

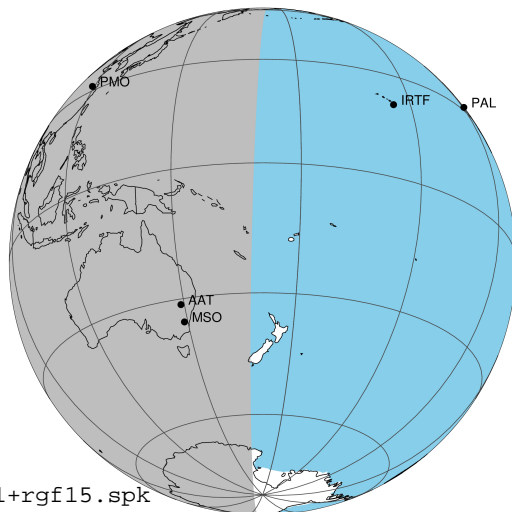
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-03-15T18:51:41.560
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068933720023032832
 2Mass ID (if available) : 17472720-2252020

Jupiter 2031-03-15T18:51:41 K9.94 G14.64 Pgt

ICRS Star Coord at Epoch: 17h 47m 27.20443s -22:52:02.14725s

RUWE (>1.4 is poor) : 2.63
 K magnitude : 9.941
 G magnitude : 14.643
 RP magnitude : 13.391
 BP magnitude : 16.156
 DUPflag : 0
 Distance (au) : 5.261
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 14.48
 Sun-Target sep (deg) : 87.45
 Sun-Moon sep (deg) : 9.02
 B (ring opening deg) : -2.63
 PA of pole (deg) : 0.51
 Pole direction: RA (deg): 268.05700
 Dec (deg): 64.49651
 C/A sky separation (") : 4.076
 C/A sky separation (km) : 15554.6
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

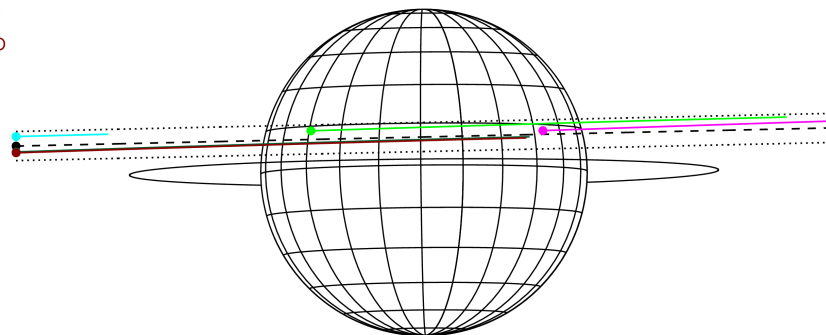
Jupiter 2031-03-15T18:51:41 K9.94 G14.64
 Pgt



2031-03-15T18:51:41.5600 cc: 17 47 27.2044 s: -22 52 02.147 C/A 4.066° PA 181.27 deg v_sky +14.48 km/s D 05.26 AU

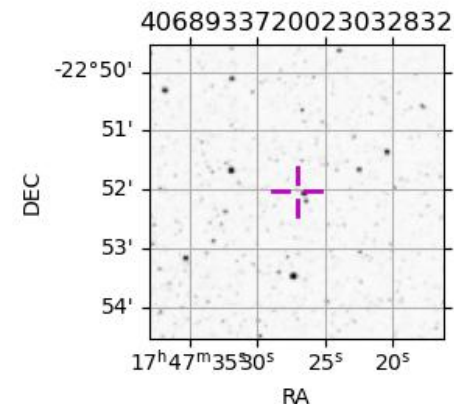
Credit: Styled after SORA/Lucky Star

Earth
 PMO
 IRTF
 KAV
 AAT
 MSO



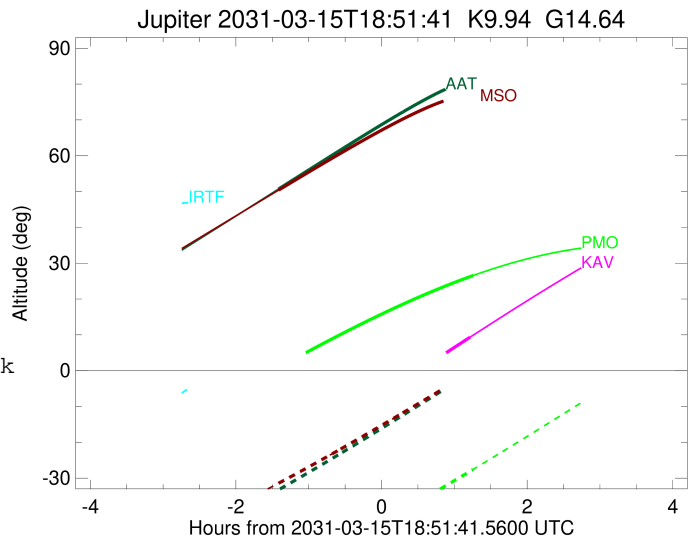
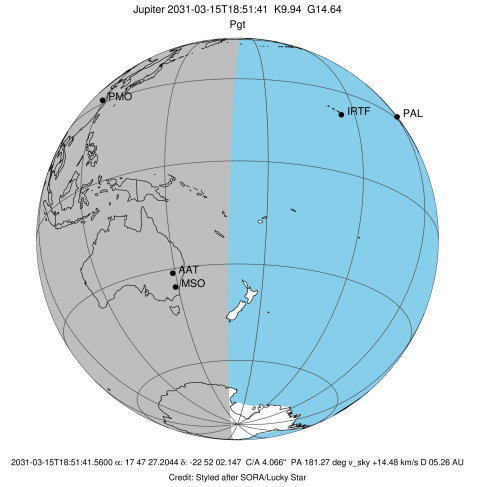
Observable events with sun below -5 deg and altitude above 5 deg

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			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	MAR 15 20:07 - MAR 15 20:07	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	+	MAR 15 20:04 - MAR 15 20:04	Pne
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	+	MAR 15 17:26 - MAR 15 17:26	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	MAR 15 17:26 - MAR 15 17:26	Pin



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-15T18:46:22.310
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      : 4068933720023032832
2Mass ID (if available) : 17472720-2252020
ICRS Star Coord at Epoch: 17h 47m 27.20443s -22:52:02.14725s
RUWE (>1.4 is poor) : 2.63
K magnitude          : 9.941
G magnitude          : 14.643
RP magnitude         : 13.391
BP magnitude         : 16.156
DUPflag             : 0
Distance (au)        : 5.261
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 14.48
Sun-Target sep (deg) : 87.45
Sun-Moon sep (deg)   : 8.34
B (ring opening deg) : -2.63
PA of pole (deg)     : 0.51
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation ("): 5.193
C/A sky separation (km): 19818.0
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
    
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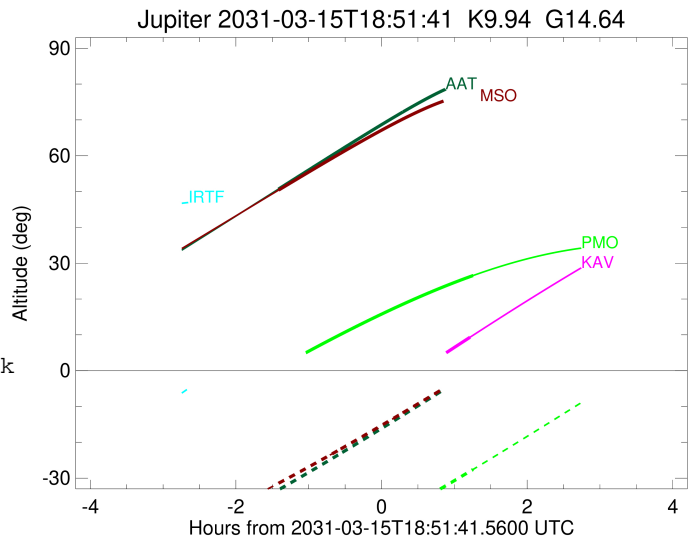
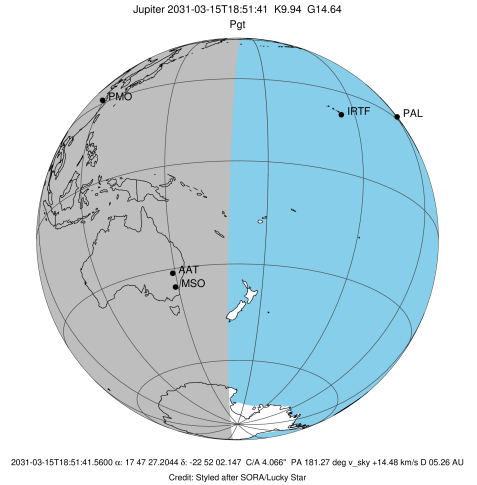


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-15T17:26:25.693	0.75x	-55.55	71491.4	14.76	16.75
Jupiter	E	2031-03-15T20:07:06.851	26.54	-27.58	71491.2	17.28	19.57

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-15T18:44:17.560
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : KAV
Location              : Kavalur Observatory
Latitude (deg)        : 12.57556
E. Longitude (deg)    : 78.83167
Altitude (km)         : 0.722
Gaia source ID        : 4068933720023032832
2Mass ID (if available) : 17472720-2252020
ICRS Star Coord at Epoch: 17h 47m 27.20443s -22:52:02.14725s
RUWE (>1.4 is poor)  : 2.63
K magnitude           : 9.941
G magnitude           : 14.643
RP magnitude          : 13.391
BP magnitude          : 16.156
DUPflag              : 0
Distance (au)         : 5.261
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 14.48
Sun-Target sep (deg)  : 87.45
Sun-Moon sep (deg)    : 8.04
B (ring opening deg) : -2.63
PA of pole (deg)      : 0.51
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation (") : 4.332
C/A sky separation (km) : 16529.9
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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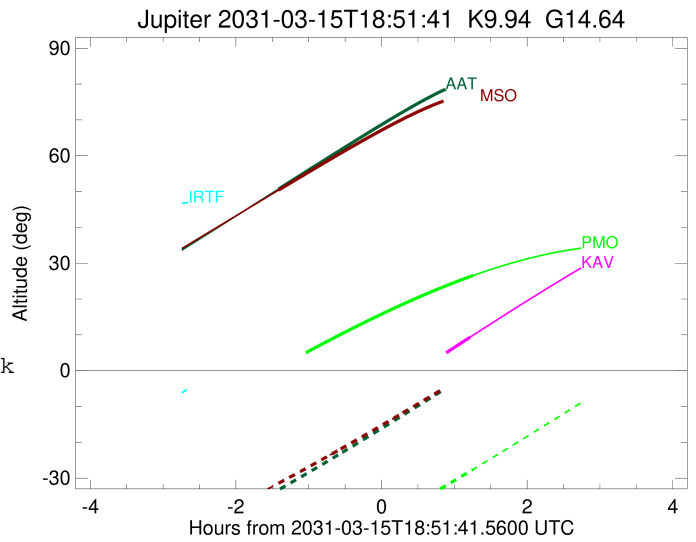
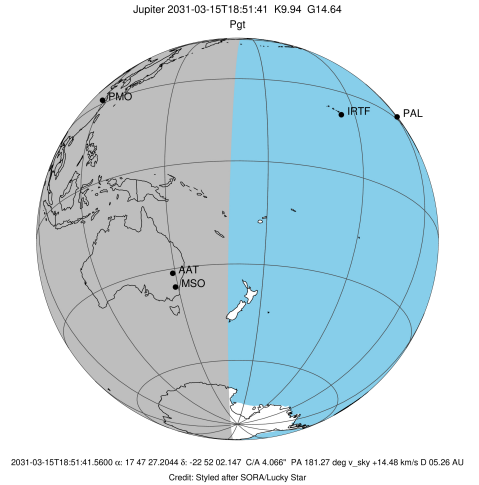


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-15T17:24:57.323	-26.87x	-65.69	71491.6	11.94	13.58
Jupiter	E	2031-03-15T20:04:39.354	9.33	-69.48	71491.4	14.81	16.81

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-15T18:49:12.280
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       : 4068933720023032832
2Mass ID (if available) : 17472720-2252020
ICRS Star Coord at Epoch: 17h 47m 27.20443s -22:52:02.14725s
RUWE (>1.4 is poor) : 2.63
K magnitude           : 9.941
G magnitude           : 14.643
RP magnitude         : 13.391
BP magnitude         : 16.156
DUPflag              : 0
Distance (au)        : 5.261
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 14.48
Sun-Target sep (deg) : 87.45
Sun-Moon sep (deg)   : 8.88
B (ring opening deg) : -2.63
PA of pole (deg)     : 0.51
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation (") : 3.783
C/A sky separation (km) : 14436.9
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
    
```

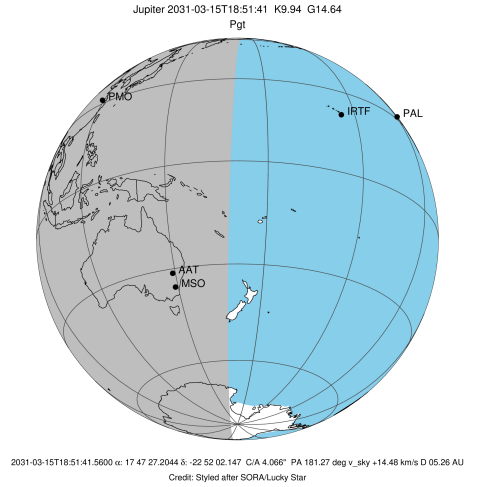


x: target alt < 5.0 deg or sun > -5.0 deg

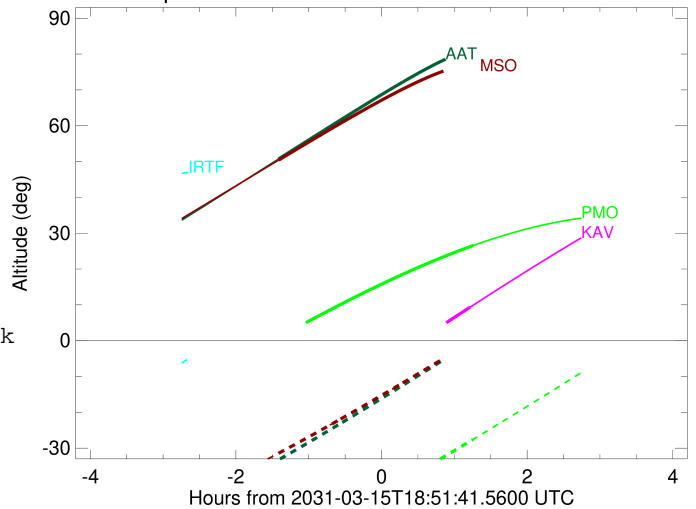
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-15T17:26:47.117	50.68	-33.26	71491.7	10.51	11.98
Jupiter	E	2031-03-15T20:12:07.804	81.58	0.92x	71491.6	12.56	14.29

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-15T18:49:19.640
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        : 4068933720023032832
2Mass ID (if available) : 17472720-2252020
ICRS Star Coord at Epoch: 17h 47m 27.20443s -22:52:02.14725s
RUWE (>1.4 is poor)  : 2.63
K magnitude           : 9.941
G magnitude           : 14.643
RP magnitude          : 13.391
BP magnitude          : 16.156
DUPflag               : 0
Distance (au)         : 5.261
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 14.48
Sun-Target sep (deg)  : 87.45
Sun-Moon sep (deg)    : 8.90
B (ring opening deg)  : -2.63
PA of pole (deg)      : 0.51
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation (") : 3.670
C/A sky separation (km) : 14004.9
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
    
```



Jupiter 2031-03-15T18:51:41 K9.94 G14.64



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	2031-03-15T17:26:53.618	50.40	-31.42	71491.7	10.18	11.60
Jupiter	E	2031-03-15T20:12:15.086	77.61	1.01x	71491.6	12.20	13.88