

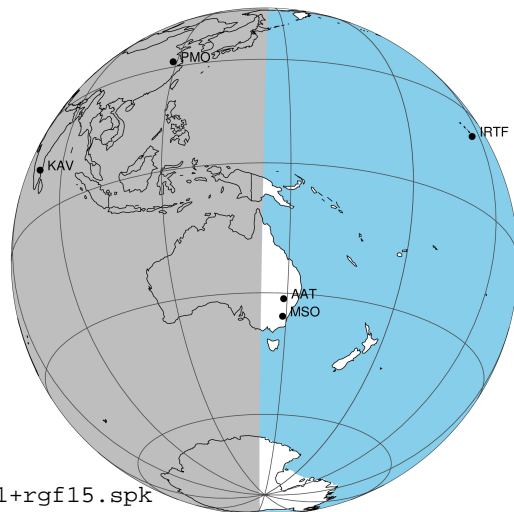
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-03-17T20:33:05.280
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068892655933910656
 2Mass ID (if available) : 17481475-2252330

Jupiter 2031-03-17T20:33:05 K8.62 G14.80 Pgt

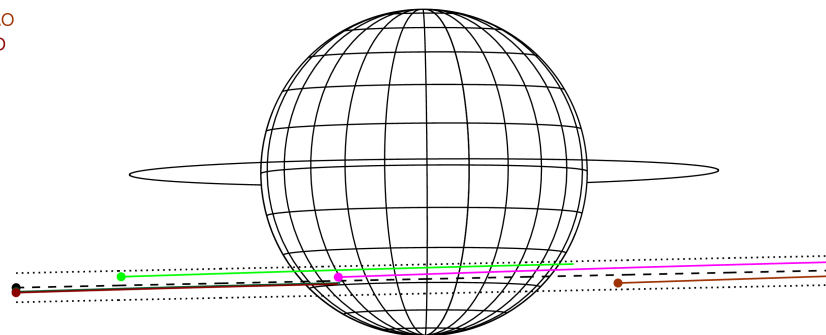
ICRS Star Coord at Epoch: 17h 48m 14.77457s -22:52:32.75272s

RUWE (>1.4 is poor) : 1.03
 K magnitude : 8.624
 G magnitude : 14.803
 RP magnitude : 13.303
 BP magnitude : 17.455
 DUPflag : 0
 Distance (au) : 5.228
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 13.50
 Sun-Target sep (deg) : 89.32
 Sun-Moon sep (deg) : 20.38
 B (ring opening deg) : -2.62
 PA of pole (deg) : 0.43
 Pole direction: RA (deg): 268.05700
 Dec (deg): 64.49651
 C/A sky separation (") : 12.305
 C/A sky separation (km) : 46657.0
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-03-17T20:33:05 K8.62 G14.80
 Pgt



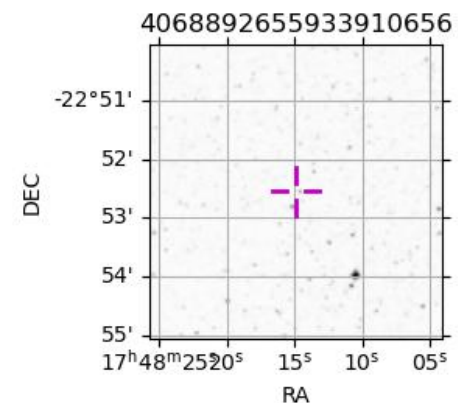
Earth
 PMO
 KAV
 AAT
 SAAO
 MSO



2031-03-17T20:33:05.2800 α: 17 48 14.7746 δ: -22 52 32.753 C/A ***** PA 1.21 deg v_sky +13.50 km/s D 05.23 AU
 Credit: Styled after SORA/Lucky Star

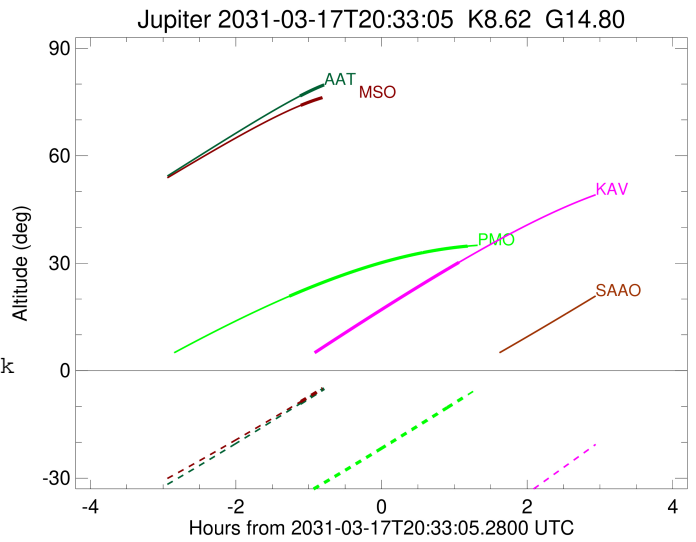
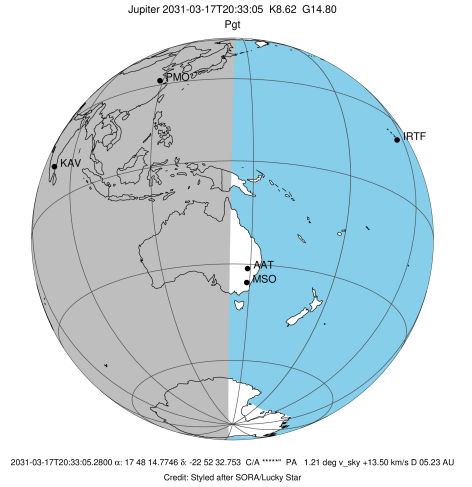
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
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 17 19:17 - MAR 17 21:44	Pie
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 17 21:36 - MAR 17 21:36	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 17 19:26 - MAR 17 19:26	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	MAR 17 19:26 - MAR 17 19:26	Pin



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-17T20:30:20.900
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      : 4068892655933910656
2Mass ID (if available) : 17481475-2252330
ICRS Star Coord at Epoch: 17h 48m 14.77457s -22:52:32.75272s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 8.624
G magnitude          : 14.803
RP magnitude         : 13.303
BP magnitude         : 17.455
DUPflag             : 0
Distance (au)       : 5.228
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 13.50
Sun-Target sep (deg) : 89.32
Sun-Moon sep (deg)  : 20.79
B (ring opening deg) : -2.62
PA of pole (deg)    : 0.43
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation ("): 11.000
C/A sky separation (km): 41706.1
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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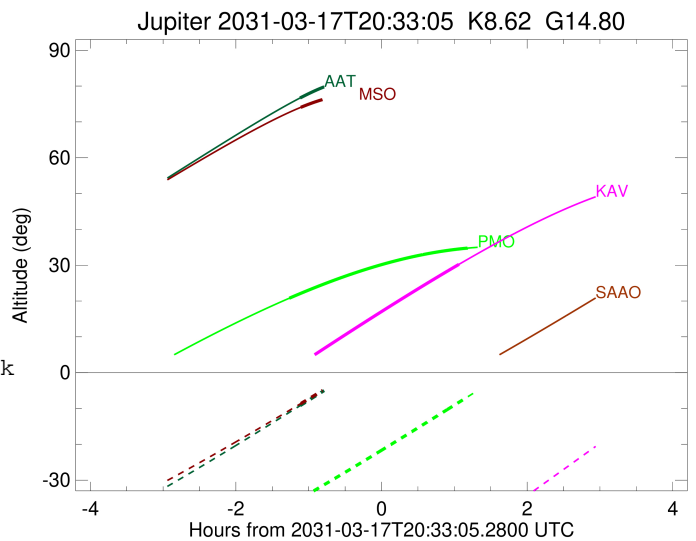
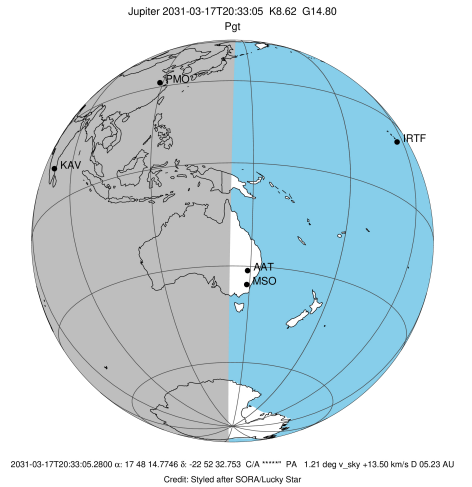


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-17T19:17:06.105	20.78	-36.90	71488.6	-36.83	-40.48
Jupiter	E	2031-03-17T21:44:02.532	34.77	-6.75	71488.9	-34.65	-38.23

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-17T20:26:39.470
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        : 4068892655933910656
2Mass ID (if available) : 17481475-2252330
ICRS Star Coord at Epoch: 17h 48m 14.77457s -22:52:32.75272s
RUWE (>1.4 is poor)  : 1.03
K magnitude           : 8.624
G magnitude           : 14.803
RP magnitude          : 13.303
BP magnitude          : 17.455
DUPflag              : 0
Distance (au)         : 5.228
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 13.50
Sun-Target sep (deg)  : 89.32
Sun-Moon sep (deg)    : 21.25
B (ring opening deg) : -2.62
PA of pole (deg)     : 0.43
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation (") : 11.746
C/A sky separation (km) : 44538.2
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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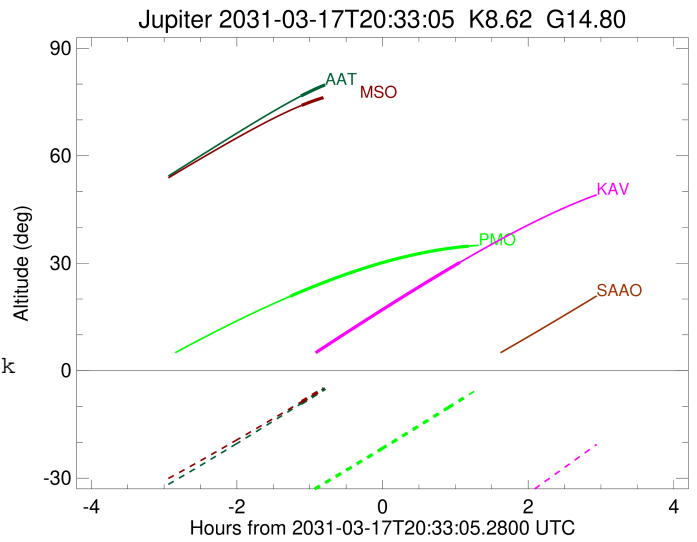
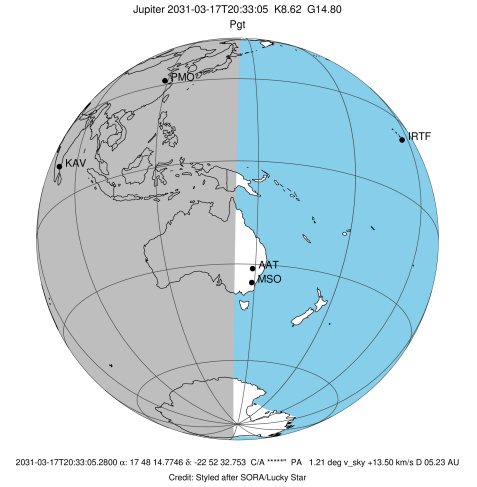


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-17T19:17:10.549	0.36x	-77.20	71488.1	-40.00	-43.71
Jupiter	E	2031-03-17T21:36:54.873	30.23	-47.83	71488.6	-37.05	-40.71

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-17T20:33:41.080
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        : 4068892655933910656
2Mass ID (if available) : 17481475-2252330
ICRS Star Coord at Epoch: 17h 48m 14.77457s -22:52:32.75272s
RUWE (>1.4 is poor)  : 1.03
K magnitude           : 8.624
G magnitude           : 14.803
RP magnitude          : 13.303
BP magnitude          : 17.455
DUPflag               : 0
Distance (au)         : 5.228
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 13.50
Sun-Target sep (deg)  : 89.32
Sun-Moon sep (deg)    : 20.67
B (ring opening deg) : -2.62
PA of pole (deg)      : 0.43
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation (") : 12.546
C/A sky separation (km) : 47568.4
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
    
```

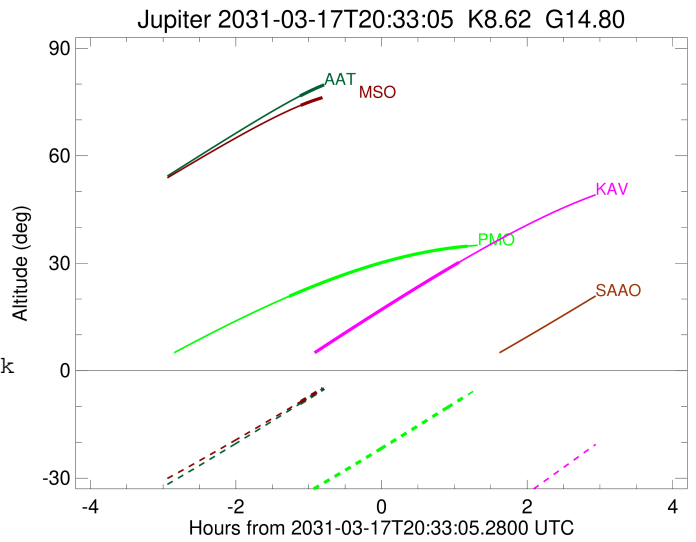
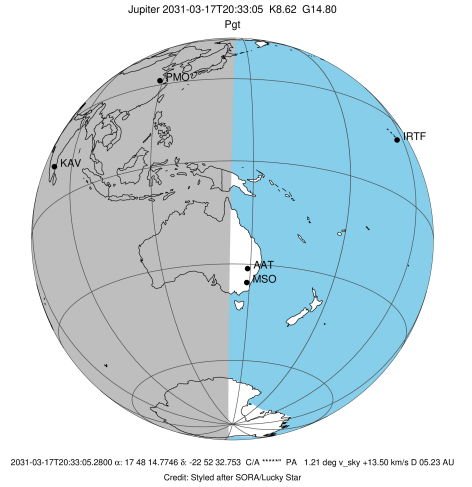


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-17T19:25:59.705	76.67	-9.21	71487.7	-42.51	-46.23
Jupiter	E	2031-03-17T21:41:26.971	68.66	19.64x	71487.9	-41.01	-44.73

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-17T20:33:39.700
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        : 4068892655933910656
2Mass ID (if available) : 17481475-2252330
ICRS Star Coord at Epoch: 17h 48m 14.77457s -22:52:32.75272s
RUWE (>1.4 is poor)  : 1.03
K magnitude           : 8.624
G magnitude           : 14.803
RP magnitude          : 13.303
BP magnitude          : 17.455
DUPflag              : 0
Distance (au)         : 5.228
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 13.50
Sun-Target sep (deg)  : 89.32
Sun-Moon sep (deg)    : 20.68
B (ring opening deg)  : -2.62
PA of pole (deg)      : 0.43
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation (") : 12.662
C/A sky separation (km) : 48009.2
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	2031-03-17T19:26:33.689	74.06	-8.63	71487.6	-42.98	-46.70
Jupiter	E	2031-03-17T21:40:50.316	67.31	18.65x	71487.9	-41.48	-45.20