RP magnitude : 11.933
 BP magnitude : 16.917
 DUPflag : 0
 Distance (au) : 4.399
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -10.86
 Sun-Target sep (deg) : 144.00
 Sun-Moon sep (deg) : 56.86
 B (ring opening deg) : -2.38
 PA of pole (deg) : 1.82
 Pole direction: RA (deg): 268.05670
 Dec (deg): 64.49731
 C/A sky separation (") : 22.198
 C/A sky separation (km) : 70819.7
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-07-23T21:04:38 K7.09 G13.46
 Pgt



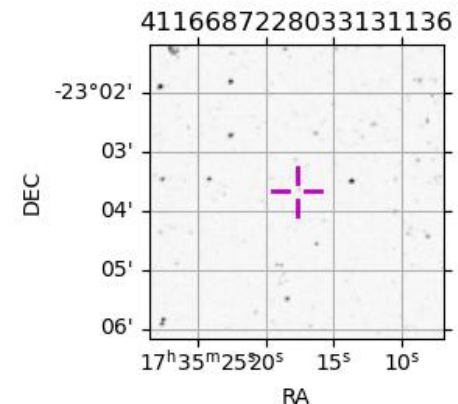
Earth
 PIC
 PMO
 TEN
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



2043-07-23T21:04:38.0500 α: 17 35 17.6620 δ: -23 03 40.320 C/A ***** PA 0.57 deg v_sky -10.86 km/s D 04.40 AU
 Credit: Styled after SORA/Lucky Star

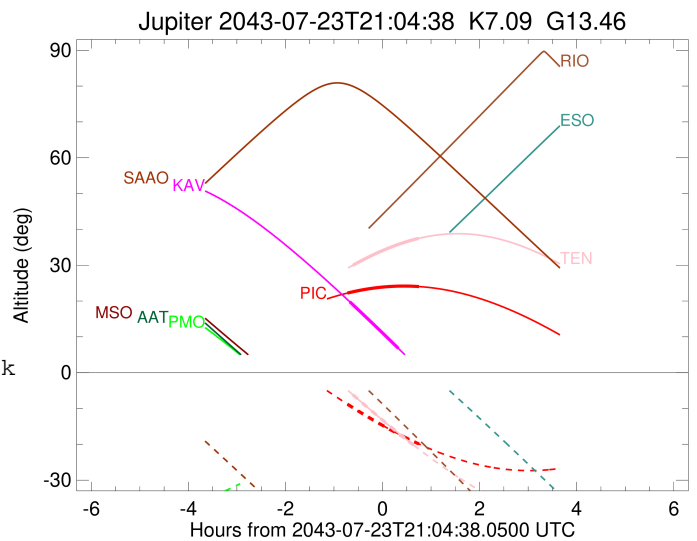
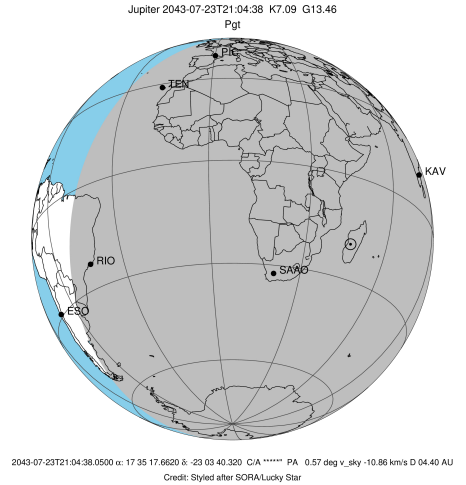
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+ +	JUL 23 20:21 - JUL 23 21:49	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	+ +	JUL 23 20:27 - JUL 23 21:48	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	JUL 23 20:24 - JUL 23 21:24	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			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-23T21:05:37.950
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : 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     : 4116687228033131136
2Mass ID (if available) : 17351767-2303398
ICRS Star Coord at Epoch: 17h 35m 17.66199s -23:03:40.32018s
RUWE (>1.4 is poor) : 0.84
K magnitude        : 7.089
G magnitude        : 13.459
RP magnitude       : 11.933
BP magnitude       : 16.917
DUPflag           : 0
Distance (au)     : 4.399
f0 (km)           : 0.00
g0 (km)           : 0.00
skyplane vel. (km/s) : -10.86
Sun-Target sep (deg) : 144.00
Sun-Moon sep (deg) : 57.28
B (ring opening deg) : -2.38
PA of pole (deg)   : 1.82
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49731
C/A sky separation (" ) : 20.380
C/A sky separation (km) : 65021.3
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
    
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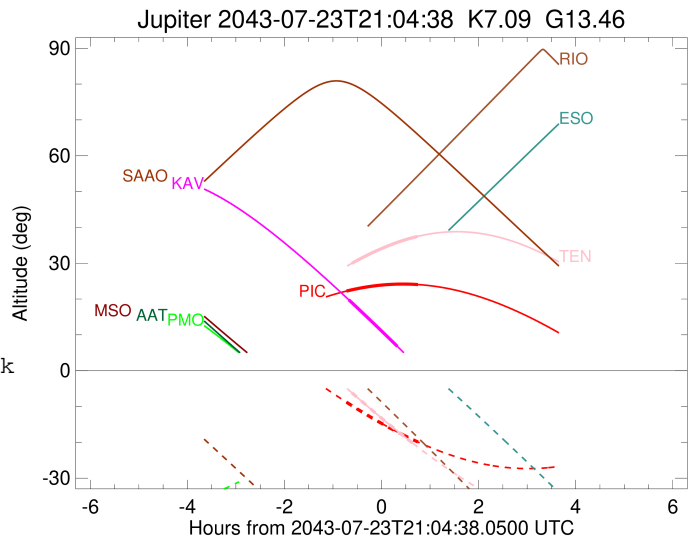
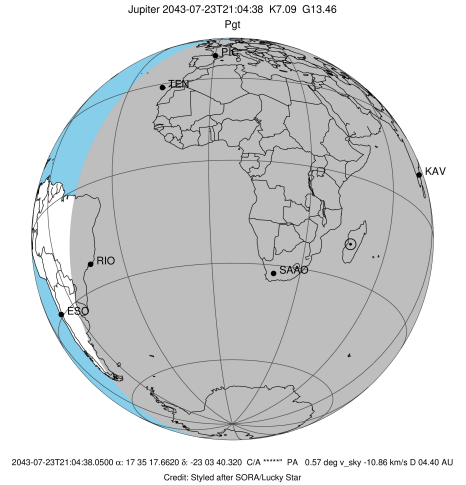


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-23T20:21:32.538	22.23	-8.83	71485.4	-66.74	-69.26
Jupiter	E	2043-07-23T21:49:43.633	24.03	-19.91	71485.7	-64.07	-66.82

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-23T21:08:31.160
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: 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        : 4116687228033131136
2Mass ID (if available) : 17351767-2303398
ICRS Star Coord at Epoch: 17h 35m 17.66199s -23:03:40.32018s
RUWE (>1.4 is poor)  : 0.84
K magnitude           : 7.089
G magnitude           : 13.459
RP magnitude          : 11.933
BP magnitude          : 16.917
DUPflag               : 0
Distance (au)         : 4.399
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -10.86
Sun-Target sep (deg)  : 144.00
Sun-Moon sep (deg)    : 57.52
B (ring opening deg) : -2.38
PA of pole (deg)      : 1.82
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49731
C/A sky separation (") : 20.695
C/A sky separation (km) : 66027.1
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
    
```

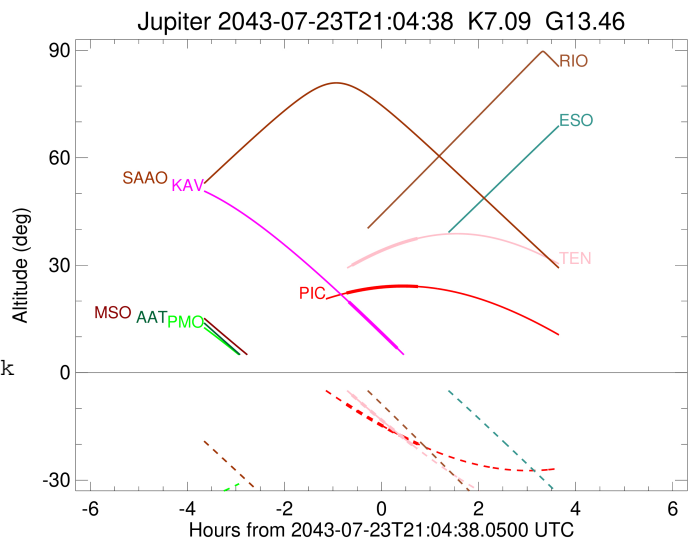
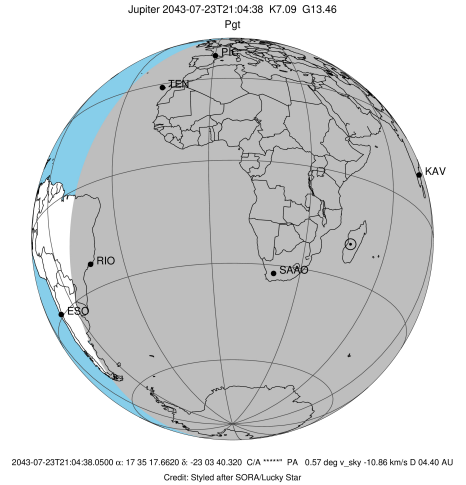


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-23T20:27:58.405	29.96	-6.16	71485.2	-68.98	-71.30
Jupiter	E	2043-07-23T21:48:59.473	37.46	-21.24	71485.5	-65.84	-68.45

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-23T20:54:07.590
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        : 4116687228033131136
2Mass ID (if available) : 17351767-2303398
ICRS Star Coord at Epoch: 17h 35m 17.66199s -23:03:40.32018s
RUWE (>1.4 is poor) : 0.84
K magnitude           : 7.089
G magnitude           : 13.459
RP magnitude          : 11.933
BP magnitude          : 16.917
DUPflag              : 0
Distance (au)         : 4.399
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -10.86
Sun-Target sep (deg) : 144.00
Sun-Moon sep (deg)   : 56.55
B (ring opening deg) : -2.38
PA of pole (deg)     : 1.82
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49731
C/A sky separation (") : 21.524
C/A sky separation (km) : 68667.8
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	2043-07-23T20:24:13.647	19.77	-50.29	71484.8	-74.11	-75.92
Jupiter	E	2043-07-23T21:24:12.105	6.79	-40.31	71484.9	-73.32	-75.21