

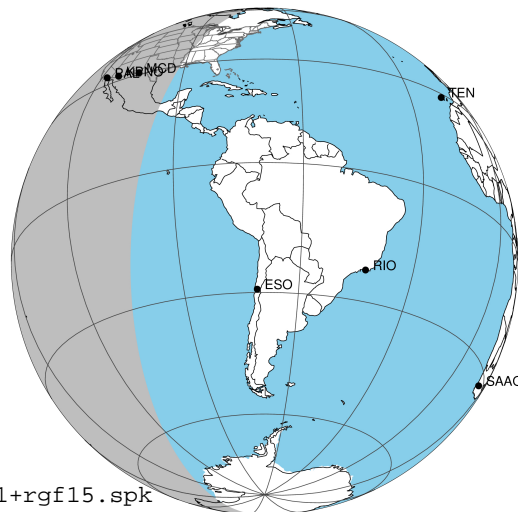
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-02-14T12:47:29.120
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068932105116481152
 2Mass ID (if available) : 17472233-2257024

Jupiter 2043-02-14T12:47:29 K9.30 G14.48 Pgt

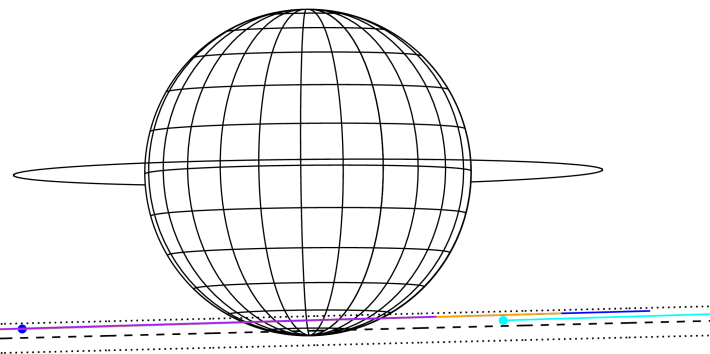
ICRS Star Coord at Epoch: 17h 47m 22.32531s -22:57:02.47645s

RUWE (>1.4 is poor) : 1.01
 K magnitude : 9.299
 G magnitude : 14.480
 RP magnitude : 13.118
 BP magnitude : 16.540
 DUPflag : 0
 Distance (au) : 5.765
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 28.96
 Sun-Target sep (deg) : 58.02
 Sun-Moon sep (deg) : 119.33
 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 (") : 16.586
 C/A sky separation (km) : 69349.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-02-14T12:47:29 K9.30 G14.48
 Pgt



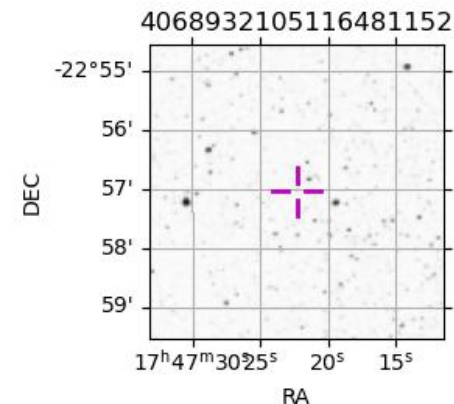
Earth
 PAL
 KPNO
 MCD
 IRTF



2043-02-14T12:47:29.1200 α: 17 47 22.3253 δ: -22 57 02.476 C/A ***** PA 1.42 deg v_sky +28.96 km/s D 05.76 AU
 Credit: Styled after SORA/Lucky Star

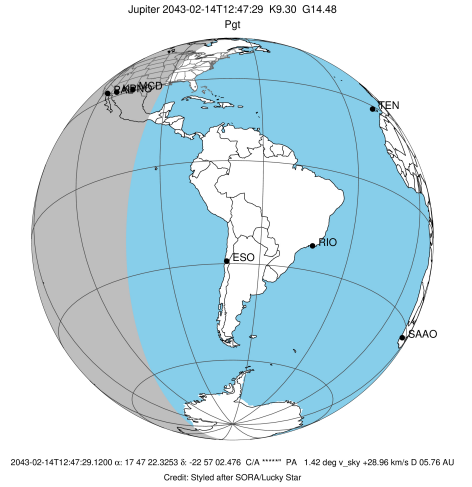
Observable events with sun below -5 deg and altitude above 5 deg

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 14 12:27 - FEB 14 13:02	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	FEB 14 12:27 - FEB 14 13:02	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	FEB 14 12:28 - FEB 14 13:03	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

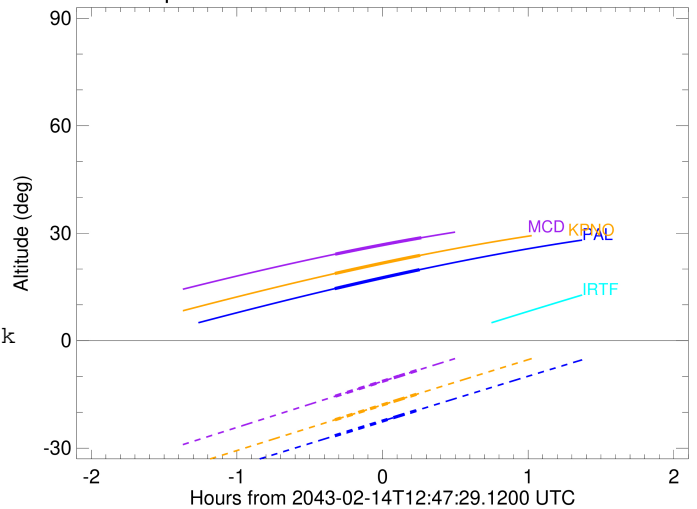


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-02-14T12:45:17.110
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PAL
Location              : Palomar Mt (200")
Latitude (deg)        : 33.35622
E. Longitude (deg)    : 243.13601
Altitude (km)         : 1.706
Gaia source ID        : 4068932105116481152
2Mass ID (if available) : 17472233-2257024
ICRS Star Coord at Epoch: 17h 47m 22.32531s -22:57:02.47645s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 9.299
G magnitude           : 14.480
RP magnitude          : 13.118
BP magnitude          : 16.540
DUPflag              : 0
Distance (au)         : 5.765
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 28.96
Sun-Target sep (deg)  : 58.02
Sun-Moon sep (deg)   : 119.30
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 (") : 15.509
C/A sky separation (km) : 64843.2
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
    
```



Jupiter 2043-02-14T12:47:29 K9.30 G14.48

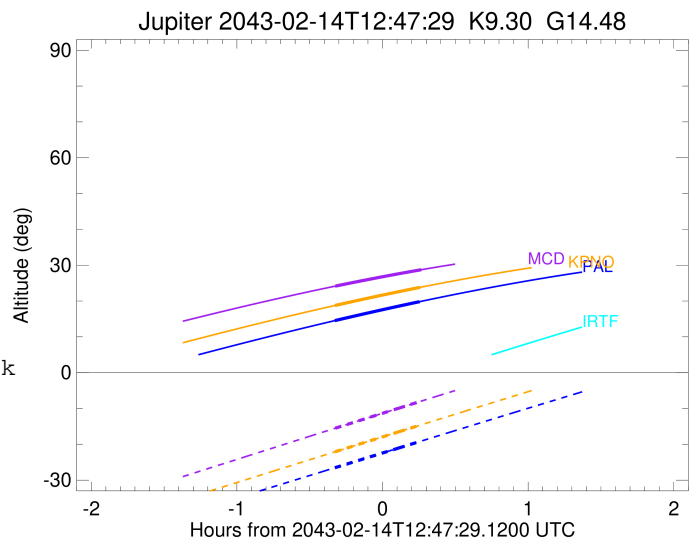
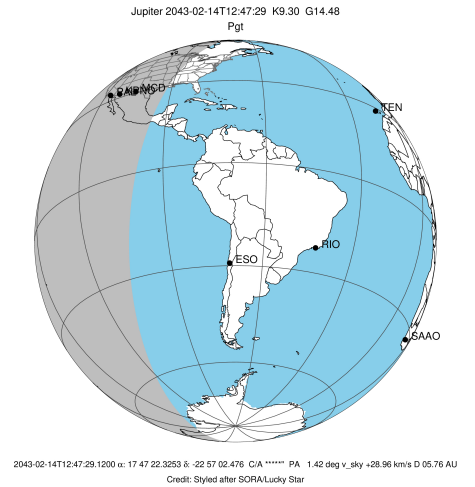


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-14T12:27:49.811	14.53	-26.54	71484.6	-66.12	-68.70
Jupiter	E	2043-02-14T13:02:45.429	19.81	-19.23	71484.8	-63.86	-66.63

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-02-14T12:45:26.360
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        : 4068932105116481152
2Mass ID (if available) : 17472233-2257024
ICRS Star Coord at Epoch: 17h 47m 22.32531s -22:57:02.47645s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 9.299
G magnitude           : 14.480
RP magnitude          : 13.118
BP magnitude          : 16.540
DUPflag              : 0
Distance (au)         : 5.765
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 28.96
Sun-Target sep (deg) : 58.02
Sun-Moon sep (deg)   : 119.37
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 (" ) : 15.497
C/A sky separation (km) : 64794.8
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
    
```

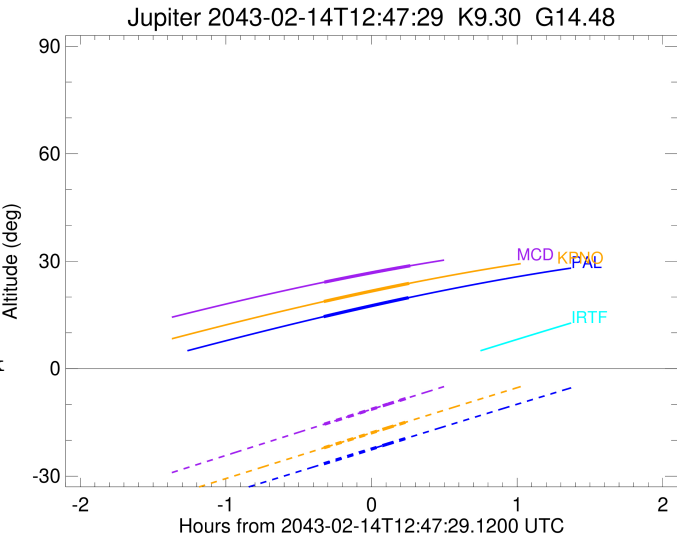


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-14T12:27:54.334	18.75	-22.08	71484.6	-66.02	-68.60
Jupiter	E	2043-02-14T13:02:59.367	23.81	-14.65	71484.8	-63.79	-66.56

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-02-14T12:45:42.980
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       : 4068932105116481152
2Mass ID (if available) : 17472233-2257024
ICRS Star Coord at Epoch: 17h 47m 22.32531s -22:57:02.47645s
RUWE (>1.4 is poor) : 1.01
K magnitude          : 9.299
G magnitude          : 14.480
RP magnitude         : 13.118
BP magnitude         : 16.540
DUPflag             : 0
Distance (au)        : 5.765
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 28.96
Sun-Target sep (deg) : 58.02
Sun-Moon sep (deg)   : 119.48
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 (") : 15.473
C/A sky separation (km) : 64694.2
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	2043-02-14T12:28:02.046	24.15	-15.50	71484.6	-65.80	-68.41
Jupiter	E	2043-02-14T13:03:24.802	28.73	-7.95	71484.8	-63.63	-66.41