

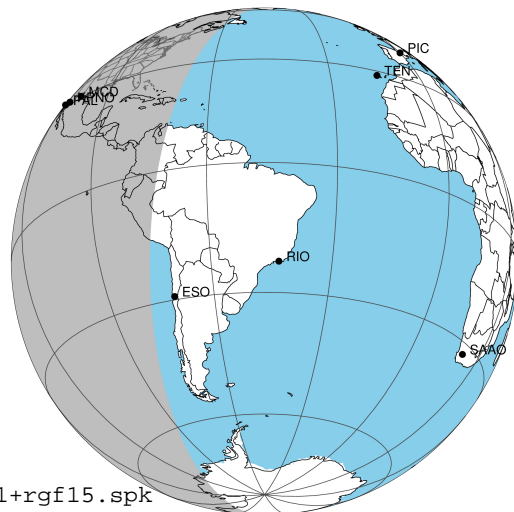
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-02-20T10:59:52.150  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4068712060981913984  
 2Mass ID (if available) : 17513077-2258119

Jupiter 2043-02-20T10:59:52 K9.68 G14.47 Pgt

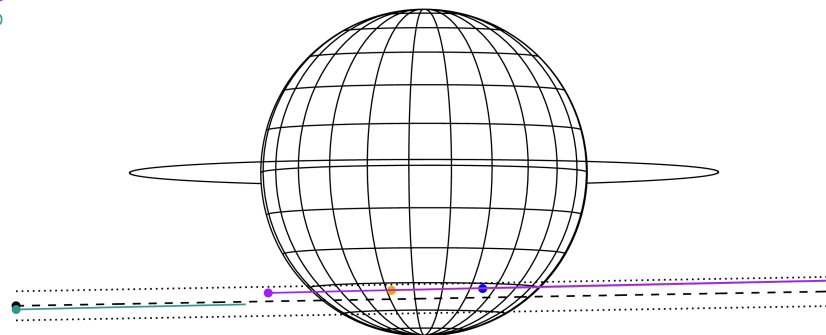
ICRS Star Coord at Epoch: 17h 51m 30.77236s -22:58:11.91949s

RUWE (>1.4 is poor) : 0.93  
 K magnitude : 9.684  
 G magnitude : 14.468  
 RP magnitude : 13.250  
 BP magnitude : 16.108  
 DUPflag : 0  
 Distance (au) : 5.681  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 26.68  
 Sun-Target sep (deg) : 63.05  
 Sun-Moon sep (deg) : 158.22  
 B (ring opening deg) : -2.53  
 PA of pole (deg) : 0.08  
 Pole direction: RA (deg): 268.05662  
 Dec (deg): 64.49732  
 C/A sky separation (") : 13.406  
 C/A sky separation (km) : 55237.1  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2043-02-20T10:59:52 K9.68 G14.47  
 Pgt



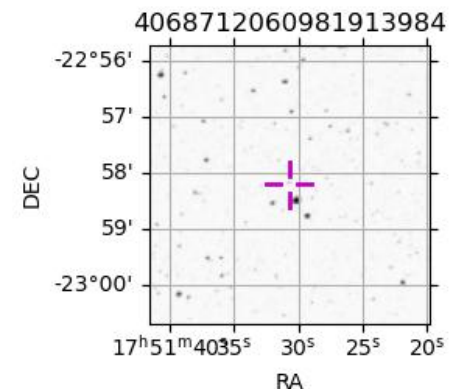
Earth  
 PAL  
 KPNO  
 MCD  
 ESO



2043-02-20T10:59:52.1500 α: 17 51 30.7724 δ: -22 58 11.919 C/A \*\*\*\*\* PA 1.01 deg v\_sky +26.68 km/s D 05.68 AU  
 Credit: Styled after SORA/Lucky Star

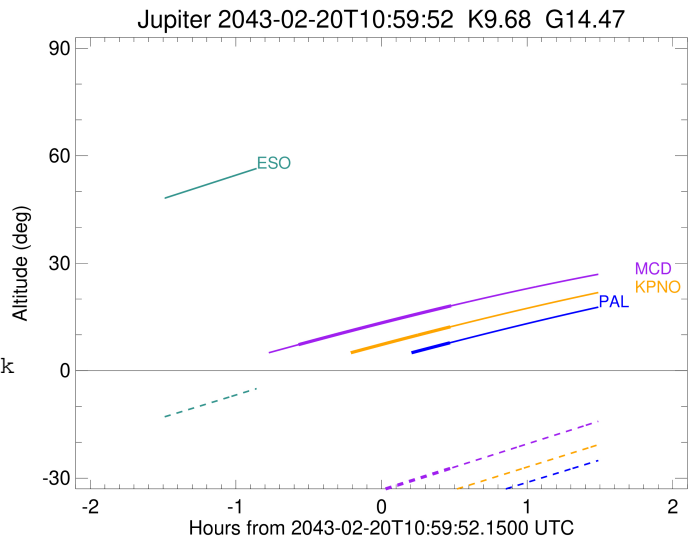
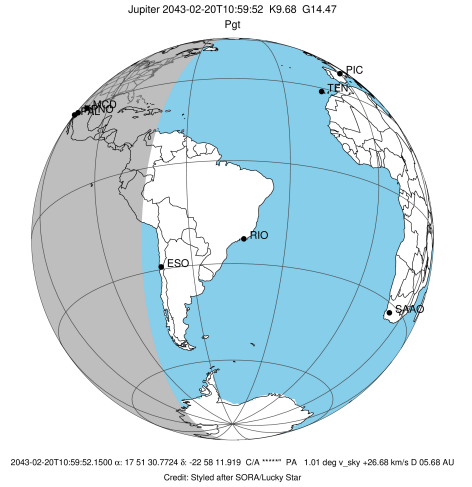
Observable events with sun below -5 deg and altitude above 5 deg

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 20 11:28	- FEB 20 11:28	Pne
PMO	Purple Mtn Obs. Nanking	32.1	118.8				Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	FEB 20 11:28	- FEB 20 11:28	Pne
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	FEB 20 10:25	- FEB 20 11:28	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            : 2043-02-20T10:56:51.870
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      : 4068712060981913984
2Mass ID (if available) : 17513077-2258119
ICRS Star Coord at Epoch: 17h 51m 30.77236s -22:58:11.91949s
RUWE (>1.4 is poor) : 0.93
K magnitude          : 9.684
G magnitude          : 14.468
RP magnitude         : 13.250
BP magnitude         : 16.108
DUPflag             : 0
Distance (au)       : 5.681
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 26.68
Sun-Target sep (deg) : 63.05
Sun-Moon sep (deg)  : 159.06
B (ring opening deg) : -2.53
PA of pole (deg)    : 0.08
Pole direction: RA (deg): 268.05662
Dec (deg): 64.49732
C/A sky separation (" ) : 12.478
C/A sky separation (km) : 51410.9
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
    
```

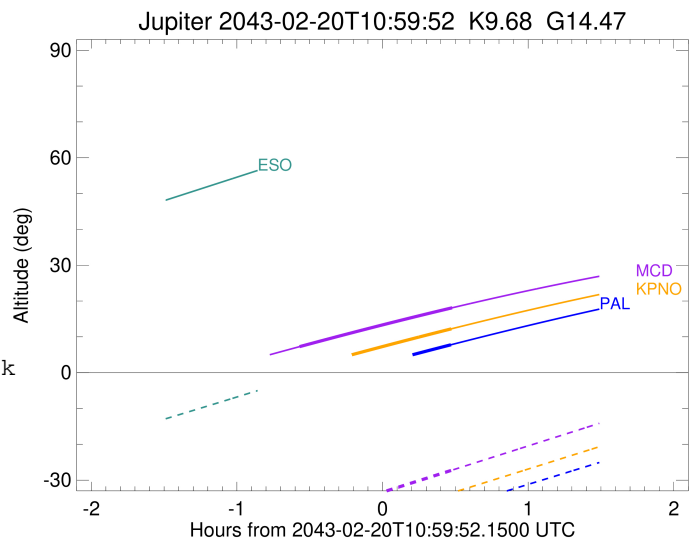
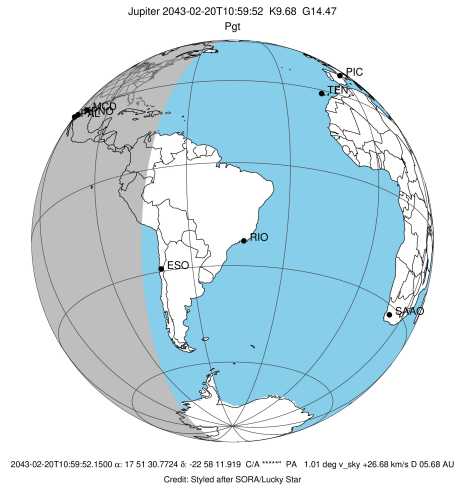


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-20T10:25:43.571	-3.58x	-50.07	71487.3	-47.18	-50.84
Jupiter	E	2043-02-20T11:28:04.362	7.79	-37.74	71487.6	-44.69	-48.39

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-02-20T10:56:55.620
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       : 4068712060981913984
2Mass ID (if available) : 17513077-2258119
ICRS Star Coord at Epoch: 17h 51m 30.77236s -22:58:11.91949s
RUWE (>1.4 is poor) : 0.93
K magnitude           : 9.684
G magnitude           : 14.468
RP magnitude          : 13.250
BP magnitude          : 16.108
DUPflag              : 0
Distance (au)        : 5.681
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 26.68
Sun-Target sep (deg) : 63.05
Sun-Moon sep (deg)  : 159.08
B (ring opening deg) : -2.53
PA of pole (deg)    : 0.08
Pole direction: RA (deg): 268.05662
Dec (deg): 64.49732
C/A sky separation (") : 12.460
C/A sky separation (km) : 51337.4
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
    
```

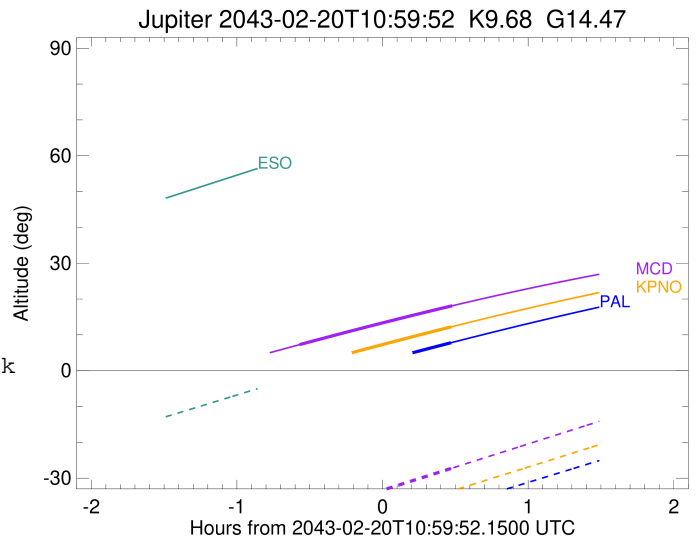
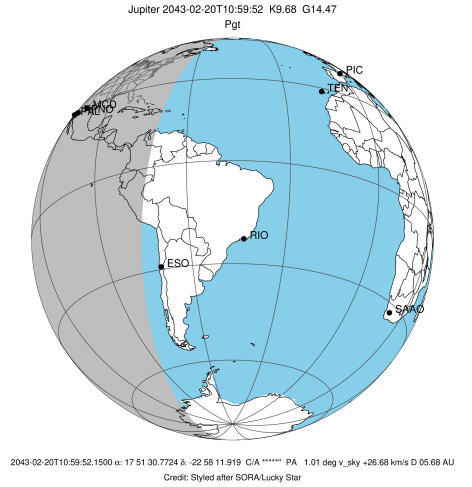


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-20T10:25:41.980	1.01x	-46.50	71487.3	-47.09	-50.76
Jupiter	E	2043-02-20T11:28:13.405	12.23	-33.60	71487.7	-44.61	-48.32

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-02-20T10:57:05.400
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        : 4068712060981913984
2Mass ID (if available) : 17513077-2258119
ICRS Star Coord at Epoch: 17h 51m 30.77236s -22:58:11.91949s
RUWE (>1.4 is poor)  : 0.93
K magnitude           : 9.684
G magnitude           : 14.468
RP magnitude          : 13.250
BP magnitude          : 16.108
DUPflag              : 0
Distance (au)         : 5.681
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 26.68
Sun-Target sep (deg)  : 63.05
Sun-Moon sep (deg)    : 159.08
B (ring opening deg)  : -2.53
PA of pole (deg)      : 0.08
Pole direction: RA (deg): 268.05662
Dec (deg): 64.49732
C/A sky separation (") : 12.422
C/A sky separation (km) : 51183.3
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
    
```



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	2043-02-20T10:25:42.312	7.27	-40.61	71487.3	-46.90	-50.57
Jupiter	E	2043-02-20T11:28:32.487	18.10	-27.21	71487.7	-44.45	-48.16