

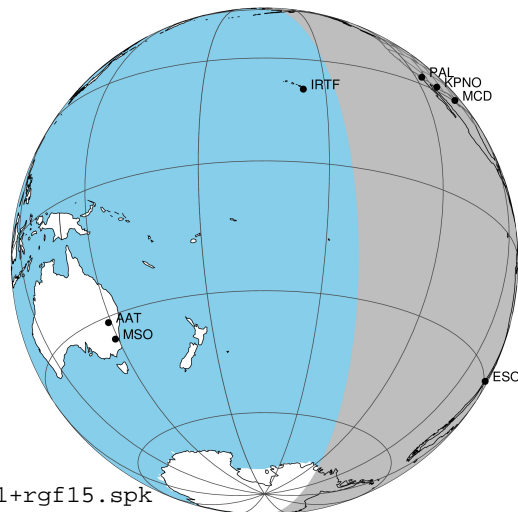
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-10-13T03:23:35.010  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4068766662981221120  
 2Mass ID (if available) : 17480807-2320406

Jupiter 2043-10-13T03:23:35 K8.69 G10.21 Pgt

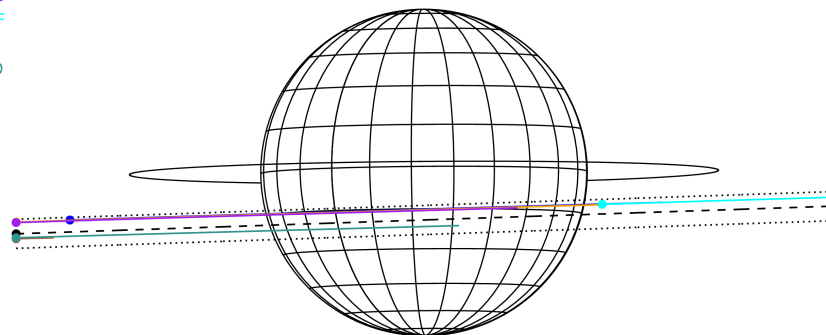
ICRS Star Coord at Epoch: 17h 48m 08.20658s -23:20:43.66816s

RUWE (>1.4 is poor) : 1.07  
 K magnitude : 8.693  
 G magnitude : 10.206  
 RP magnitude : 9.692  
 BP magnitude : 10.542  
 DUPflag : 0  
 Distance (au) : 5.514  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 24.23  
 Sun-Target sep (deg) : 68.19  
 Sun-Moon sep (deg) : 43.12  
 B (ring opening deg) : -2.15  
 PA of pole (deg) : 0.44  
 Pole direction: RA (deg): 268.05675  
 Dec (deg): 64.49731  
 C/A sky separation (") : 5.199  
 C/A sky separation (km) : 20791.6  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2043-10-13T03:23:35 K8.69 G10.21  
 Pgt



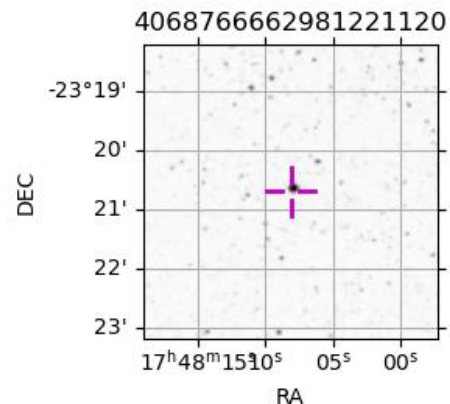
Earth  
 PAL  
 KPNO  
 MCD  
 IRTF  
 RIO  
 ESO



2043-10-13T03:23:35.0100 α: 17 48 08.2066 δ: -23 20 43.668 C/A 5.2077 PA 1.94 deg v\_sky +24.23 km/s D 05.51 AU  
 Credit: Styled after SORA/Lucky Star

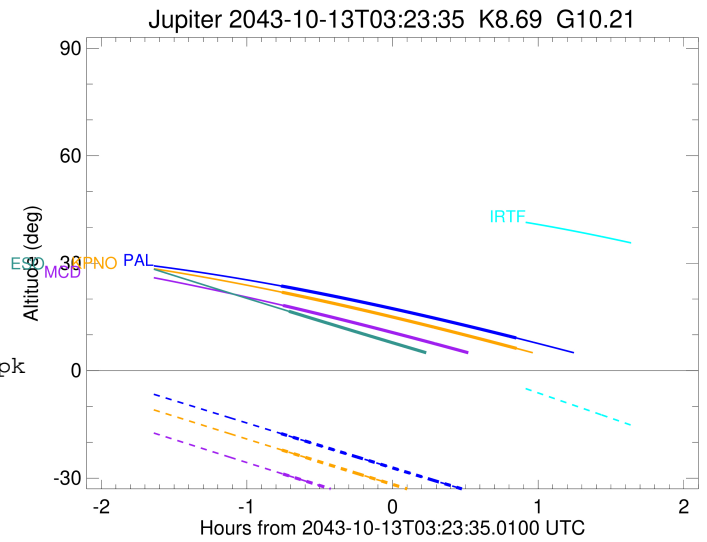
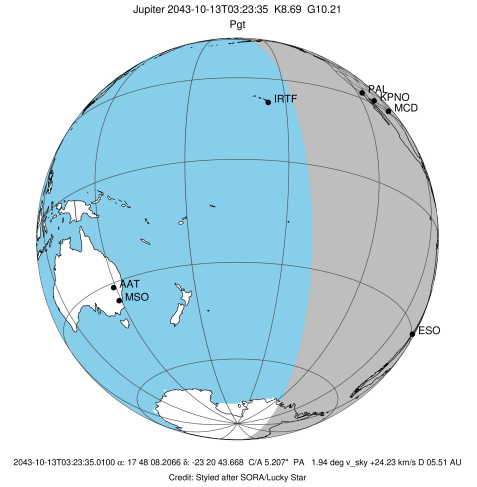
Observable events with sun below -5 deg and altitude above 5 deg

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 13 02:37 - OCT 13 04:14	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	OCT 13 02:38 - OCT 13 04:14	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+	OCT 13 02:38 - OCT 13 02:38	Pin
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	+	OCT 13 02:40 - OCT 13 02:40	Pin
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             : 2043-10-13T03:26:11.570
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        : 4068766662981221120
2Mass ID (if available) : 17480807-2320406
ICRS Star Coord at Epoch: 17h 48m 08.20658s -23:20:43.66816s
RUWE (>1.4 is poor) : 1.07
K magnitude           : 8.693
G magnitude           : 10.206
RP magnitude          : 9.692
BP magnitude          : 10.542
DUPflag              : 0
Distance (au)         : 5.514
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 24.23
Sun-Target sep (deg)  : 68.19
Sun-Moon sep (deg)   : 42.95
B (ring opening deg) : -2.15
PA of pole (deg)     : 0.44
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation (") : 4.020
C/A sky separation (km) : 16076.3
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
    
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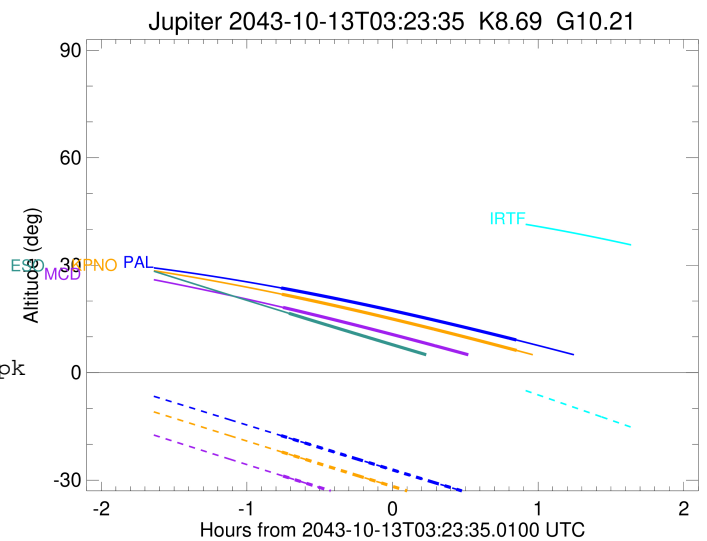
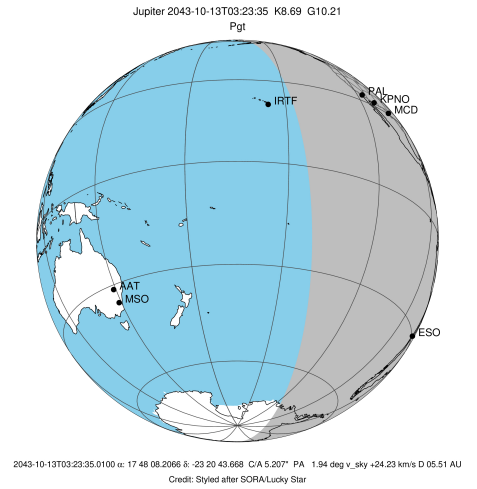


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-13T02:37:40.893	23.65	-17.56	71491.6	-14.25	-16.19
Jupiter	E	2043-10-13T04:14:32.994	9.14	-37.51	71491.7	-11.78	-13.40

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-13T03:26:27.110
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       : 4068766662981221120
2Mass ID (if available) : 17480807-2320406
ICRS Star Coord at Epoch: 17h 48m 08.20658s -23:20:43.66816s
RUWE (>1.4 is poor) : 1.07
K magnitude           : 8.693
G magnitude           : 10.206
RP magnitude          : 9.692
BP magnitude          : 10.542
DUPflag              : 0
Distance (au)        : 5.514
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 24.23
Sun-Target sep (deg) : 68.19
Sun-Moon sep (deg)   : 42.88
B (ring opening deg) : -2.15
PA of pole (deg)     : 0.44
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation ("): 4.080
C/A sky separation (km): 16318.3
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
    
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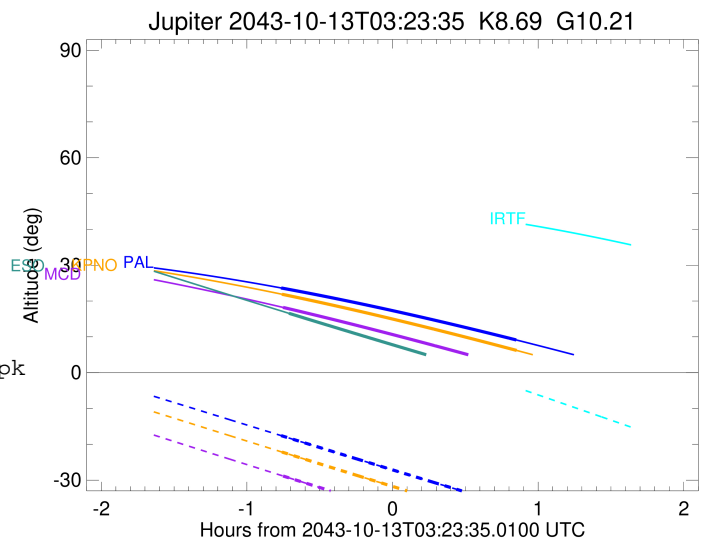
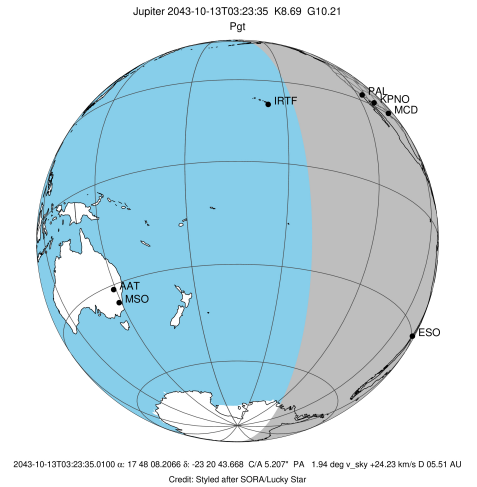


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-13T02:38:01.350	21.89	-22.15	71491.6	-14.42	-16.38
Jupiter	E	2043-10-13T04:14:42.938	6.21	-42.20	71491.7	-12.00	-13.66

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-10-13T03:26:45.670
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       : 4068766662981221120
2Mass ID (if available) : 17480807-2320406
ICRS Star Coord at Epoch: 17h 48m 08.20658s -23:20:43.66816s
RUWE (>1.4 is poor) : 1.07
K magnitude           : 8.693
G magnitude           : 10.206
RP magnitude          : 9.692
BP magnitude          : 10.542
DUPflag              : 0
Distance (au)         : 5.514
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 24.23
Sun-Target sep (deg) : 68.19
Sun-Moon sep (deg)   : 42.78
B (ring opening deg) : -2.15
PA of pole (deg)     : 0.44
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation (") : 4.162
C/A sky separation (km) : 16646.0
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
    
```

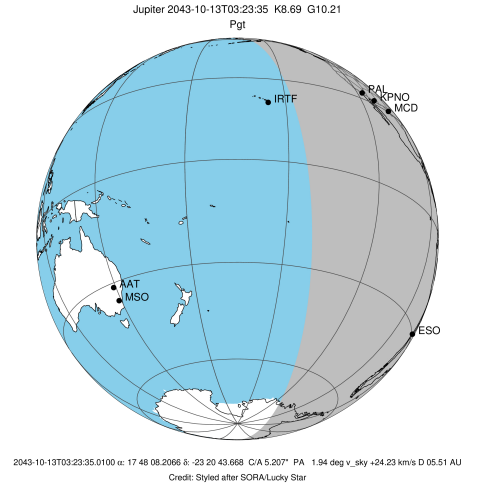


x: target alt < 5.0 deg or sun > -5.0 deg

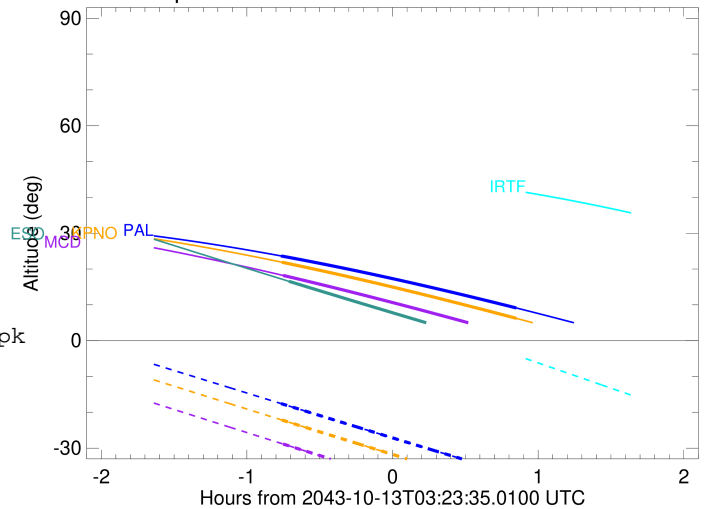
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-13T02:38:27.726	18.22	-28.83	71491.6	-14.66	-16.64
Jupiter	E	2043-10-13T04:14:52.929	1.23x	-48.70	71491.7	-12.30	-13.99

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-13T03:27:21.140
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : ESO
Location            : European Southern Obs. (3.6m)
Latitude (deg)     : -29.26097
E. Longitude (deg) : 289.26831
Altitude (km)      : 2.400
Gaia source ID     : 4068766662981221120
2Mass ID (if available) : 17480807-2320406
ICRS Star Coord at Epoch: 17h 48m 08.20658s -23:20:43.66816s
RUWE (>1.4 is poor) : 1.07
K magnitude         : 8.693
G magnitude         : 10.206
RP magnitude        : 9.692
BP magnitude        : 10.542
DUPflag            : 0
Distance (au)      : 5.514
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 24.23
Sun-Target sep (deg) : 68.19
Sun-Moon sep (deg)  : 42.57
B (ring opening deg) : -2.15
PA of pole (deg)    : 0.44
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation (" ) : 5.918
C/A sky separation (km) : 23668.7
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
    
```



Jupiter 2043-10-13T03:23:35 K8.69 G10.21



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	2043-10-13T02:40:54.700	16.57	-44.91	71491.2	-20.44	-23.05
Jupiter	E	2043-10-13T04:13:36.555	-2.10x	-53.00	71491.4	-18.20	-20.59