

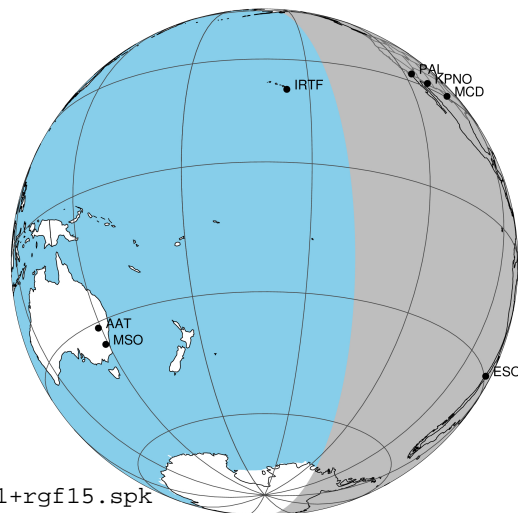
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-10-12T03:10:55.440  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4068770339473856000  
 2Mass ID (if available) : 17473017-2320226

Jupiter 2043-10-12T03:10:55 K9.01 G14.84 Pgt

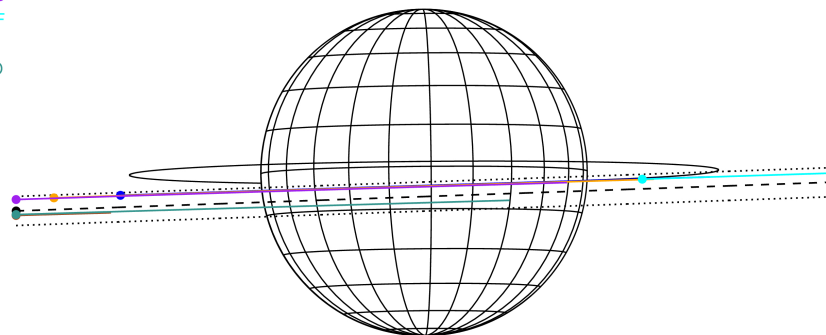
ICRS Star Coord at Epoch: 17h 47m 30.17473s -23°20'23.01911s

RUWE (>1.4 is poor) : 1.13  
 K magnitude : 9.010  
 G magnitude : 14.845  
 RP magnitude : 13.391  
 BP magnitude : 17.525  
 DUPflag : 0  
 Distance (au) : 5.500  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 23.81  
 Sun-Target sep (deg) : 69.04  
 Sun-Moon sep (deg) : 30.75  
 B (ring opening deg) : -2.16  
 PA of pole (deg) : 0.51  
 Pole direction: RA (deg): 268.05675  
 Dec (deg): 64.49731  
 C/A sky separation (") : 2.642  
 C/A sky separation (km) : 10538.5  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2043-10-12T03:10:55 K9.01 G14.84  
 Pgt



Earth  
 PAL  
 KPNO  
 MCD  
 IRTF  
 RIO  
 ESO

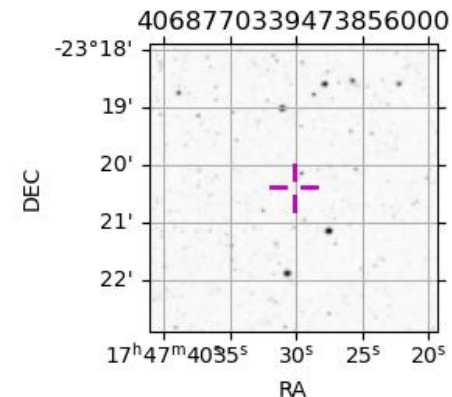


2043-10-12T03:10:55.4400 at: 17 47 30.1747 & -23 20 23.019 C/A 2.650" PA 2.02 deg v\_sky +23.81 km/s D 05.50 AU

Credit: Styled after SORA/Lucky Star

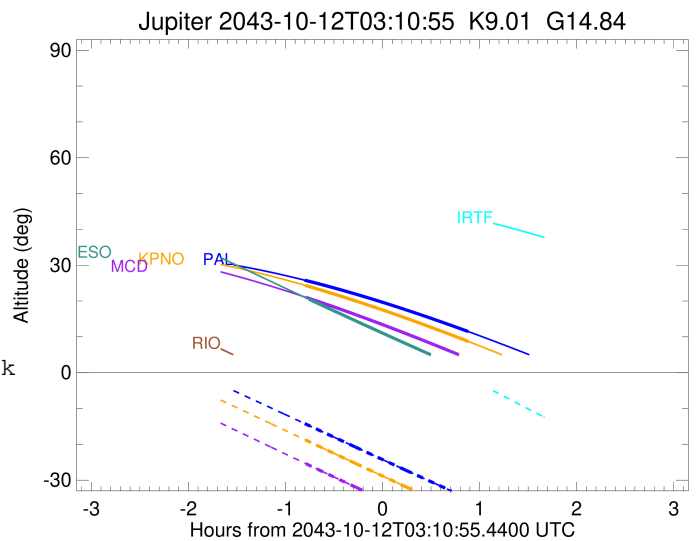
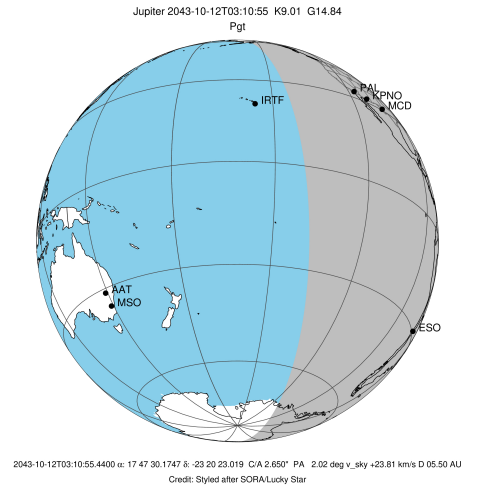
Observable events with sun below -5 deg and altitude above 5 deg

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 12 02:22 - OCT 12 04:03	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	OCT 12 02:23 - OCT 12 04:04	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+	OCT 12 02:23 - OCT 12 02:23	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 12 02:25 - OCT 12 02:25	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



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-12T03:13:25.520
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       : 4068770339473856000
2Mass ID (if available) : 17473017-2320226
ICRS Star Coord at Epoch: 17h 47m 30.17473s -23:20:23.01911s
RUWE (>1.4 is poor) : 1.13
K magnitude          : 9.010
G magnitude          : 14.845
RP magnitude         : 13.391
BP magnitude         : 17.525
DUPflag             : 0
Distance (au)        : 5.500
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 23.81
Sun-Target sep (deg) : 69.04
Sun-Moon sep (deg)  : 30.56
B (ring opening deg) : -2.16
PA of pole (deg)    : 0.51
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation ("): 1.433
C/A sky separation (km) : 5717.8
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
    
```

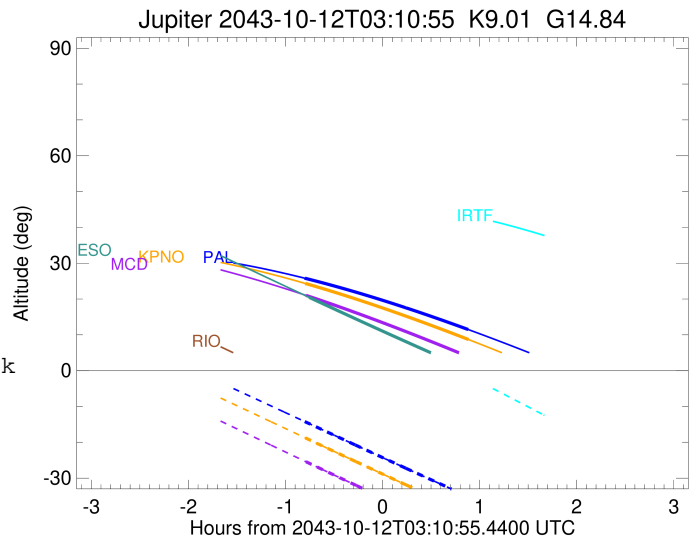
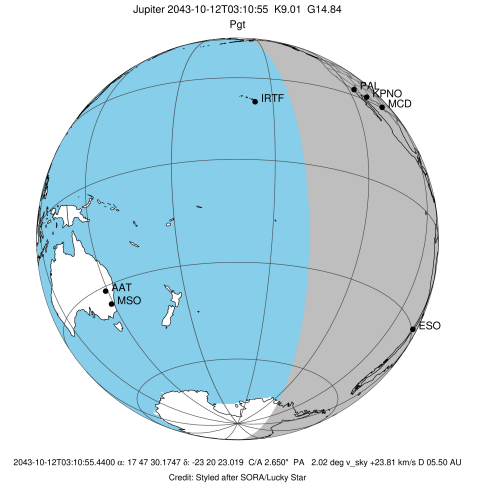


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-12T02:22:52.919	25.81	-14.21	71491.9	-5.88	-6.72
Jupiter	E	2043-10-12T04:03:48.355	11.50	-35.09	71492.0	-3.35	-3.83

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-12T03:13:42.500
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       : 4068770339473856000
2Mass ID (if available) : 17473017-2320226
ICRS Star Coord at Epoch: 17h 47m 30.17473s -23:20:23.01911s
RUWE (>1.4 is poor) : 1.13
K magnitude          : 9.010
G magnitude          : 14.845
RP magnitude         : 13.391
BP magnitude         : 17.525
DUPflag             : 0
Distance (au)        : 5.500
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 23.81
Sun-Target sep (deg) : 69.04
Sun-Moon sep (deg)   : 30.49
B (ring opening deg) : -2.16
PA of pole (deg)     : 0.51
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation ("): 1.491
C/A sky separation (km): 5947.9
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
    
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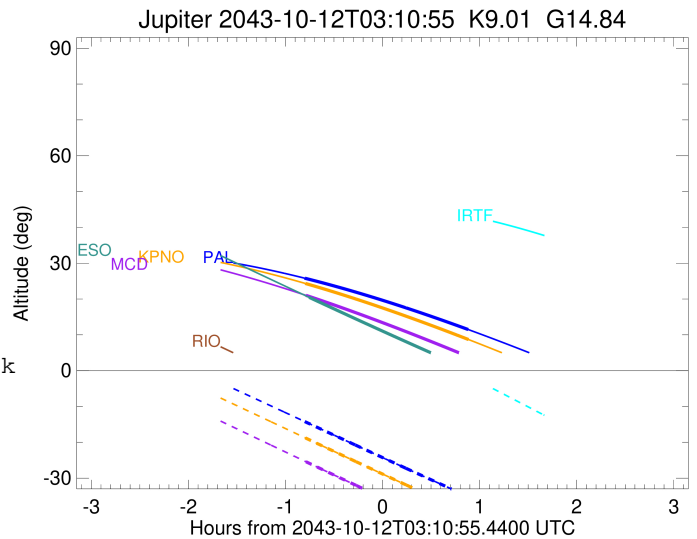
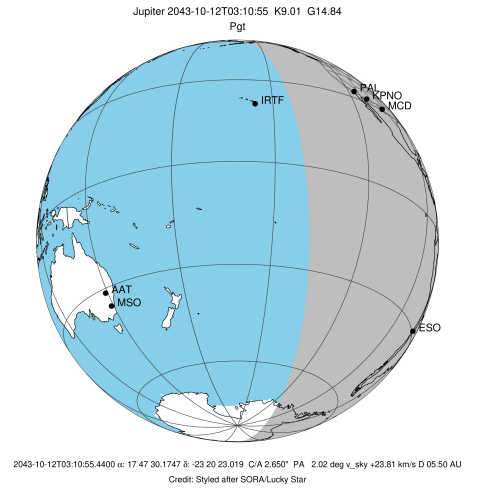


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-12T02:23:13.149	24.35	-18.76	71491.9	-6.04	-6.89
Jupiter	E	2043-10-12T04:04:01.283	8.70	-39.78	71492.0	-3.56	-4.07

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-10-12T03:14:03.300
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       : 4068770339473856000
2Mass ID (if available) : 17473017-2320226
ICRS Star Coord at Epoch: 17h 47m 30.17473s -23:20:23.01911s
RUWE (>1.4 is poor) : 1.13
K magnitude           : 9.010
G magnitude           : 14.845
RP magnitude          : 13.391
BP magnitude          : 17.525
DUPflag              : 0
Distance (au)        : 5.500
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 23.81
Sun-Target sep (deg) : 69.04
Sun-Moon sep (deg)   : 30.39
B (ring opening deg) : -2.16
PA of pole (deg)     : 0.51
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation (") : 1.570
C/A sky separation (km) : 6260.8
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
    
```

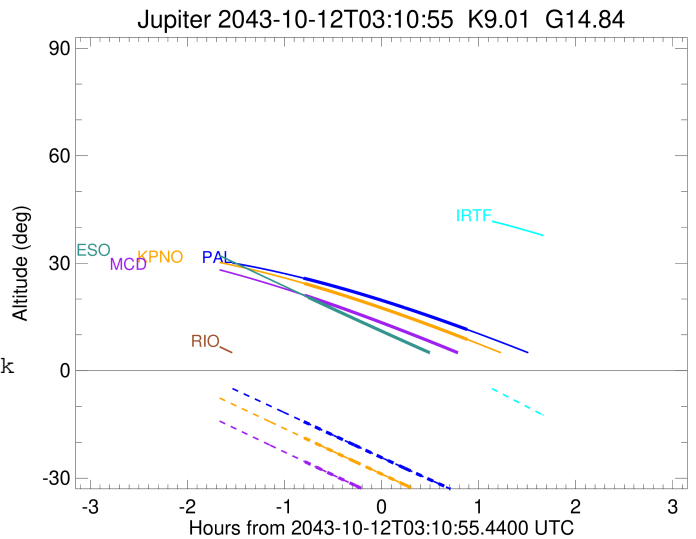
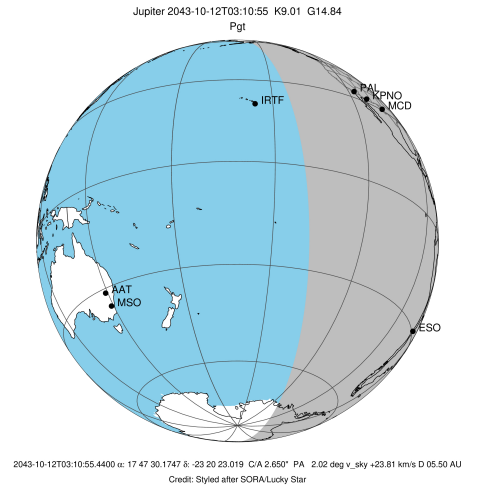


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-12T02:23:39.610	21.02	-25.43	71491.9	-6.25	-7.13
Jupiter	E	2043-10-12T04:04:15.481	3.86x	-46.34	71492.0	-3.85	-4.40

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-12T03:14:49.160
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      : 4068770339473856000
2Mass ID (if available) : 17473017-2320226
ICRS Star Coord at Epoch: 17h 47m 30.17473s -23:20:23.01911s
RUWE (>1.4 is poor) : 1.13
K magnitude          : 9.010
G magnitude          : 14.845
RP magnitude         : 13.391
BP magnitude         : 17.525
DUPflag             : 0
Distance (au)        : 5.500
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 23.81
Sun-Target sep (deg) : 69.04
Sun-Moon sep (deg)   : 30.09
B (ring opening deg) : -2.16
PA of pole (deg)     : 0.51
Pole direction: RA (deg): 268.05675
Dec (deg): 64.49731
C/A sky separation (") : 3.323
C/A sky separation (km) : 13254.3
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	2043-10-12T02:25:33.154	20.47	-42.94	71491.7	-11.80	-13.43
Jupiter	E	2043-10-12T04:03:52.446	0.43x	-53.05	71491.8	-9.56	-10.90