

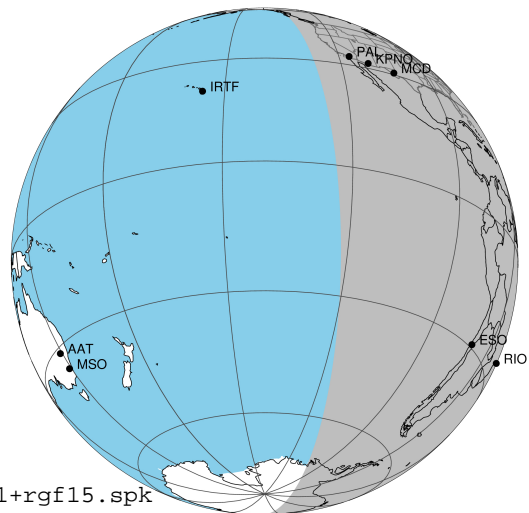
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-10-08T02:02:42.660
 Event type : Pt
 : Jupiter occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4068805008463237248
 2Mass ID (if available) : 17450328-2319215

Jupiter 2043-10-08T02:02:42 K8.34 G14.41 Pt

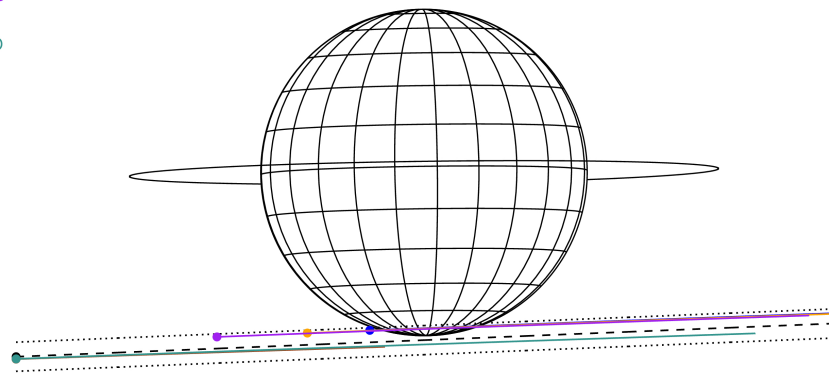
ICRS Star Coord at Epoch: 17h 45m 03.28072s -23:19:22.16951s

RUWE (>1.4 is poor) : 0.92
 K magnitude : 8.341
 G magnitude : 14.413
 RP magnitude : 12.899
 BP magnitude : 17.554
 DUPflag : 0
 Distance (au) : 5.441
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 22.11
 Sun-Target sep (deg) : 72.48
 Sun-Moon sep (deg) : 18.37
 B (ring opening deg) : -2.17
 PA of pole (deg) : 0.77
 Pole direction: RA (deg): 268.05674
 Dec (deg): 64.49731
 C/A sky separation (") : 18.593
 C/A sky separation (km) : 73373.5
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-10-08T02:02:42 K8.34 G14.41 Pt



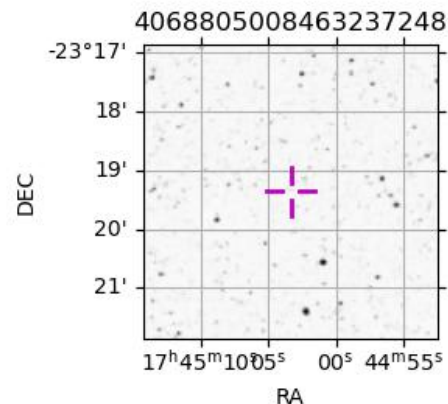
Earth
 PAL
 KPNO
 MCD
 RIO
 ESO



2043-10-08T02:02:42.6600 α: 17 45 03.2807 δ: -23 19 22.170 C/A ***** PA 2.33 deg v_sky +22.11 km/s D 05.44 AU
 Credit: Styled after SORA/Lucky Star

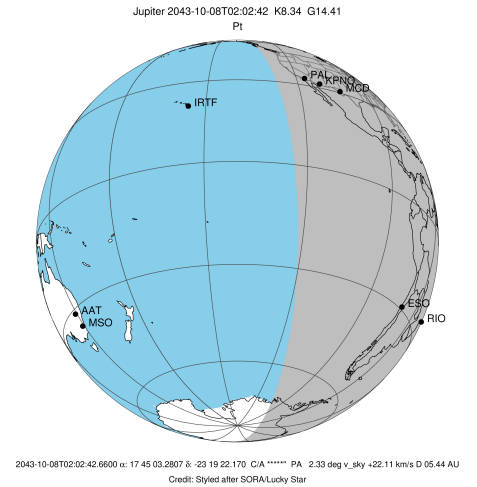
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	OCT 08 01:47 - OCT 08 02:20	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	OCT 08 01:48 - OCT 08 02:20	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	OCT 08 01:49 - OCT 08 02:20	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

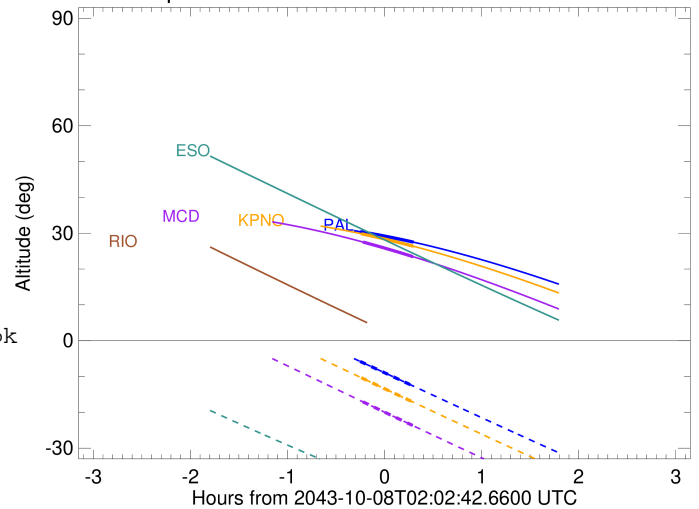


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-10-08T02:04:04.810
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: Not a ringed target
Observer code         : PAL
Location              : Palomar Mt (200")
Latitude (deg)        : 33.35622
E. Longitude (deg)    : 243.13601
Altitude (km)         : 1.706
Gaia source ID        : 4068805008463237248
2Mass ID (if available) : 17450328-2319215
ICRS Star Coord at Epoch: 17h 45m 03.28072s -23:19:22.16951s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 8.341
G magnitude           : 14.413
RP magnitude          : 12.899
BP magnitude          : 17.554
DUPflag              : 0
Distance (au)         : 5.441
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 22.11
Sun-Target sep (deg)  : 72.48
Sun-Moon sep (deg)    : 18.98
B (ring opening deg) : -2.17
PA of pole (deg)      : 0.77
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (" ) : 17.273
C/A sky separation (km) : 68164.1
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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Jupiter 2043-10-08T02:02:42 K8.34 G14.41

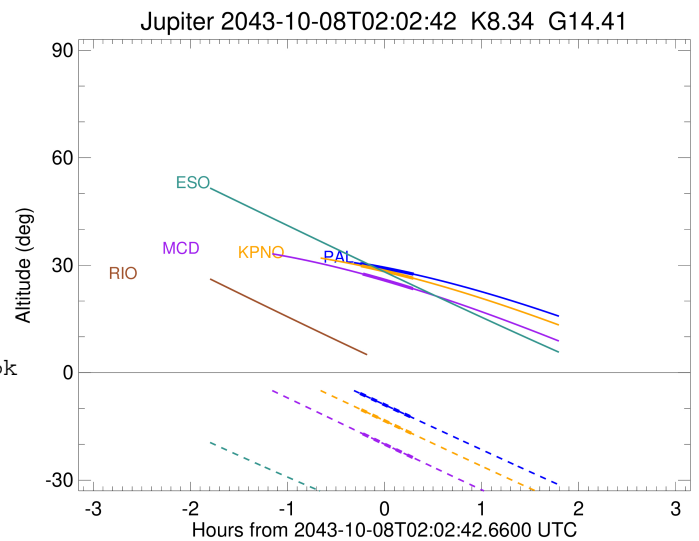
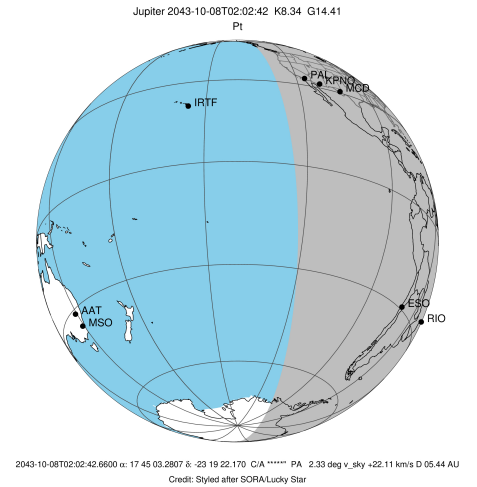


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-08T01:47:35.060	30.44	-5.78	71486.0	-73.76	-75.61
Jupiter	E	2043-10-08T02:20:33.851	27.50	-12.69	71486.2	-70.93	-73.06

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-08T02:04:25.010
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      : 4068805008463237248
2Mass ID (if available) : 17450328-2319215
ICRS Star Coord at Epoch: 17h 45m 03.28072s -23:19:22.16951s
RUWE (>1.4 is poor) : 0.92
K magnitude         : 8.341
G magnitude         : 14.413
RP magnitude        : 12.899
BP magnitude        : 17.554
DUPflag            : 0
Distance (au)       : 5.441
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 22.11
Sun-Target sep (deg) : 72.48
Sun-Moon sep (deg)  : 19.03
B (ring opening deg) : -2.17
PA of pole (deg)    : 0.77
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (" ) : 17.314
C/A sky separation (km) : 68325.0
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
    
```

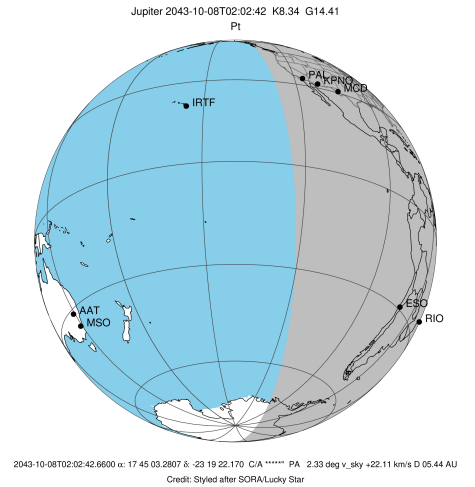


x: target alt < 5.0 deg or sun > -5.0 deg

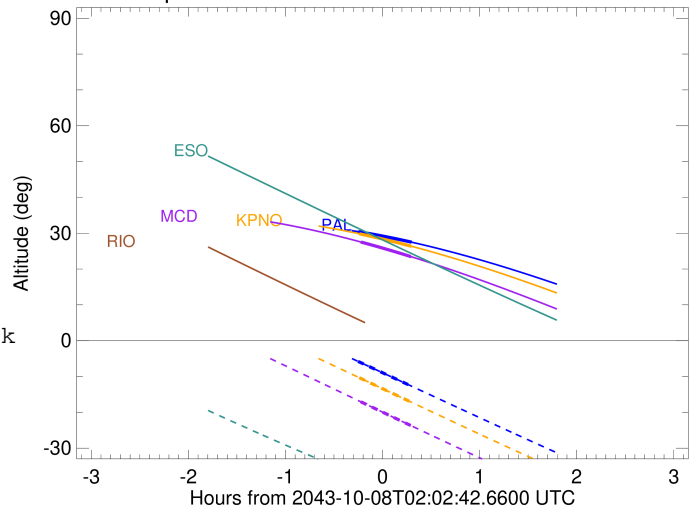
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-08T01:48:19.381	29.84	-10.33	71486.0	-74.15	-75.96
Jupiter	E	2043-10-08T02:20:29.865	26.36	-17.17	71486.2	-71.40	-73.49

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-08T02:04:52.140
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       : 4068805008463237248
2Mass ID (if available) : 17450328-2319215
ICRS Star Coord at Epoch: 17h 45m 03.28072s -23:19:22.16951s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 8.341
G magnitude           : 14.413
RP magnitude         : 12.899
BP magnitude         : 17.554
DUPflag             : 0
Distance (au)        : 5.441
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.11
Sun-Target sep (deg) : 72.48
Sun-Moon sep (deg)   : 19.09
B (ring opening deg) : -2.17
PA of pole (deg)     : 0.77
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation ("): 17.370
C/A sky separation (km): 68547.4
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
    
```



Jupiter 2043-10-08T02:02:42 K8.34 G14.41



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	2043-10-08T01:49:21.292	27.54	-17.07	71486.0	-74.71	-76.46
Jupiter	E	2043-10-08T02:20:22.121	23.45	-23.72	71486.2	-72.06	-74.08