

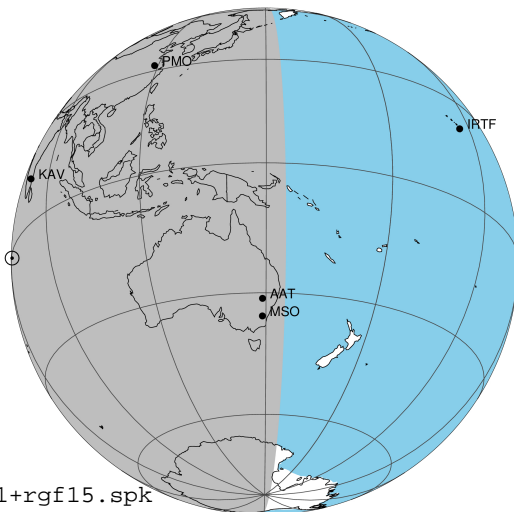
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-03-23T19:49:09.570
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068898501281458432
 2Mass ID (if available) : 17501472-2253110

Jupiter 2031-03-23T19:49:09 K8.55 G13.71 Pgt

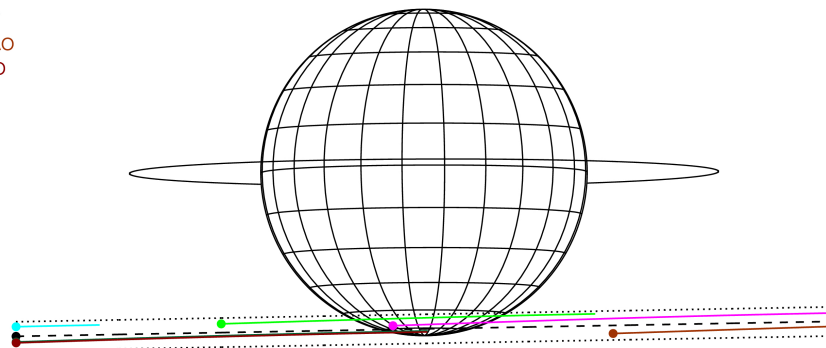
ICRS Star Coord at Epoch: 17h 50m 14.73714s -22°53:11.08775s

RUWE (>1.4 is poor) : 0.86
 K magnitude : 8.547
 G magnitude : 13.706
 RP magnitude : 12.427
 BP magnitude : 15.575
 DUPflag : 0
 Distance (au) : 5.131
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 10.65
 Sun-Target sep (deg) : 94.80
 Sun-Moon sep (deg) : 103.03
 B (ring opening deg) : -2.62
 PA of pole (deg) : 0.21
 Pole direction: RA (deg): 268.05699
 Dec (deg): 64.49651
 C/A sky separation (") : 18.406
 C/A sky separation (km) : 68498.9
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-03-23T19:49:09 K8.55 G13.71
 Pgt



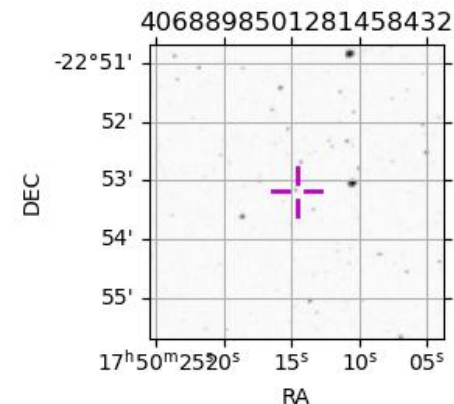
Earth
 PMO
 IRTF
 KAV
 AAT
 SAAO
 MSO



2031-03-23T19:49:09.5700 α: 17 50 14.7371 δ: -22 53 11.088 C/A ***** PA 1.04 deg v_sky +10.65 km/s D 05.13 AU
 Credit: Styled after SORA/Lucky Star

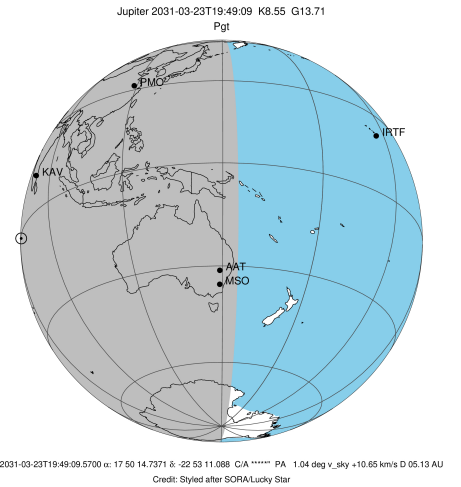
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	MAR 23 18:53 - MAR 23 20:37	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 23 20:22 - MAR 23 20:22	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 23 19:21 - MAR 23 19:21	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	MAR 23 19:24 - MAR 23 19:24	Pin

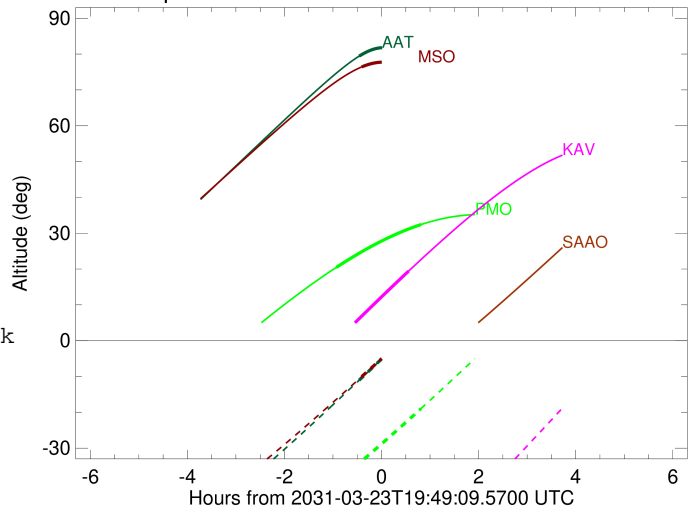


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-23T19:45:25.150
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       : 4068898501281458432
2Mass ID (if available) : 17501472-2253110
ICRS Star Coord at Epoch: 17h 50m 14.73714s -22:53:11.08775s
RUWE (>1.4 is poor) : 0.86
K magnitude           : 8.547
G magnitude           : 13.706
RP magnitude         : 12.427
BP magnitude         : 15.575
DUPflag              : 0
Distance (au)        : 5.131
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 10.65
Sun-Target sep (deg) : 94.80
Sun-Moon sep (deg)   : 103.38
B (ring opening deg) : -2.62
PA of pole (deg)     : 0.21
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation ("): 17.104
C/A sky separation (km): 63652.7
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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Jupiter 2031-03-23T19:49:09 K8.55 G13.71

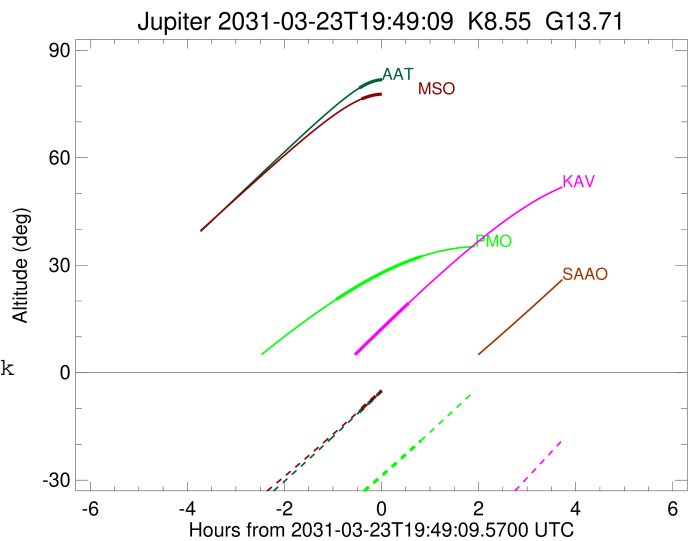
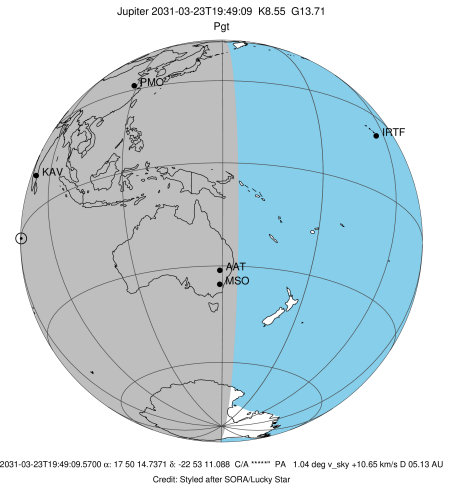


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-23T18:53:12.178	20.44	-39.40	71484.4	-64.19	-66.93
Jupiter	E	2031-03-23T20:37:57.461	32.41	-18.96	71484.7	-61.59	-64.54

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-23T19:41:30.150
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      : 4068898501281458432
2Mass ID (if available) : 17501472-2253110
ICRS Star Coord at Epoch: 17h 50m 14.73714s -22:53:11.08775s
RUWE (>1.4 is poor) : 0.86
K magnitude          : 8.547
G magnitude          : 13.706
RP magnitude         : 12.427
BP magnitude         : 15.575
DUPflag             : 0
Distance (au)       : 5.131
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 10.65
Sun-Target sep (deg) : 94.80
Sun-Moon sep (deg)  : 103.04
B (ring opening deg) : -2.62
PA of pole (deg)    : 0.21
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 17.898
C/A sky separation (km) : 66606.0
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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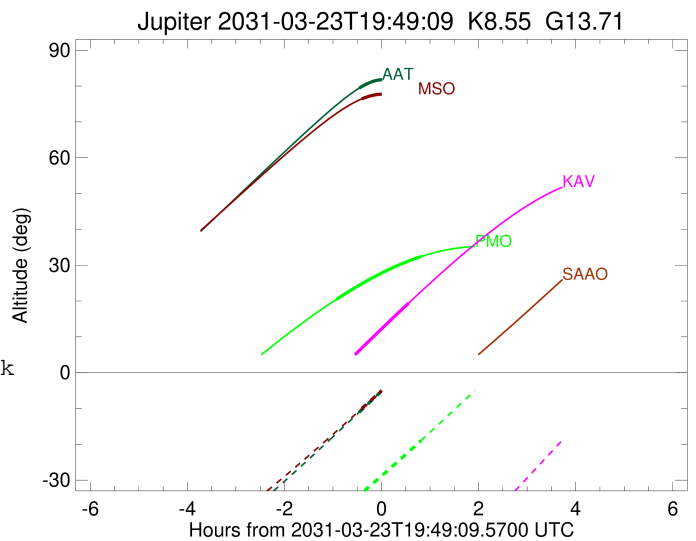
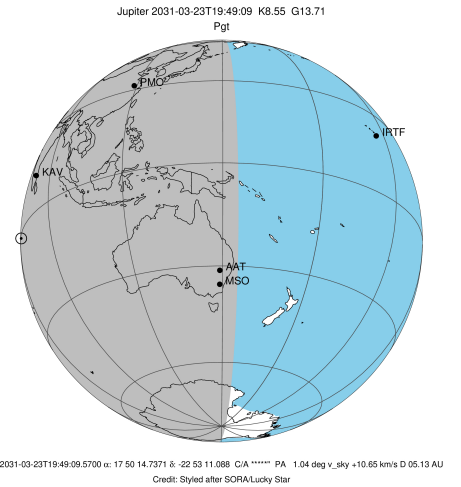


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-23T19:00:36.857	1.49x	-76.13	71483.7	-70.32	-72.51
Jupiter	E	2031-03-23T20:22:44.071	19.43	-63.48	71484.1	-66.83	-69.35

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-23T19:49:10.490
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        : 4068898501281458432
2Mass ID (if available) : 17501472-2253110
ICRS Star Coord at Epoch: 17h 50m 14.73714s -22:53:11.08775s
RUWE (>1.4 is poor) : 0.86
K magnitude           : 8.547
G magnitude           : 13.706
RP magnitude          : 12.427
BP magnitude          : 15.575
DUPflag              : 0
Distance (au)         : 5.131
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 10.65
Sun-Target sep (deg)  : 94.80
Sun-Moon sep (deg)    : 103.95
B (ring opening deg) : -2.62
PA of pole (deg)      : 0.21
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 18.651
C/A sky separation (km) : 69410.4
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
    
```

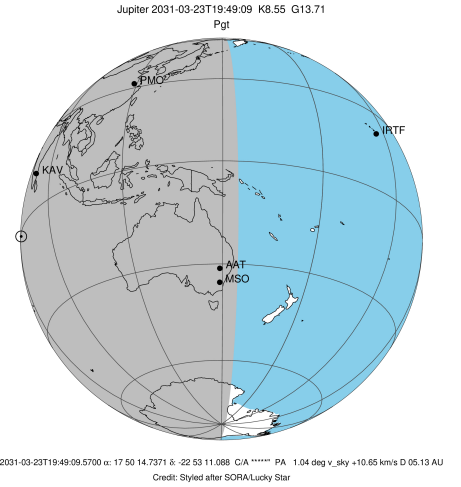


x: target alt < 5.0 deg or sun > -5.0 deg

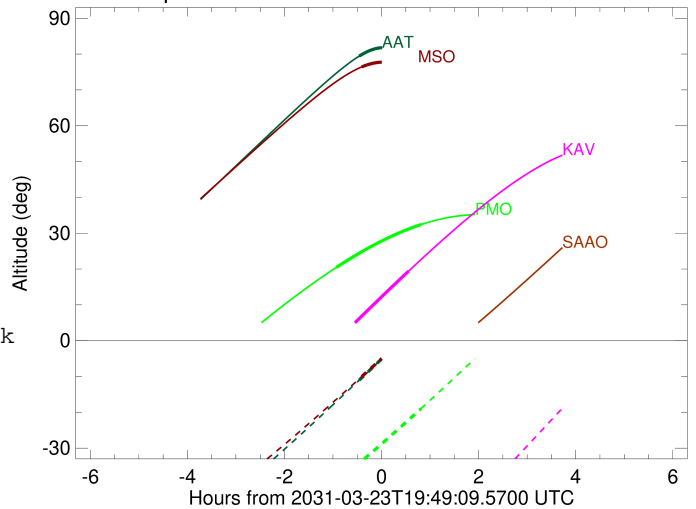
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-23T19:21:31.425	79.42	-11.03	71483.1	-76.83	-78.35
Jupiter	E	2031-03-23T20:16:51.304	80.02	0.79x	71483.2	-75.12	-76.82

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-23T19:49:10.750
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        : 4068898501281458432
2Mass ID (if available) : 17501472-2253110
ICRS Star Coord at Epoch: 17h 50m 14.73714s -22:53:11.08775s
RUWE (>1.4 is poor) : 0.86
K magnitude           : 8.547
G magnitude           : 13.706
RP magnitude          : 12.427
BP magnitude          : 15.575
DUPflag              : 0
Distance (au)         : 5.131
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 10.65
Sun-Target sep (deg)  : 94.80
Sun-Moon sep (deg)    : 103.93
B (ring opening deg) : -2.62
PA of pole (deg)      : 0.21
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 18.770
C/A sky separation (km) : 69851.3
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
    
```



Jupiter 2031-03-23T19:49:09 K8.55 G13.71



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	2031-03-23T19:24:38.678	76.40	-10.04	71483.0	-78.36	-79.70
Jupiter	E	2031-03-23T20:13:44.217	76.83	-0.03x	71483.1	-76.65	-78.19