

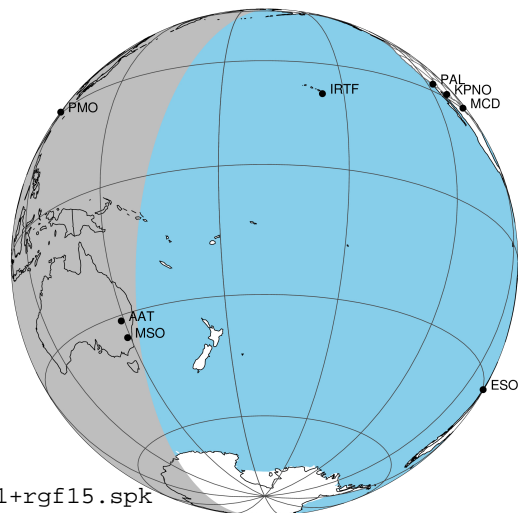
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-02-11T19:22:43.960
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4117508494462640896
 2Mass ID (if available) : 17293239-2242451

Jupiter 2031-02-11T19:22:43 K9.56 G15.00 Pgt

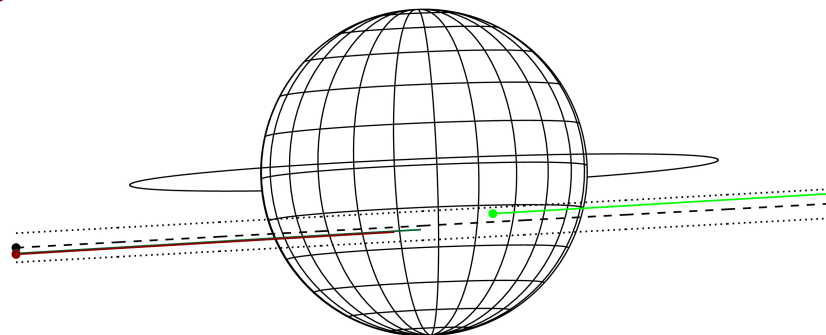
ICRS Star Coord at Epoch: 17h 29m 32.38637s -22:42:45.41710s

RUWE (>1.4 is poor) : 1.03
 K magnitude : 9.562
 G magnitude : 14.998
 RP magnitude : 13.654
 BP magnitude : 17.136
 DUPflag : 0
 Distance (au) : 5.754
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 28.29
 Sun-Target sep (deg) : 59.46
 Sun-Moon sep (deg) : 70.08
 B (ring opening deg) : -2.68
 PA of pole (deg) : 2.44
 Pole direction: RA (deg): 268.05703
 Dec (deg): 64.49651
 C/A sky separation (") : 5.571
 C/A sky separation (km) : 23251.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-02-11T19:22:43 K9.56 G15.00
 Pgt



Earth
 PMO
 AAT
 MSO

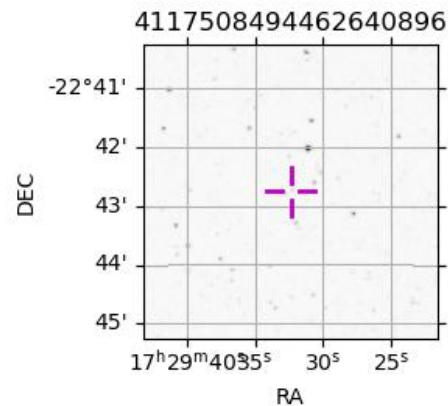


2031-02-11T19:22:43.9600 α: 17 29 32.3864 δ: -22 42 45.417 C/A 5.581" PA 3.10 deg v_sky +28.29 km/s D 05.75 AU

Credit: Styled after SORA/Lucky Star

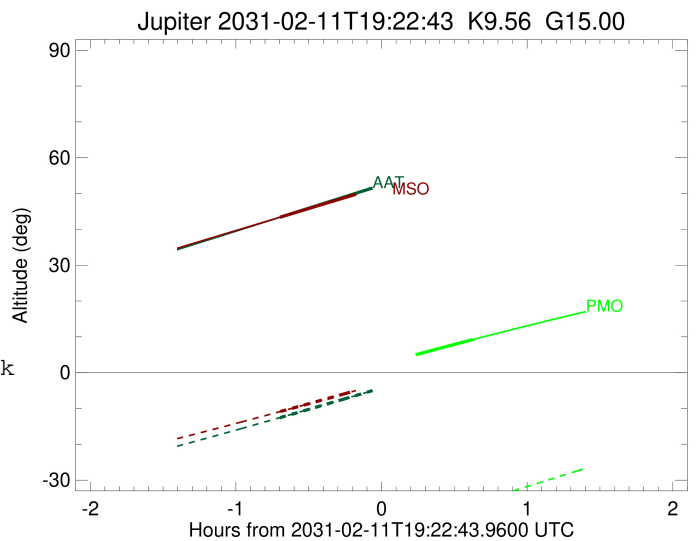
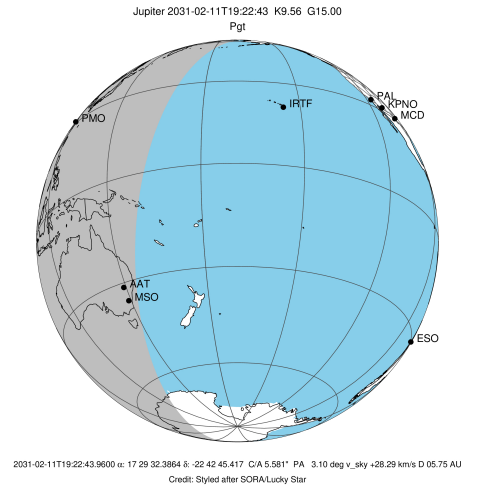
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	FEB 11 20:00 - FEB 11 20:00	Pne
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			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	+	FEB 11 18:40 - FEB 11 18:40	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	FEB 11 18:41 - FEB 11 18:41	Pin



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-02-11T19:19:38.900
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PMO
Location              : Purple Mtn Obs. Nanking
Latitude (deg)       : 32.06667
E. Longitude (deg)   : 118.82089
Altitude (km)        : 0.364
Gaia source ID       : 4117508494462640896
2Mass ID (if available) : 17293239-2242451
ICRS Star Coord at Epoch: 17h 29m 32.38637s -22:42:45.41710s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 9.562
G magnitude           : 14.998
RP magnitude          : 13.654
BP magnitude          : 17.136
DUPflag              : 0
Distance (au)        : 5.754
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 28.29
Sun-Target sep (deg) : 59.46
Sun-Moon sep (deg)   : 69.86
B (ring opening deg) : -2.68
PA of pole (deg)     : 2.44
Pole direction: RA (deg): 268.05703
Dec (deg): 64.49651
C/A sky separation ("): 4.740
C/A sky separation (km): 19782.5
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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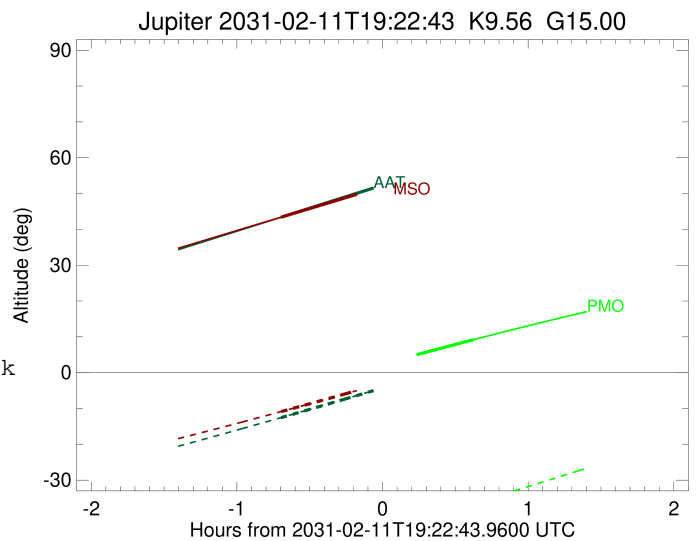
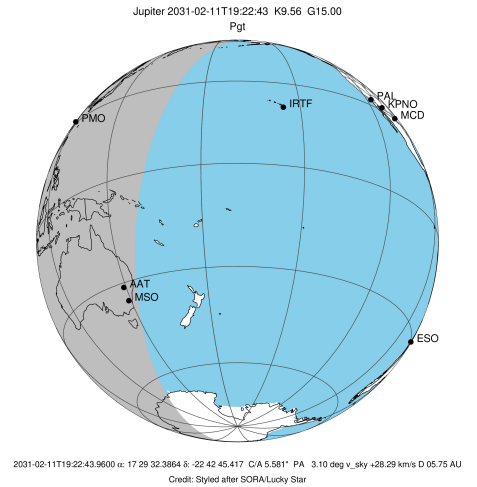


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-11T18:39:04.662	-5.95x	-53.29	71491.2	-17.01	-19.27
Jupiter	E	2031-02-11T20:00:20.010	9.22	-36.53	71491.3	-15.09	-17.13

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch             : 2031-02-11T19:20:41.500
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : AAT
Location              : Siding Spring (AAT)
Latitude (deg)        : -31.27703
E. Longitude (deg)    : 149.06608
Altitude (km)         : 1.164
Gaia source ID        : 4117508494462640896
2Mass ID (if available) : 17293239-2242451
ICRS Star Coord at Epoch: 17h 29m 32.38637s -22:42:45.41710s
RUWE (>1.4 is poor)  : 1.03
K magnitude           : 9.562
G magnitude           : 14.998
RP magnitude          : 13.654
BP magnitude          : 17.136
DUPflag              : 0
Distance (au)         : 5.754
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 28.29
Sun-Target sep (deg)  : 59.46
Sun-Moon sep (deg)    : 70.61
B (ring opening deg)  : -2.68
PA of pole (deg)      : 2.44
Pole direction: RA (deg): 268.05703
Dec (deg): 64.49651
C/A sky separation (") : 5.967
C/A sky separation (km) : 24903.2
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
    
```

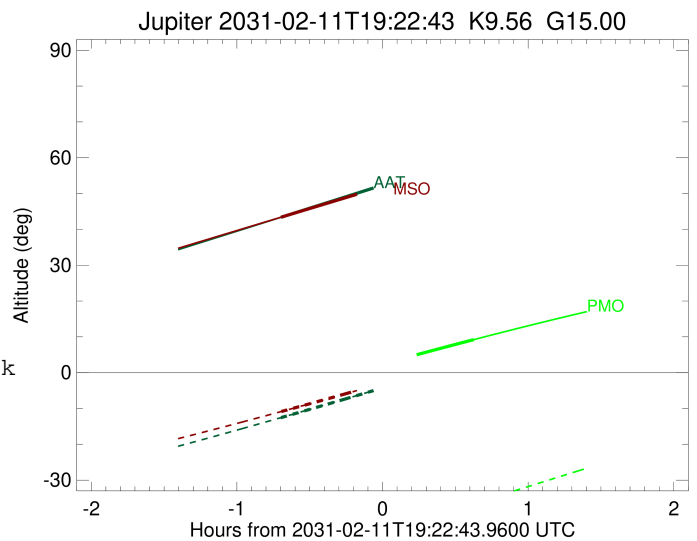
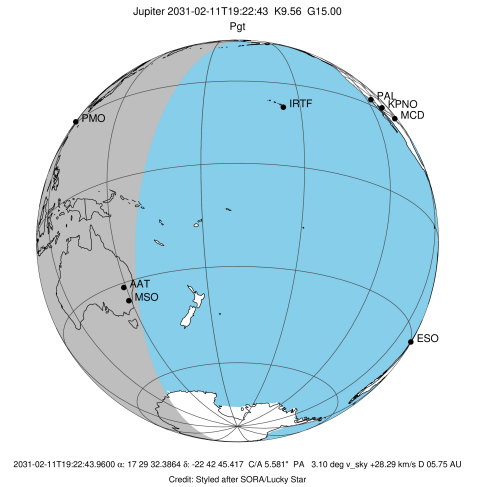


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-11T18:40:51.272	43.36	-12.56	71490.7	-21.27	-23.97
Jupiter	E	2031-02-11T20:00:36.803	60.42	3.51x	71490.9	-19.49	-22.01

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-11T19:20:47.880
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : MSO
Location            : Mt. Stromlo Observatory
Latitude (deg)      : -35.32000
E. Longitude (deg)  : 149.00833
Altitude (km)       : 0.770
Gaia source ID      : 4117508494462640896
2Mass ID (if available) : 17293239-2242451
ICRS Star Coord at Epoch: 17h 29m 32.38637s -22:42:45.41710s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 9.562
G magnitude          : 14.998
RP magnitude         : 13.654
BP magnitude         : 17.136
DUPflag             : 0
Distance (au)       : 5.754
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 28.29
Sun-Target sep (deg) : 59.46
Sun-Moon sep (deg)   : 70.61
B (ring opening deg) : -2.68
PA of pole (deg)     : 2.44
Pole direction: RA (deg): 268.05703
Dec (deg): 64.49651
C/A sky separation ("): 6.065
C/A sky separation (km): 25311.4
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	2031-02-11T18:41:04.129	43.42	-10.84	71490.7	-21.61	-24.34
Jupiter	E	2031-02-11T20:00:36.500	59.54	4.44x	71490.9	-19.85	-22.41