

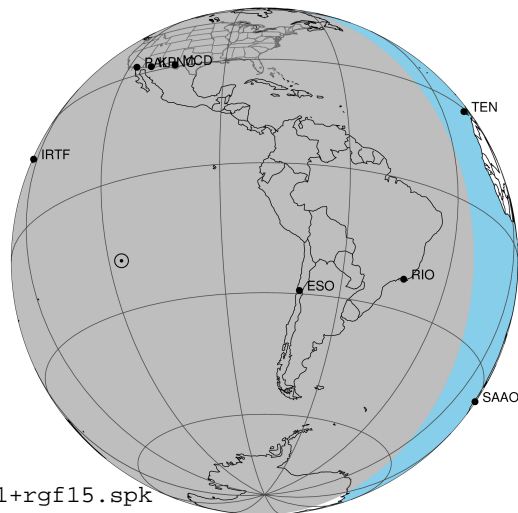
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-05-14T07:41:43.080
 Event type : Pt
 : Jupiter occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4068886750245047424
 2Mass ID (if available) : 17481056-2253594

Jupiter 2031-05-14T07:41:43 K8.68 G10.60 Pt

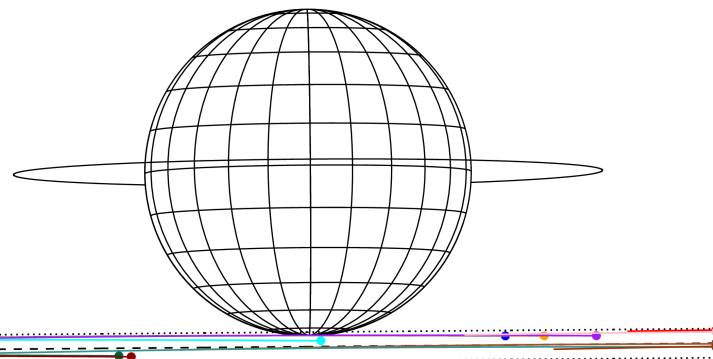
ICRS Star Coord at Epoch: 17h 48m 10.56129s -22:54:00.07814s

RUWE (>1.4 is poor) : 0.71
 K magnitude : 8.676
 G magnitude : 10.600
 RP magnitude : 9.948
 BP magnitude : 11.072
 DUPflag : 0
 Distance (au) : 4.426
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -11.29
 Sun-Target sep (deg) : 145.63
 Sun-Moon sep (deg) : 62.46
 B (ring opening deg) : -2.60
 PA of pole (deg) : 0.44
 Pole direction: RA (deg): 268.05695
 Dec (deg): 64.49651
 C/A sky separation (") : 23.763
 C/A sky separation (km) : 76288.2
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-05-14T07:41:43 K8.68 G10.60 Pt



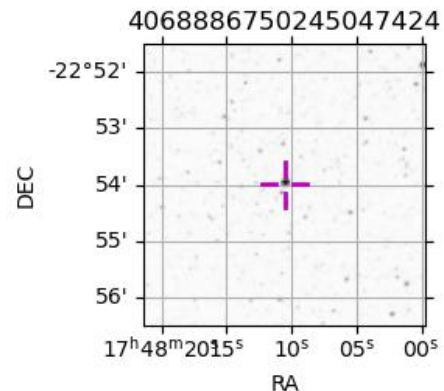
Earth
 PIC
 PAL
 KPNO
 MCD
 TEN
 IRTF
 RIO
 ESO
 AAT
 SAAO
 MSO



2031-05-14T07:41:43.0800 α: 17 48 10.5613 δ: -22 54 00.078 C/A ***** PA 0.48 deg v_sky -11.29 km/s D 04.43 AU
 Credit: Styled after SORA/Lucky Star

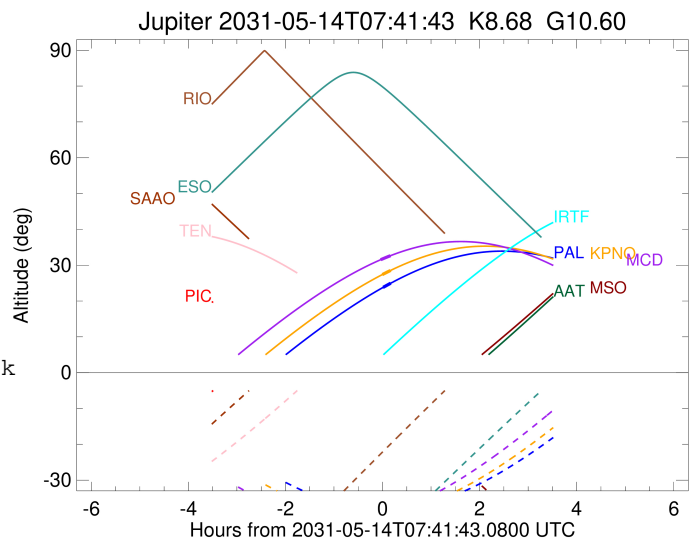
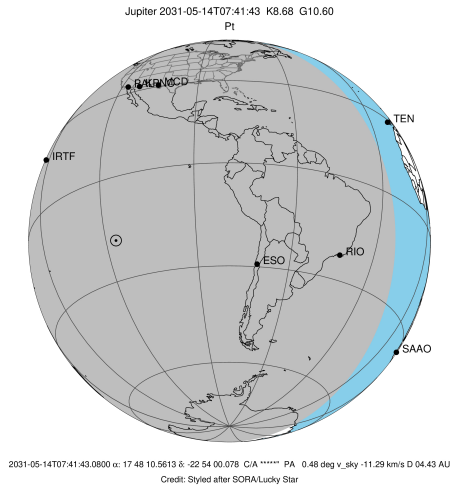
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	MAY 14 07:42 - MAY 14 07:51	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	MAY 14 07:41 - MAY 14 07:51	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	MAY 14 07:39 - MAY 14 07:51	Pie
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			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             : 2031-05-14T07:47:10.240
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: Not a ringed target
Observer code         : PAL
Location              : Palomar Mt (200")
Latitude (deg)        : 33.35622
E. Longitude (deg)    : 243.13601
Altitude (km)         : 1.706
Gaia source ID        : 4068886750245047424
2Mass ID (if available) : 17481056-2253594
ICRS Star Coord at Epoch: 17h 48m 10.56129s -22:54:00.07815s
RUWE (>1.4 is poor) : 0.71
K magnitude           : 8.676
G magnitude           : 10.600
RP magnitude          : 9.948
BP magnitude          : 11.072
DUPflag              : 0
Distance (au)         : 4.426
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -11.29
Sun-Target sep (deg)  : 145.63
Sun-Moon sep (deg)   : 63.00
B (ring opening deg) : -2.60
PA of pole (deg)     : 0.44
Pole direction: RA (deg): 268.05695
Dec (deg): 64.49651
C/A sky separation (") : 22.243
C/A sky separation (km) : 71407.7
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
    
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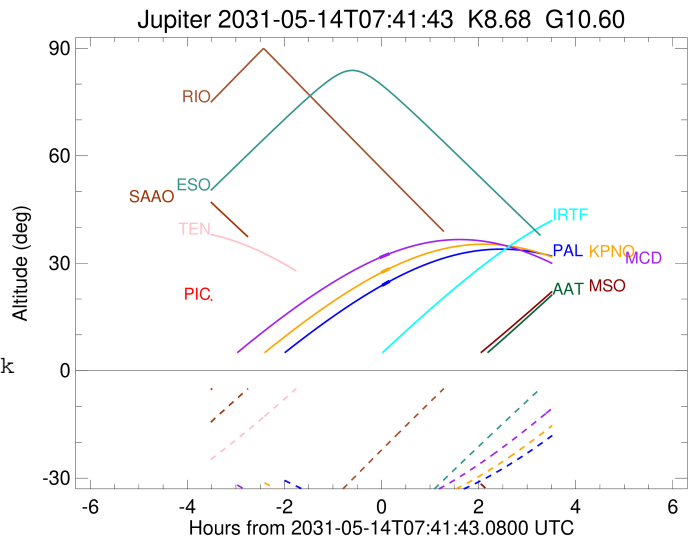
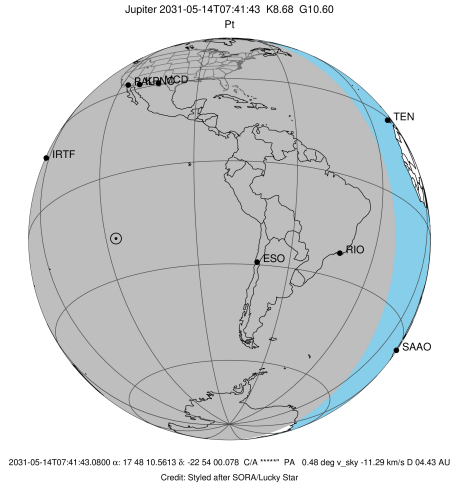


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-05-14T07:42:28.631	23.80	-38.21	71482.7	-86.58	-86.98
Jupiter	E	2031-05-14T07:51:51.719	24.97	-38.18	71482.8	-86.01	-86.48

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-05-14T07:46:33.240
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: Not a ringed target
Observer code         : KPNO
Location              : Kitt Peak Natl Obs
Latitude (deg)        : 31.96333
E. Longitude (deg)   : 248.40000
Altitude (km)         : 2.120
Gaia source ID       : 4068886750245047424
2Mass ID (if available) : 17481056-2253594
ICRS Star Coord at Epoch: 17h 48m 10.56129s -22:54:00.07814s
RUWE (>1.4 is poor) : 0.71
K magnitude           : 8.676
G magnitude           : 10.600
RP magnitude          : 9.948
BP magnitude          : 11.072
DUPflag              : 0
Distance (au)         : 4.426
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -11.29
Sun-Target sep (deg) : 145.63
Sun-Moon sep (deg)   : 63.03
B (ring opening deg) : -2.60
PA of pole (deg)     : 0.44
Pole direction: RA (deg): 268.05695
Dec (deg): 64.49651
C/A sky separation ("): 22.240
C/A sky separation (km): 71395.7
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
    
```

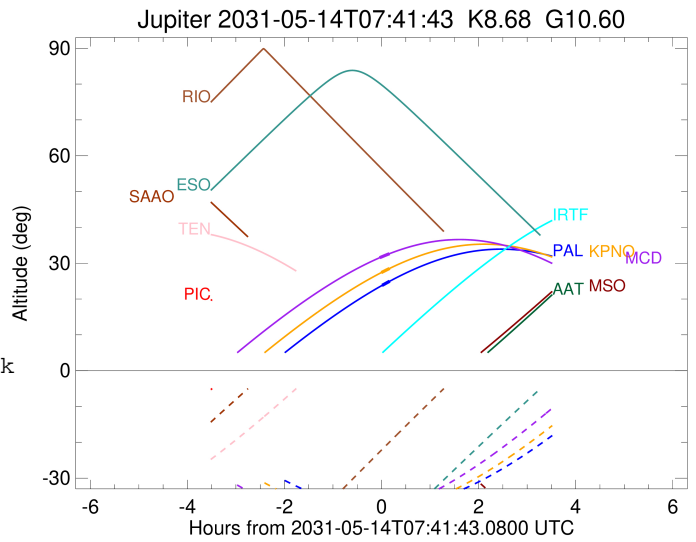
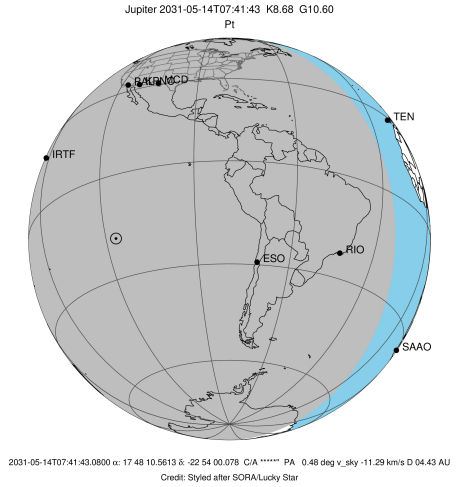


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-05-14T07:41:30.719	27.38	-39.40	71482.7	-86.41	-86.83
Jupiter	E	2031-05-14T07:51:35.628	28.52	-39.13	71482.8	-85.90	-86.38

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-05-14T07:45:32.120
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: Not a ringed target
Observer code         : MCD
Location              : McDonald Obs. 2.7m
Latitude (deg)        : 30.67158
E. Longitude (deg)    : 255.97844
Altitude (km)         : 2.075
Gaia source ID        : 4068886750245047424
2Mass ID (if available) : 17481056-2253594
ICRS Star Coord at Epoch: 17h 48m 10.56129s -22:54:00.07814s
RUWE (>1.4 is poor) : 0.71
K magnitude           : 8.676
G magnitude           : 10.600
RP magnitude          : 9.948
BP magnitude          : 11.072
DUPflag              : 0
Distance (au)         : 4.426
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -11.29
Sun-Target sep (deg)  : 145.63
Sun-Moon sep (deg)    : 63.04
B (ring opening deg) : -2.60
PA of pole (deg)      : 0.44
Pole direction: RA (deg): 268.05695
Dec (deg): 64.49651
C/A sky separation (") : 22.227
C/A sky separation (km) : 71356.2
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	2031-05-14T07:39:28.259	31.53	-39.61	71482.8	-85.92	-86.41
Jupiter	E	2031-05-14T07:51:35.831	32.65	-38.87	71482.8	-85.50	-86.03