

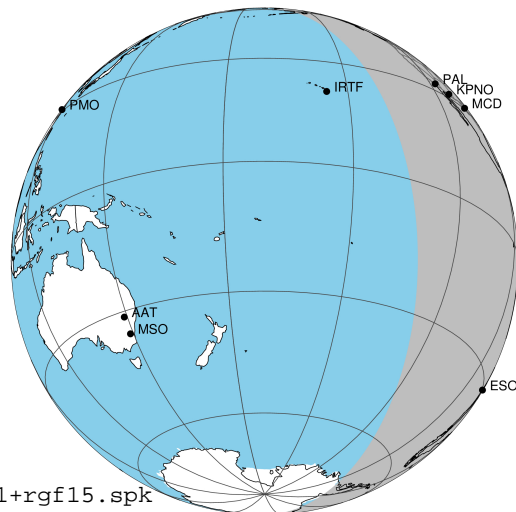
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-10-27T02:44:51.180
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116492992386610048
 2Mass ID (if available) : 17415117-2315011

Jupiter 2031-10-27T02:44:51 K8.12 G14.79 Pgt

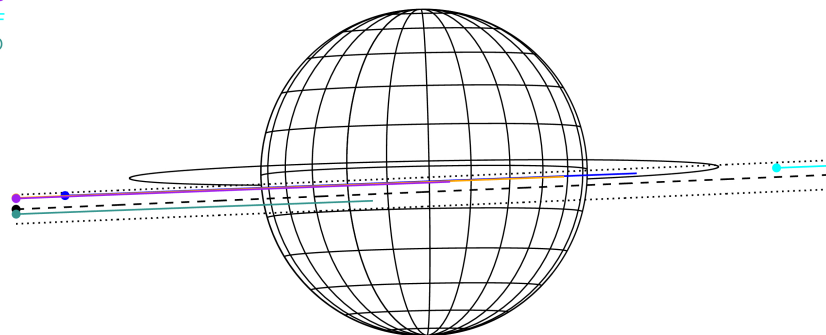
ICRS Star Coord at Epoch: 17h 41m 51.16957s -23:15:01.44424s

RUWE (>1.4 is poor) : 1.79
 K magnitude : 8.116
 G magnitude : 14.790
 RP magnitude : 13.169
 BP magnitude : 17.450
 DUPflag : 0
 Distance (au) : 5.775
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 31.22
 Sun-Target sep (deg) : 52.79
 Sun-Moon sep (deg) : 86.98
 B (ring opening deg) : -2.23
 PA of pole (deg) : 1.12
 Pole direction: RA (deg): 268.05681
 Dec (deg): 64.49652
 C/A sky separation (") : 2.037
 C/A sky separation (km) : 8530.5
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-10-27T02:44:51 K8.12 G14.79
 Pgt



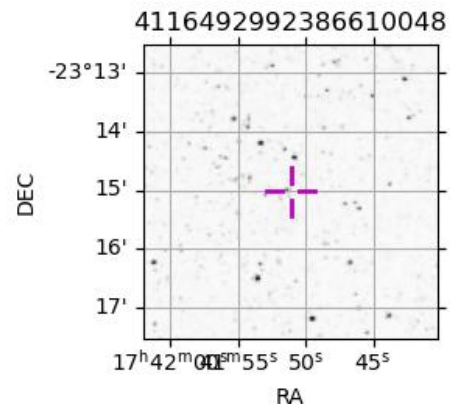
Earth
 PAL
 KPNO
 MCD
 IRTF
 ESO



2031-10-27T02:44:51.1800 a: 17 41 51.1696 & -23 15 01.444 C/A 2.045" PA 2.43 deg v_sky +31.22 km/s D 05.77 AU
 Credit: Styled after SORA/Lucky Star

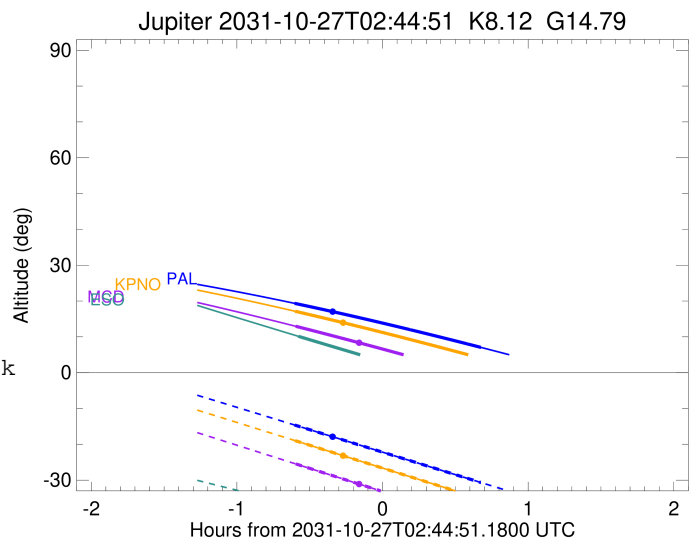
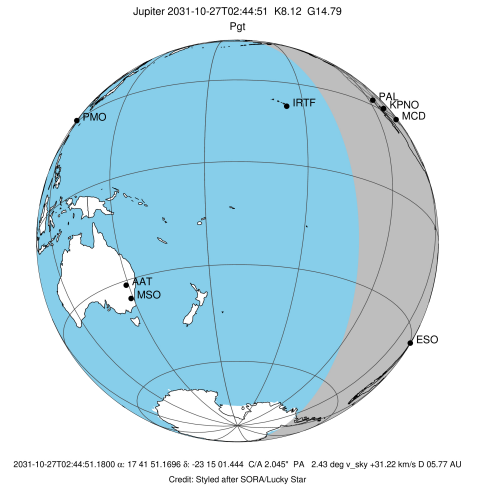
Observable events with sun below -5 deg and altitude above 5 deg

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 27 02:08 - OCT 27 03:25	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	OCT 27 02:08 - OCT 27 02:08	Pin
MCD	McDonald Obs. 2.7m	30.7	256.0	+	OCT 27 02:09 - OCT 27 02:09	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 27 02:10 - OCT 27 02:10	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             : 2031-10-27T02:47:03.710
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        : 4116492992386610048
2Mass ID (if available) : 17415117-2315011
ICRS Star Coord at Epoch: 17h 41m 51.16957s -23:15:01.44424s
RUWE (>1.4 is poor) : 1.79
K magnitude           : 8.116
G magnitude           : 14.790
RP magnitude          : 13.169
BP magnitude          : 17.450
DUPflag              : 0
Distance (au)         : 5.775
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 31.22
Sun-Target sep (deg) : 52.79
Sun-Moon sep (deg)   : 87.18
B (ring opening deg) : -2.23
PA of pole (deg)     : 1.12
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation ("): 0.938
C/A sky separation (km): 3929.7
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
    
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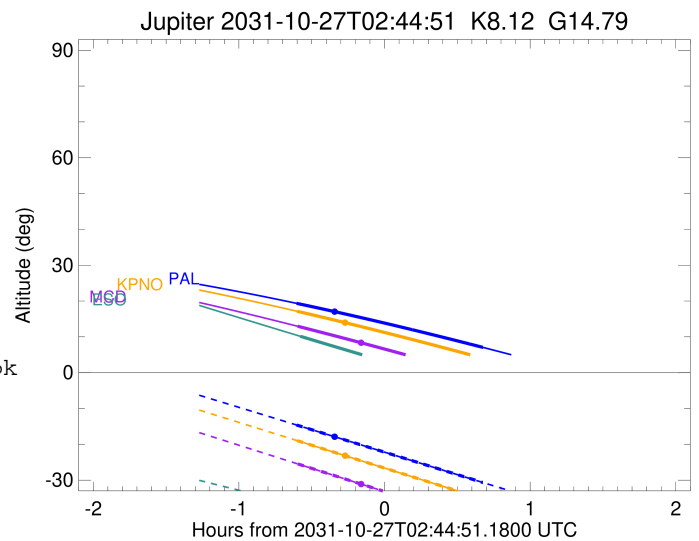
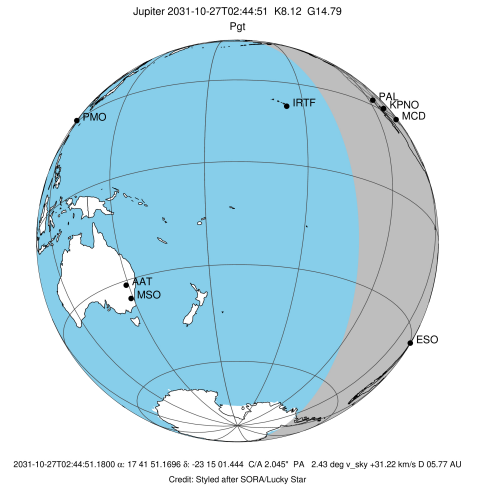


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-27T02:08:37.868	19.35	-14.61	71492.0	-4.26	-4.87
Jupiter	E	2031-10-27T03:25:24.867	7.05	-30.66	71492.0	-2.07	-2.37

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-27T02:47:14.920
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      : 4116492992386610048
2Mass ID (if available) : 17415117-2315011
ICRS Star Coord at Epoch: 17h 41m 51.16957s -23:15:01.44424s
RUWE (>1.4 is poor) : 1.79
K magnitude          : 8.116
G magnitude          : 14.790
RP magnitude         : 13.169
BP magnitude         : 17.450
DUPflag             : 0
Distance (au)       : 5.775
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 31.22
Sun-Target sep (deg) : 52.79
Sun-Moon sep (deg)  : 87.13
B (ring opening deg) : -2.23
PA of pole (deg)    : 1.12
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (" ) : 0.999
C/A sky separation (km) : 4182.3
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
    
```

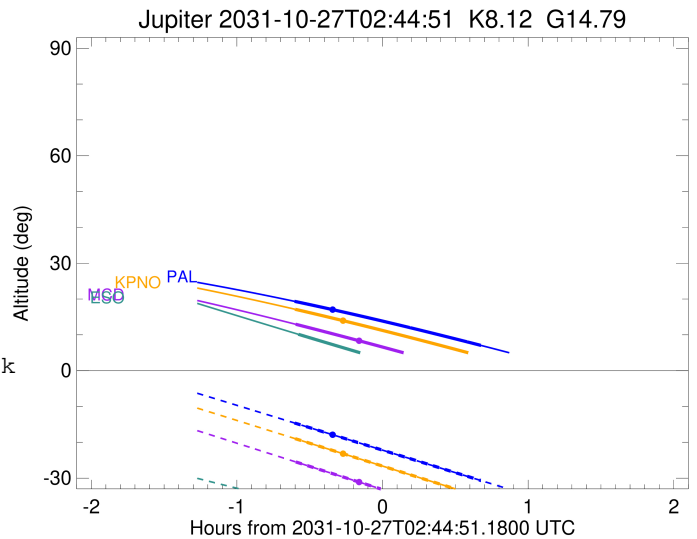
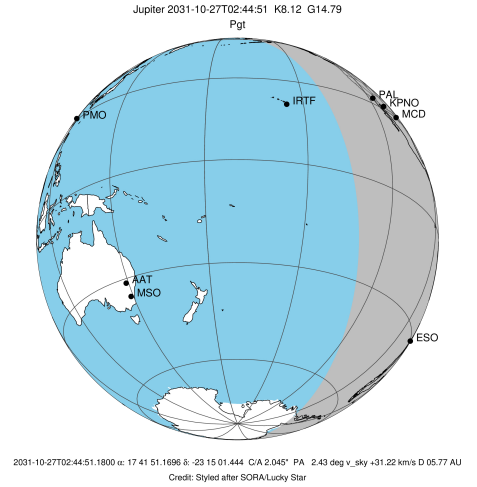


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-27T02:08:51.366	17.14	-18.97	71492.0	-4.44	-5.07
Jupiter	E	2031-10-27T03:25:33.483	4.01x	-35.25	71492.0	-2.29	-2.62

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-27T02:47:27.810
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       : 4116492992386610048
2Mass ID (if available) : 17415117-2315011
ICRS Star Coord at Epoch: 17h 41m 51.16957s -23:15:01.44424s
RUWE (>1.4 is poor) : 1.79
K magnitude           : 8.116
G magnitude           : 14.790
RP magnitude         : 13.169
BP magnitude         : 17.450
DUPflag              : 0
Distance (au)        : 5.775
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 31.22
Sun-Target sep (deg) : 52.79
Sun-Moon sep (deg)   : 87.05
B (ring opening deg) : -2.23
PA of pole (deg)     : 1.12
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation ("): 1.080
C/A sky separation (km): 4522.4
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
    
```

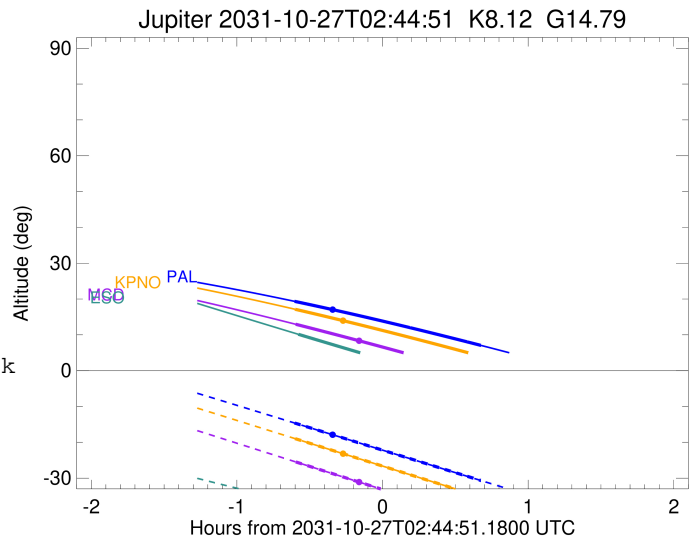
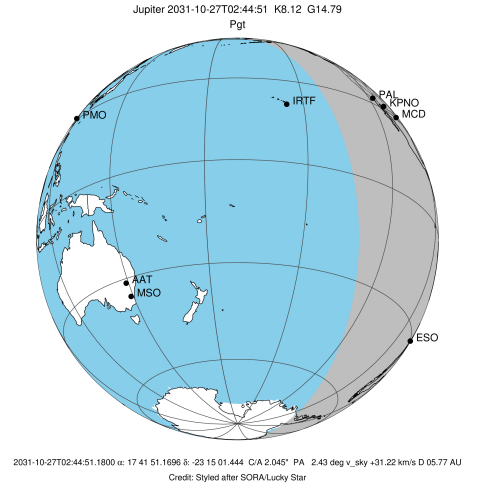


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-27T02:09:08.030	12.94	-25.48	71492.0	-4.69	-5.36
Jupiter	E	2031-10-27T03:25:42.252	-1.10x	-41.89	71492.0	-2.59	-2.96

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-27T02:47:48.620
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      : 4116492992386610048
2Mass ID (if available) : 17415117-2315011
ICRS Star Coord at Epoch: 17h 41m 51.16957s -23:15:01.44424s
RUWE (>1.4 is poor) : 1.79
K magnitude          : 8.116
G magnitude          : 14.790
RP magnitude         : 13.169
BP magnitude         : 17.450
DUPflag             : 0
Distance (au)       : 5.775
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 31.22
Sun-Target sep (deg) : 52.79
Sun-Moon sep (deg)  : 86.99
B (ring opening deg) : -2.23
PA of pole (deg)    : 1.12
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (" ) : 2.762
C/A sky separation (km) : 11566.3
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	2031-10-27T02:10:11.020	10.15	-36.78	71491.8	-10.32	-11.76
Jupiter	E	2031-10-27T03:25:20.745	-4.70x	-45.66	71491.9	-8.29	-9.46