

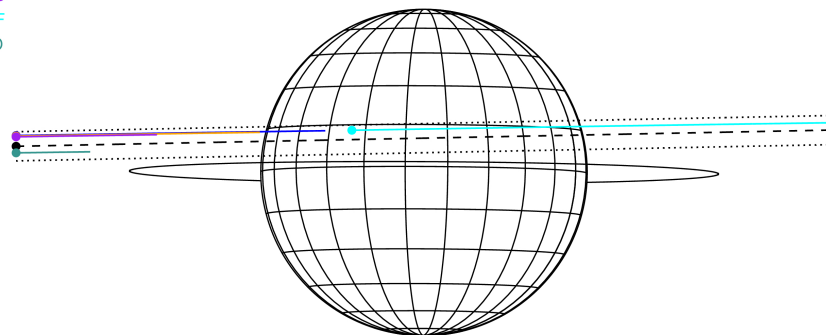
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-10-23T04:28:06.670  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4069373245428328064  
 2Mass ID (if available) : 17545616-2323050

Jupiter 2043-10-23T04:28:06 K7.82 G14.62 Pgt

ICRS Star Coord at Epoch: 17h 54m 56.16740s -23:23:05.14413s  
 RUWE (>1.4 is poor) : 0.94  
 K magnitude : 7.817  
 G magnitude : 14.618  
 RP magnitude : 13.107  
 BP magnitude : 17.936  
 DUPflag : 0  
 Distance (au) : 5.652  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 28.18  
 Sun-Target sep (deg) : 59.79  
 Sun-Moon sep (deg) : 172.64  
 B (ring opening deg) : -2.12  
 PA of pole (deg) : -0.29  
 Pole direction: RA (deg): 268.05675  
 Dec (deg): 64.49731  
 C/A sky separation (") : 3.669  
 C/A sky separation (km) : 15038.5  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



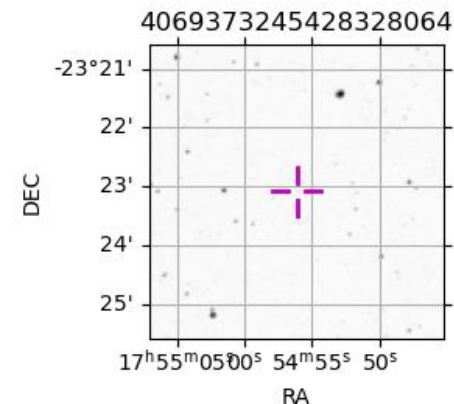
Earth  
 PAL  
 KPNO  
 MCD  
 IRTF  
 ESO



2043-10-23T04:28:06.6700 cc: 17 54 56.1674 s: -23 23 05.144 C/A 3.661" PA 181.14 deg v\_sky +28.18 km/s D 05.65 AU  
 Credit: Styled after SORA/Lucky Star

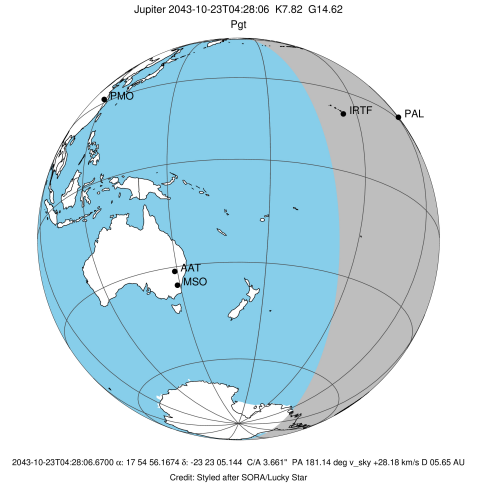
Observable events with sun below -5 deg and altitude above 5 deg

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 23 03:50 - OCT 23 03:50	Pin
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+	OCT 23 05:11 - OCT 23 05:11	Pne
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

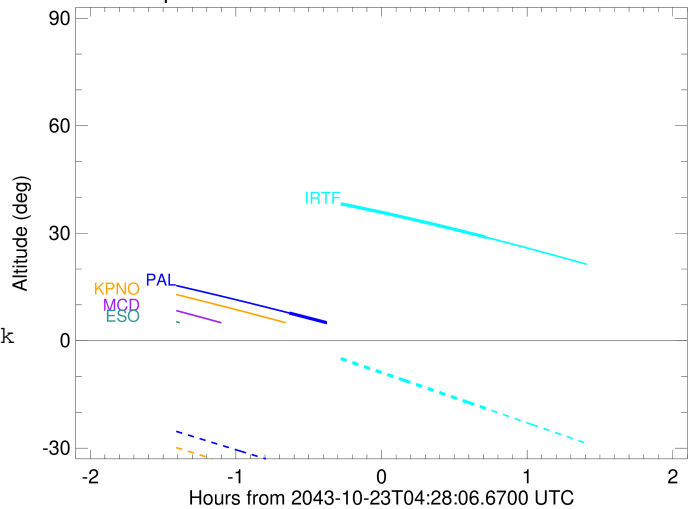


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-23T04:31:09.140
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg) : 243.13601
Altitude (km)       : 1.706
Gaia source ID      : 4069373245428328064
2Mass ID (if available) : 17545616-2323050
ICRS Star Coord at Epoch: 17h 54m 56.16740s -23:23:05.14413s
RUWE (>1.4 is poor) : 0.94
K magnitude          : 7.817
G magnitude          : 14.618
RP magnitude         : 13.107
BP magnitude         : 17.936
DUPflag             : 0
Distance (au)       : 5.652
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 28.18
Sun-Target sep (deg) : 59.79
Sun-Moon sep (deg)  : 172.45
B (ring opening deg) : -2.12
PA of pole (deg)    : -0.29
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation (" ) : 4.619
C/A sky separation (km) : 18935.2
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
    
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Jupiter 2043-10-23T04:28:06 K7.82 G14.62

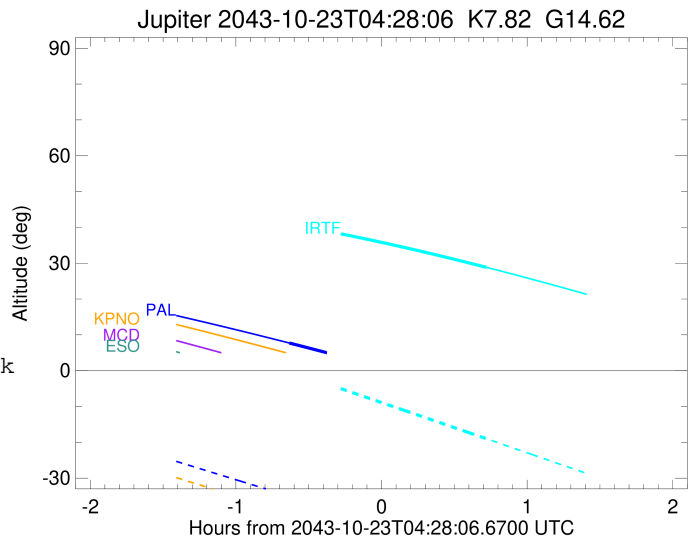
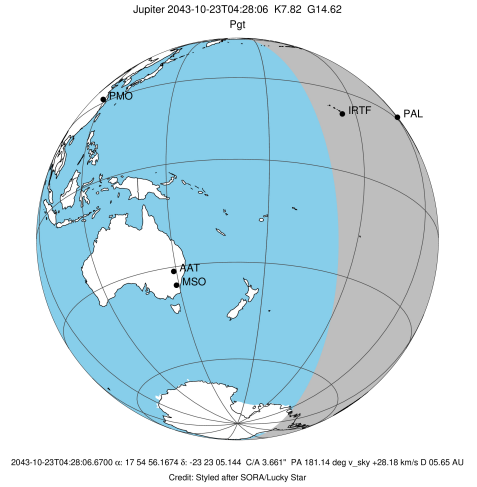


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-23T03:50:09.192	7.71	-35.01	71491.6	14.20	16.13
Jupiter	E	2043-10-23T05:12:02.142	-7.33x	-51.32	71491.5	16.47	18.67

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-10-23T04:30:06.480
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)       : 19.82622
E. Longitude (deg)   : 204.52800
Altitude (km)        : 4.168
Gaia source ID       : 4069373245428328064
2Mass ID (if available) : 17545616-2323050
ICRS Star Coord at Epoch: 17h 54m 56.16740s -23:23:05.14413s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 7.817
G magnitude           : 14.618
RP magnitude          : 13.107
BP magnitude          : 17.936
DUPflag              : 0
Distance (au)        : 5.652
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 28.18
Sun-Target sep (deg) : 59.79
Sun-Moon sep (deg)   : 172.74
B (ring opening deg) : -2.12
PA of pole (deg)     : -0.29
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation (") : 4.644
C/A sky separation (km) : 19036.7
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
    
```



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	2043-10-23T03:48:46.416	41.04	0.21x	71491.6	14.16	16.09
Jupiter	E	2043-10-23T05:11:21.462	28.84	-19.00	71491.5	16.65	18.86