

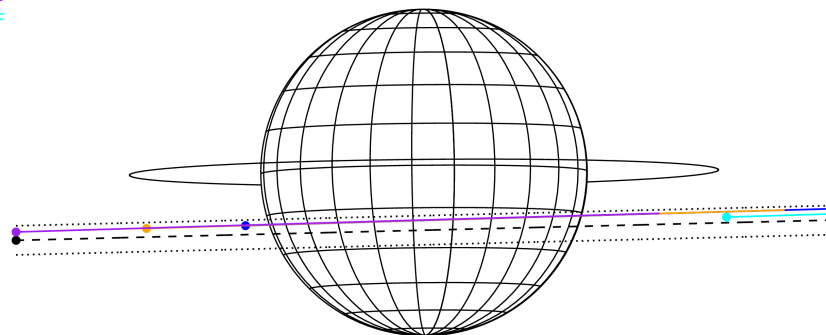
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-02-14T12:19:48.340  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4068932306904290944  
 2Mass ID (if available) : 17472151-2256517

Jupiter 2043-02-14T12:19:48 K9.80 G13.35 Pgt

ICRS Star Coord at Epoch: 17h 47m 21.51156s -22:56:51.65351s  
 RUWE (>1.4 is poor) : 0.81  
 K magnitude : 9.798  
 G magnitude : 13.354  
 RP magnitude : 12.345  
 BP magnitude : 14.399  
 DUPflag : 0  
 Distance (au) : 5.765  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 28.97  
 Sun-Target sep (deg) : 58.01  
 Sun-Moon sep (deg) : 119.06  
 B (ring opening deg) : -2.55  
 PA of pole (deg) : 0.52  
 Pole direction: RA (deg): 268.05661  
 Dec (deg): 64.49732  
 C/A sky separation (") : 6.045  
 C/A sky separation (km) : 25275.8  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



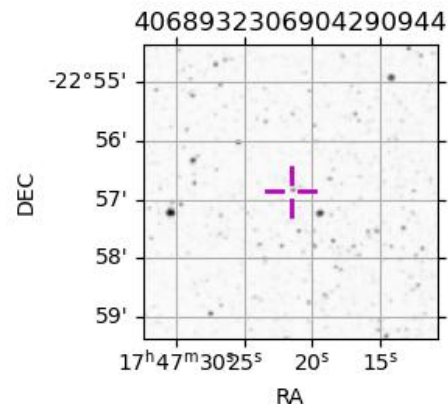
Earth  
 PAL  
 KPNO  
 MCD  
 IRTF



2043-02-14T12:19:48.3400 @: 17 47 21.51156 @: -22 56 51.654 C/A 6.054" PA 1.42 deg v\_sky +28.97 km/s D 05.77 AU  
 Credit: Styled after SORA/Lucky Star

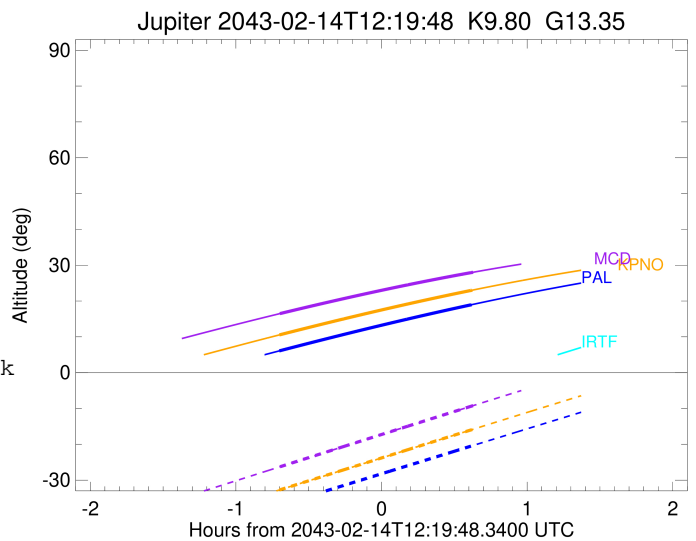
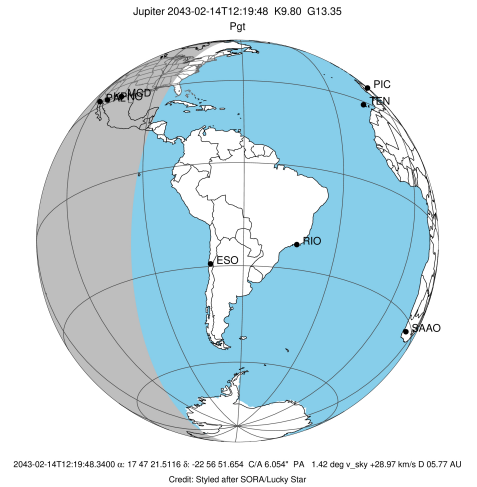
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	FEB 14 11:37 - FEB 14 12:56	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	FEB 14 11:37 - FEB 14 12:57	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	FEB 14 11:37 - FEB 14 12:57	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             : 2043-02-14T12:17:16.650
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: 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        : 4068932306904290944
2Mass ID (if available) : 17472151-2256517
ICRS Star Coord at Epoch: 17h 47m 21.51156s -22:56:51.65351s
RUWE (>1.4 is poor) : 0.81
K magnitude           : 9.798
G magnitude           : 13.354
RP magnitude          : 12.345
BP magnitude          : 14.399
DUPflag              : 0
Distance (au)         : 5.765
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 28.97
Sun-Target sep (deg)  : 58.01
Sun-Moon sep (deg)   : 118.94
B (ring opening deg) : -2.55
PA of pole (deg)     : 0.52
Pole direction: RA (deg): 268.05661
Dec (deg): 64.49732
C/A sky separation (" ) : 5.017
C/A sky separation (km) : 20978.7
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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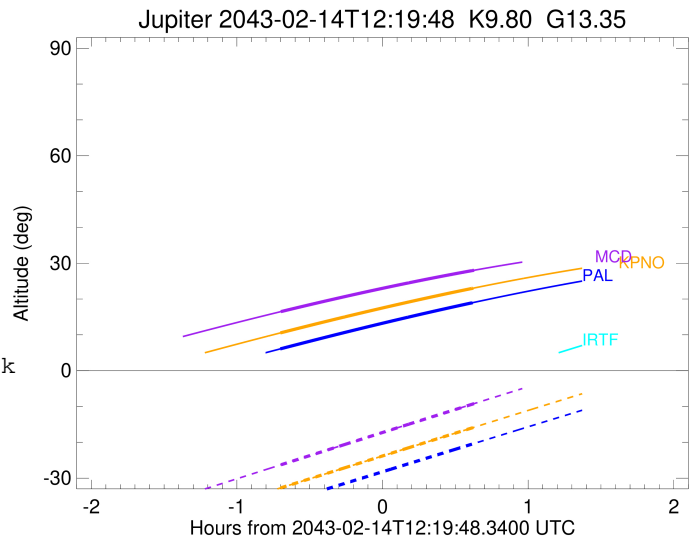
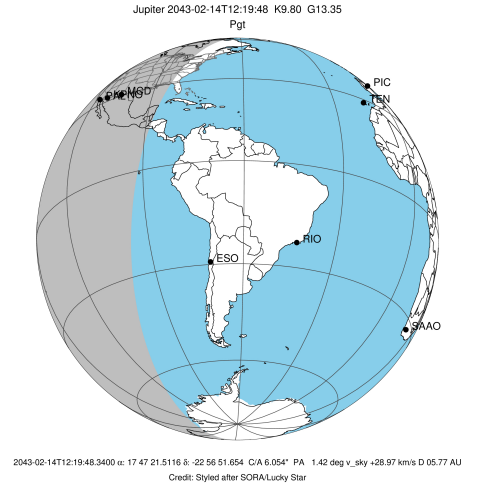


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-14T11:37:42.868	6.08	-36.99	71491.1	-18.21	-20.60
Jupiter	E	2043-02-14T12:56:56.027	18.97	-20.45	71491.3	-15.91	-18.04

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-02-14T12:17:24.480
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: 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        : 4068932306904290944
2Mass ID (if available) : 17472151-2256517
ICRS Star Coord at Epoch: 17h 47m 21.51156s -22:56:51.65351s
RUWE (>1.4 is poor) : 0.81
K magnitude           : 9.798
G magnitude           : 13.354
RP magnitude          : 12.345
BP magnitude          : 14.399
DUPflag              : 0
Distance (au)         : 5.765
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 28.97
Sun-Target sep (deg)  : 58.01
Sun-Moon sep (deg)   : 119.01
B (ring opening deg) : -2.55
PA of pole (deg)     : 0.52
Pole direction: RA (deg): 268.05661
Dec (deg): 64.49732
C/A sky separation (") : 5.003
C/A sky separation (km) : 20919.2
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
    
```

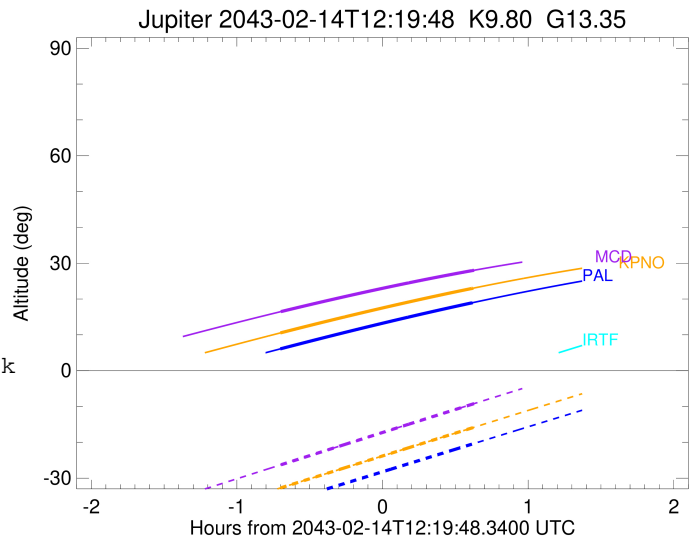
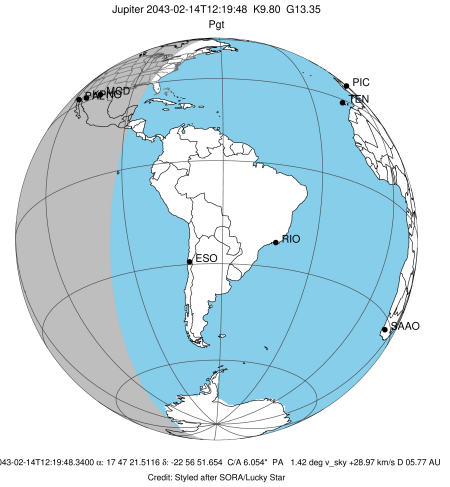


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-14T11:37:47.289	10.55	-32.73	71491.1	-18.15	-20.54
Jupiter	E	2043-02-14T12:57:07.056	23.01	-15.89	71491.3	-15.87	-18.00

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-02-14T12:17:39.510
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: 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       : 4068932306904290944
2Mass ID (if available) : 17472151-2256517
ICRS Star Coord at Epoch: 17h 47m 21.51156s -22:56:51.65351s
RUWE (>1.4 is poor) : 0.81
K magnitude           : 9.798
G magnitude           : 13.354
RP magnitude         : 12.345
BP magnitude         : 14.399
DUPflag              : 0
Distance (au)        : 5.765
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 28.97
Sun-Target sep (deg) : 58.01
Sun-Moon sep (deg)   : 119.13
B (ring opening deg) : -2.55
PA of pole (deg)     : 0.52
Pole direction: RA (deg): 268.05661
Dec (deg): 64.49732
C/A sky separation (") : 4.974
C/A sky separation (km) : 20797.2
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	2043-02-14T11:37:57.330	16.49	-26.27	71491.1	-18.03	-20.40
Jupiter	E	2043-02-14T12:57:26.640	28.01	-9.22	71491.3	-15.80	-17.92