

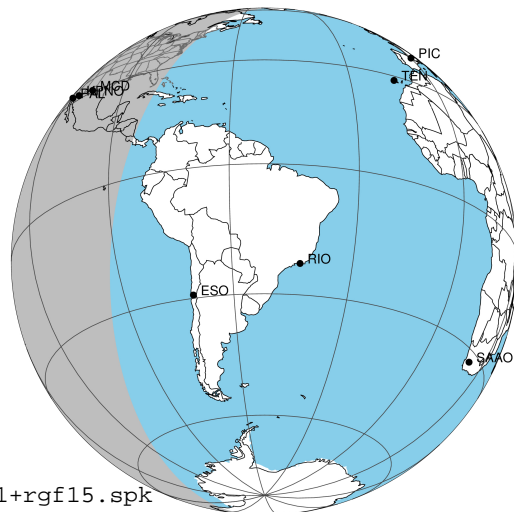
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-02-03T11:59:10.530
 Event type : Pt
 : Jupiter occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4114742054460545152
 2Mass ID (if available) : 17232612-2237549

Jupiter 2031-02-03T11:59:10 K9.15 G14.15 Pt

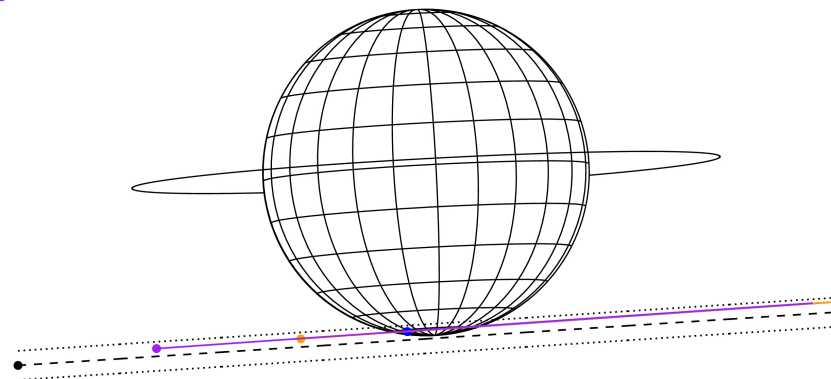
ICRS Star Coord at Epoch: 17h 23m 26.11836s -22:37:55.17592s

RUWE (>1.4 is poor) : 1.06
 K magnitude : 9.149
 G magnitude : 14.152
 RP magnitude : 12.849
 BP magnitude : 16.118
 DUPflag : 0
 Distance (au) : 5.867
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 31.30
 Sun-Target sep (deg) : 52.45
 Sun-Moon sep (deg) : 172.02
 B (ring opening deg) : -2.69
 PA of pole (deg) : 3.10
 Pole direction: RA (deg): 268.05703
 Dec (deg): 64.49651
 C/A sky separation (") : 17.092
 C/A sky separation (km) : 72724.0
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-02-03T11:59:10 K9.15 G14.15 Pt



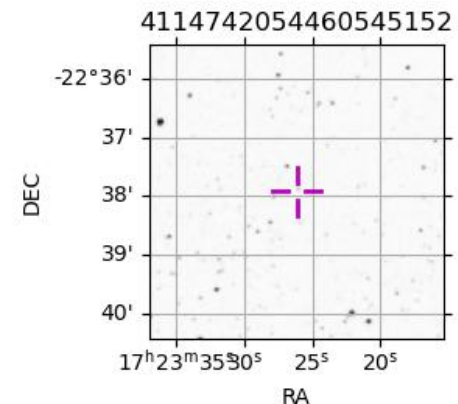
Earth
 PAL
 KPNO
 MCD



2031-02-03T11:59:10.5300 α: 17 23 26.1184 δ: -22 37 55.176 C/A ***** PA 3.72 deg v_sky +31.30 km/s D 05.87 AU
 Credit: Styled after SORA/Lucky Star

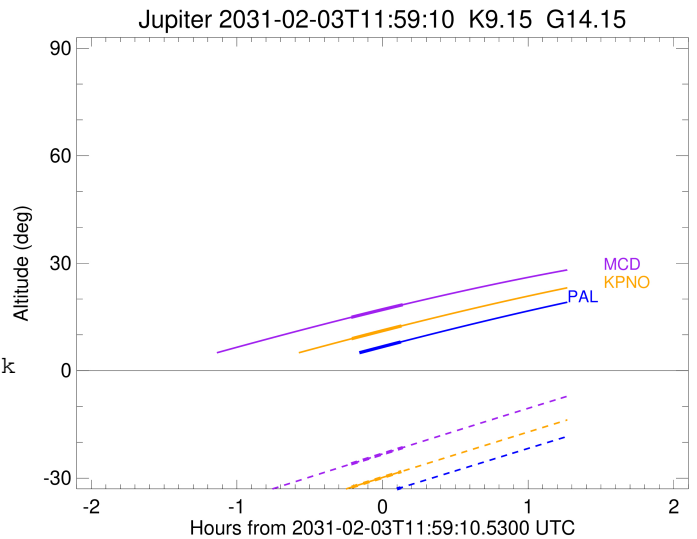
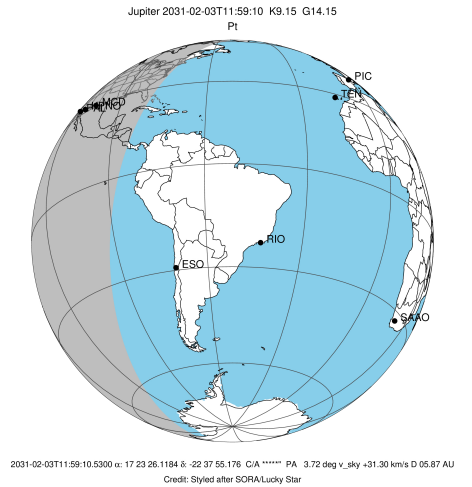
Observable events with sun below -5 deg and altitude above 5 deg

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	+	FEB 03 12:06 - FEB 03 12:06	Pne
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	FEB 03 11:46 - FEB 03 12:06	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	FEB 03 11:46 - FEB 03 12:07	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            : 2031-02-03T11:56:37.990
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       : 4114742054460545152
2Mass ID (if available) : 17232612-2237549
ICRS Star Coord at Epoch: 17h 23m 26.11836s -22:37:55.17592s
RUWE (>1.4 is poor) : 1.06
K magnitude          : 9.149
G magnitude          : 14.152
RP magnitude         : 12.849
BP magnitude         : 16.118
DUPflag             : 0
Distance (au)        : 5.867
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 31.30
Sun-Target sep (deg) : 52.45
Sun-Moon sep (deg)   : 172.59
B (ring opening deg) : -2.69
PA of pole (deg)     : 3.10
Pole direction: RA (deg): 268.05703
Dec (deg): 64.49651
C/A sky separation (") : 16.208
C/A sky separation (km) : 68962.9
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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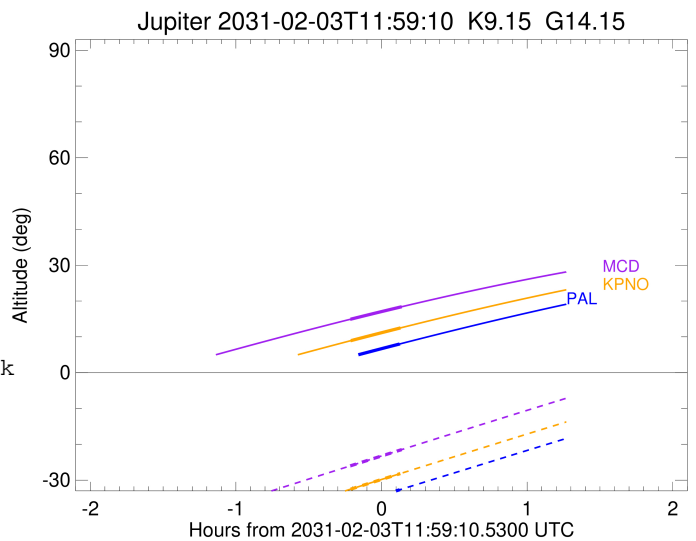
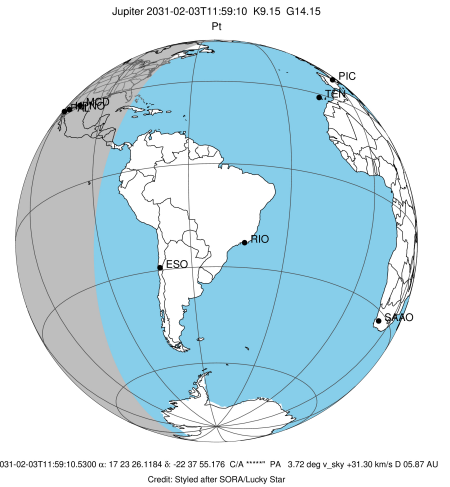


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-03T11:46:34.270	4.45x	-36.89	71482.7	-75.39	-77.07
Jupiter	E	2031-02-03T12:06:42.076	8.01	-32.68	71482.8	-73.63	-75.49

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-03T11:56:42.530
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       : 4114742054460545152
2Mass ID (if available) : 17232612-2237549
ICRS Star Coord at Epoch: 17h 23m 26.11836s -22:37:55.17592s
RUWE (>1.4 is poor) : 1.06
K magnitude           : 9.149
G magnitude           : 14.152
RP magnitude          : 12.849
BP magnitude          : 16.118
DUPflag              : 0
Distance (au)         : 5.867
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 31.30
Sun-Target sep (deg) : 52.45
Sun-Moon sep (deg)   : 172.58
B (ring opening deg) : -2.69
PA of pole (deg)     : 3.10
Pole direction: RA (deg): 268.05703
Dec (deg): 64.49651
C/A sky separation ("): 16.191
C/A sky separation (km): 68888.9
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
    
```

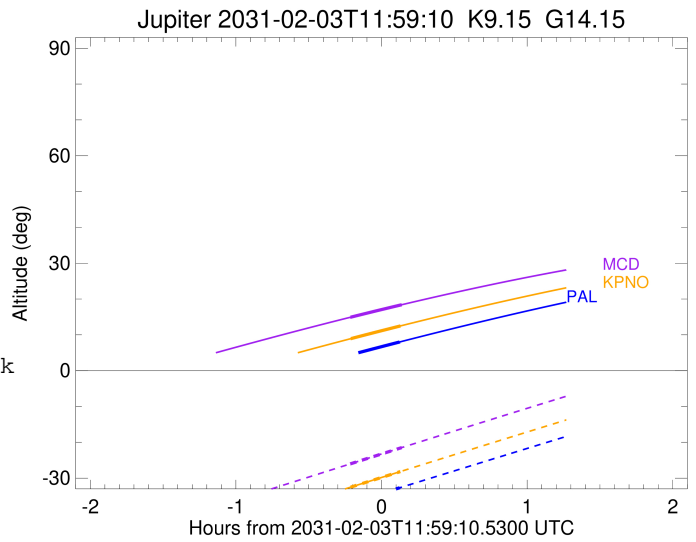
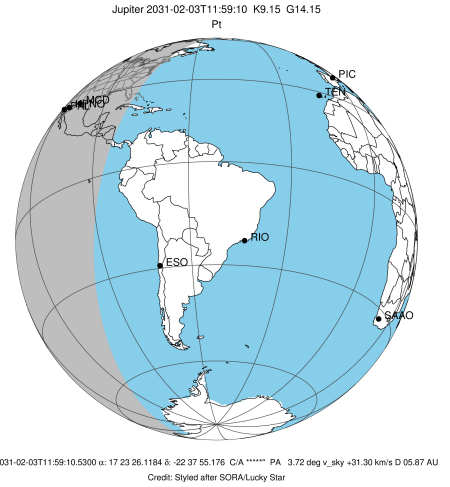


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-03T11:46:29.500	8.93	-32.51	71482.7	-75.17	-76.87
Jupiter	E	2031-02-03T12:06:55.937	12.48	-28.17	71482.9	-73.41	-75.29

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-03T11:56:52.590
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       : 4114742054460545152
2Mass ID (if available) : 17232612-2237549
ICRS Star Coord at Epoch: 17h 23m 26.11836s -22:37:55.17592s
RUWE (>1.4 is poor) : 1.06
K magnitude           : 9.149
G magnitude           : 14.152
RP magnitude         : 12.849
BP magnitude         : 16.118
DUPflag              : 0
Distance (au)        : 5.867
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 31.30
Sun-Target sep (deg) : 52.45
Sun-Moon sep (deg)   : 172.54
B (ring opening deg) : -2.69
PA of pole (deg)     : 3.10
Pole direction: RA (deg): 268.05703
Dec (deg): 64.49651
C/A sky separation ("): 16.154
C/A sky separation (km): 68732.6
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	2031-02-03T11:46:20.760	14.90	-26.01	71482.7	-74.70	-76.45
Jupiter	E	2031-02-03T12:07:24.791	18.39	-21.49	71482.9	-72.97	-74.90