

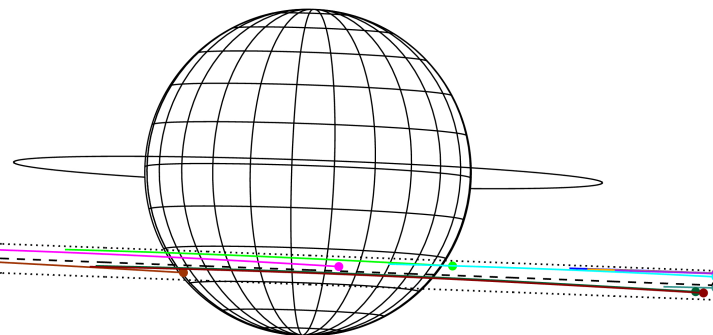
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-05-07T17:00:56.160
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4066630036993197440
 2Mass ID (if available) : 18105334-2300052

Jupiter 2043-05-07T17:00:56 K9.66 G14.10 Pgt

ICRS Star Coord at Epoch: 18h 10m 53.33557s -23:00:05.63955s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 9.657
 G magnitude : 14.097
 RP magnitude : 12.964
 BP magnitude : 15.441
 DUPflag : 0
 Distance (au) : 4.531
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -7.38
 Sun-Target sep (deg) : 133.94
 Sun-Moon sep (deg) : 113.57
 B (ring opening deg) : -2.43
 PA of pole (deg) : -2.01
 Pole direction: RA (deg): 268.05666
 Dec (deg): 64.49732
 C/A sky separation (") : 12.981
 C/A sky separation (km) : 42658.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



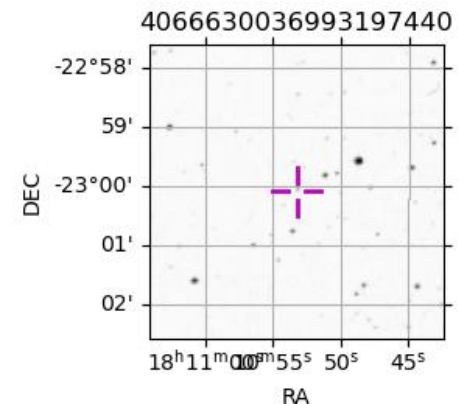
Earth
 PIC
 PAL
 PMO
 KPNO
 MCD
 TEN
 IRTF
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



2043-05-07T17:00:56.1600 α: 18 10 53.3356 δ: -23 00 05.640 C/A ***** PA 357.84 deg v_sky - 7.38 km/s D 04.53 AU
 Credit: Styled after SORA/Lucky Star

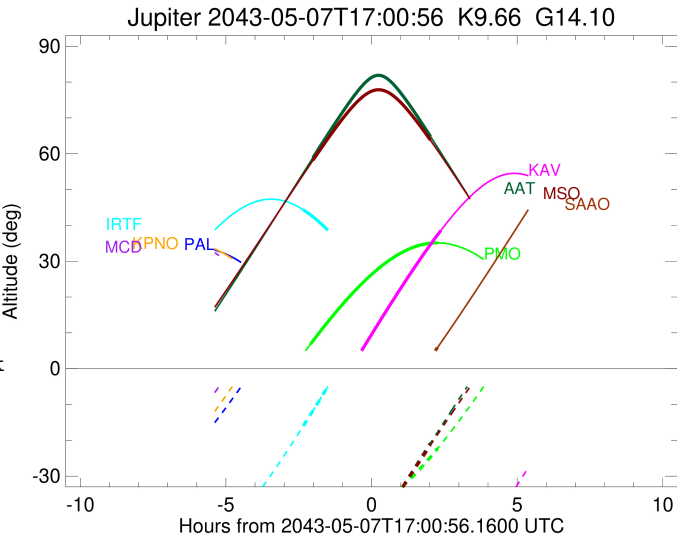
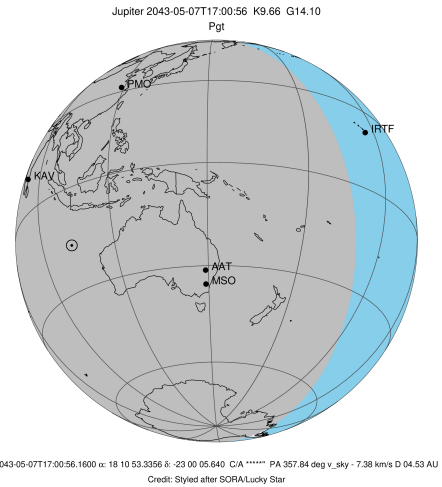
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	MAY 07 14:55 - MAY 07 19:17	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	+	MAY 07 14:40 - MAY 07 14:40	Pin
KAV	Kavalur Observatory	12.6	78.8	+	MAY 07 19:23 - MAY 07 19:23	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	+ +	MAY 07 15:00 - MAY 07 19:02	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	MAY 07 19:16 - MAY 07 19:16	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	MAY 07 15:00 - MAY 07 19:02	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-07T17:07:43.120
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       : 4066630036993197440
2Mass ID (if available) : 18105334-2300052
ICRS Star Coord at Epoch: 18h 10m 53.33557s -23:00:05.63955s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 9.657
G magnitude          : 14.097
RP magnitude         : 12.964
BP magnitude         : 15.441
DUPflag             : 0
Distance (au)        : 4.531
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -7.38
Sun-Target sep (deg) : 133.94
Sun-Moon sep (deg)   : 113.80
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.01
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 11.458
C/A sky separation (km): 37654.0
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
    
```

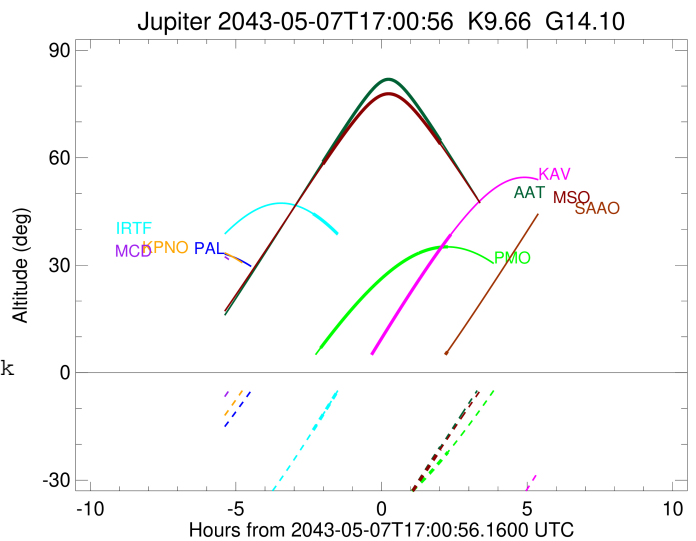
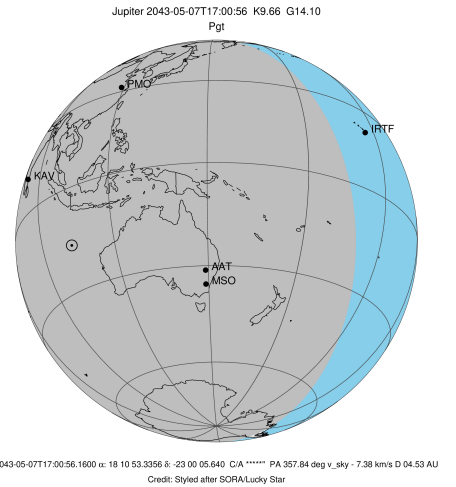


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-07T14:55:15.976	6.85	-38.71	71489.6	-32.68	-36.18
Jupiter	E	2043-05-07T19:17:36.474	35.12	-22.20	71489.8	-31.42	-34.86

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-07T16:48:45.910
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : IRTF
Location            : Mauna Kea/IRTF
Latitude (deg)      : 19.82622
E. Longitude (deg)  : 204.52800
Altitude (km)       : 4.168
Gaia source ID      : 4066630036993197440
2Mass ID (if available) : 18105334-2300052
ICRS Star Coord at Epoch: 18h 10m 53.33557s -23:00:05.63955s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 9.657
G magnitude          : 14.097
RP magnitude         : 12.964
BP magnitude         : 15.441
DUPflag             : 0
Distance (au)       : 4.531
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -7.38
Sun-Target sep (deg) : 133.94
Sun-Moon sep (deg)  : 114.27
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.01
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 11.969
C/A sky separation (km): 39332.9
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
    
```

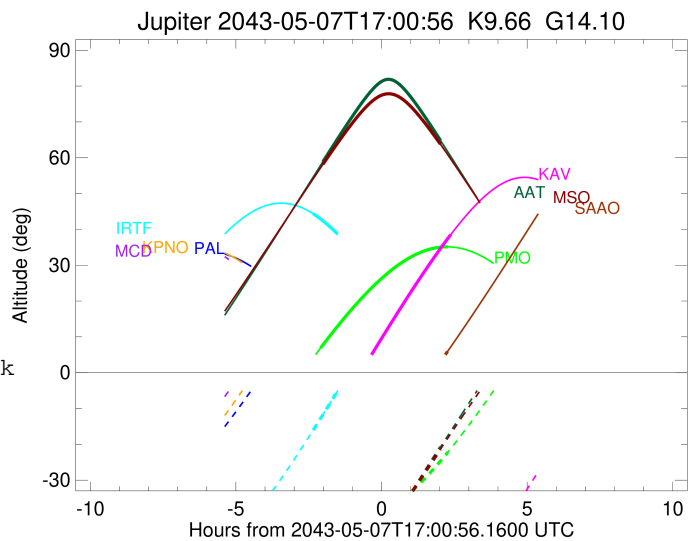
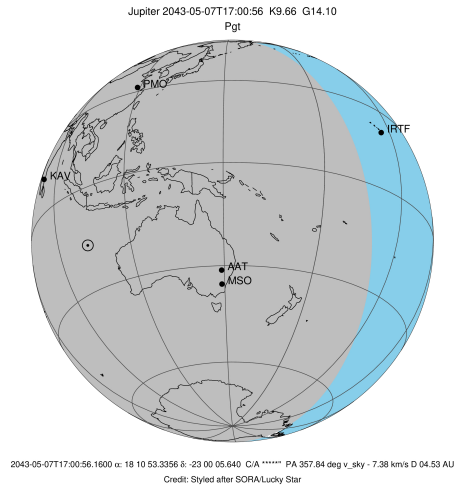


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-07T14:40:15.144	44.35	-16.03	71489.6	-32.71	-36.22
Jupiter	E	2043-05-07T19:00:00.281	-0.37x	43.00x	71489.4	-34.42	-37.99

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-07T17:15:52.900
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        : 4066630036993197440
2Mass ID (if available) : 18105334-2300052
ICRS Star Coord at Epoch: 18h 10m 53.33557s -23:00:05.63955s
RUWE (>1.4 is poor) : 0.96
K magnitude           : 9.657
G magnitude           : 14.097
RP magnitude          : 12.964
BP magnitude          : 15.441
DUPflag              : 0
Distance (au)         : 4.531
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -7.38
Sun-Target sep (deg) : 133.94
Sun-Moon sep (deg)   : 113.35
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.01
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (") : 12.271
C/A sky separation (km) : 40324.2
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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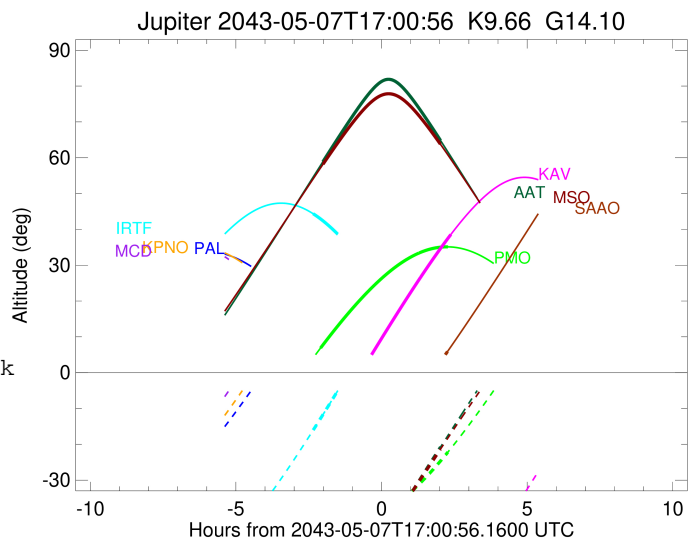
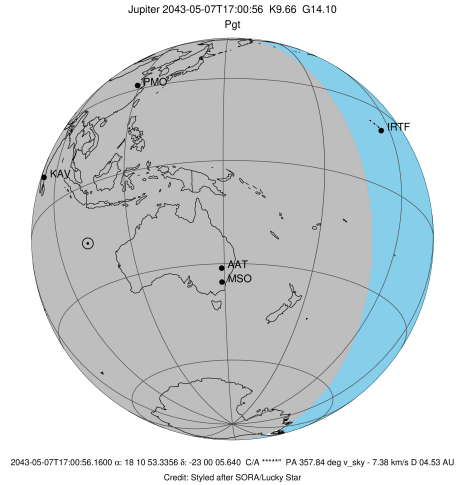


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-07T15:03:06.961	-17.02x	-28.64	71489.2	-35.79	-39.42
Jupiter	E	2043-05-07T19:23:50.250	38.57	-58.73	71489.6	-33.18	-36.71

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-07T17:01:40.010
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        : 4066630036993197440
2Mass ID (if available) : 18105334-2300052
ICRS Star Coord at Epoch: 18h 10m 53.33557s -23:00:05.63955s
RUWE (>1.4 is poor) : 0.96
K magnitude           : 9.657
G magnitude           : 14.097
RP magnitude          : 12.964
BP magnitude          : 15.441
DUPflag              : 0
Distance (au)         : 4.531
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -7.38
Sun-Target sep (deg)  : 133.94
Sun-Moon sep (deg)   : 114.46
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.01
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 13.251
C/A sky separation (km): 43547.1
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
    
```

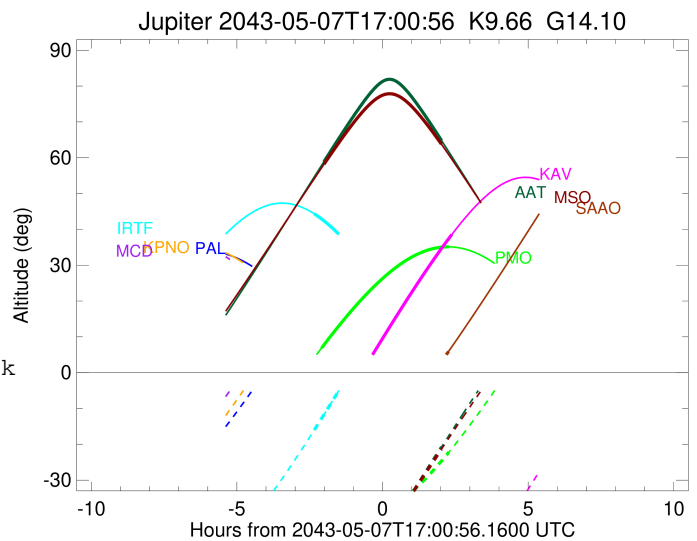
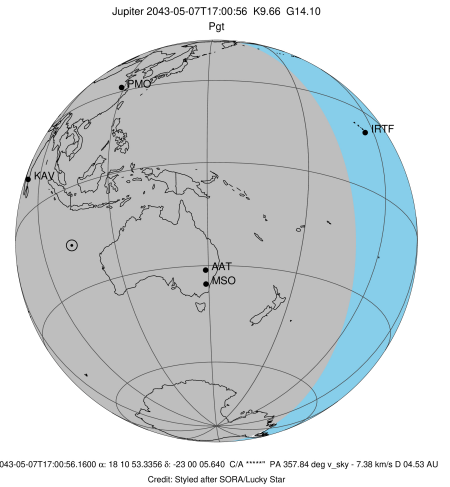


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-07T15:00:01.614	58.84	-70.34	71489.0	-37.89	-41.56
Jupiter	E	2043-05-07T19:02:41.945	64.77	-20.74	71489.0	-37.69	-41.36

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-07T17:12:45.470
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : SAAO
Location            : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)      : -32.37953
E. Longitude (deg)  : 20.81070
Altitude (km)       : 1.768
Gaia source ID      : 4066630036993197440
2Mass ID (if available) : 18105334-2300052
ICRS Star Coord at Epoch: 18h 10m 53.33557s -23:00:05.63955s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 9.657
G magnitude          : 14.097
RP magnitude         : 12.964
BP magnitude         : 15.441
DUPflag             : 0
Distance (au)       : 4.531
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -7.38
Sun-Target sep (deg) : 133.94
Sun-Moon sep (deg)  : 113.01
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.01
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 14.283
C/A sky separation (km): 46935.1
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
    
```

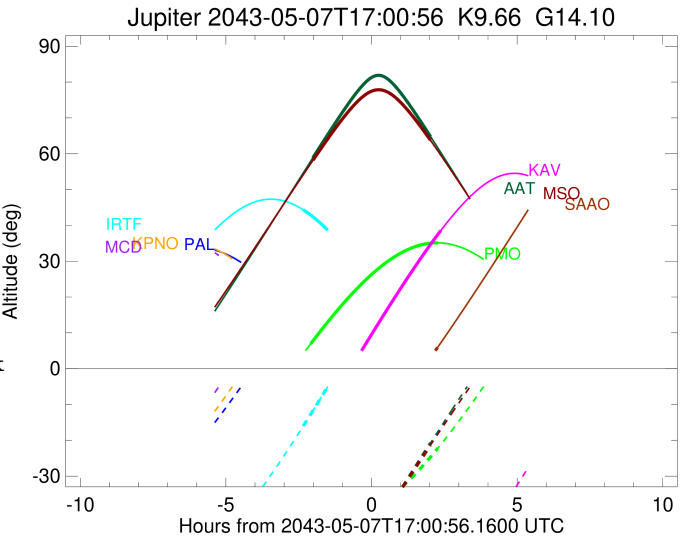
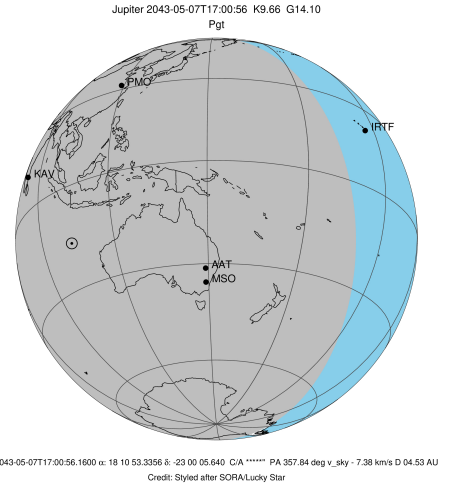


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-07T15:04:51.929	-31.89x	8.60x	71488.4	-41.96	-45.68
Jupiter	E	2043-05-07T19:16:56.066	5.90	-43.28	71488.7	-39.70	-43.40

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-07T17:01:41.460
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       : 4066630036993197440
2Mass ID (if available) : 18105334-2300052
ICRS Star Coord at Epoch: 18h 10m 53.33557s -23:00:05.63955s
RUWE (>1.4 is poor) : 0.96
K magnitude           : 9.657
G magnitude           : 14.097
RP magnitude         : 12.964
BP magnitude         : 15.441
DUPflag              : 0
Distance (au)        : 4.531
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -7.38
Sun-Target sep (deg) : 133.94
Sun-Moon sep (deg)   : 114.45
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.01
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (") : 13.386
C/A sky separation (km) : 43988.1
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
    
```



```

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 2043-05-07T15:00:30.325 58.19 -67.38 71488.9 -38.32 -42.01
Jupiter E 2043-05-07T19:02:16.515 63.77 -21.37 71488.9 -38.12 -41.80
    
```