

target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-06-25T15:44:54.360
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068869394265357696
 2Mass ID (if available) : 17484022-2304287

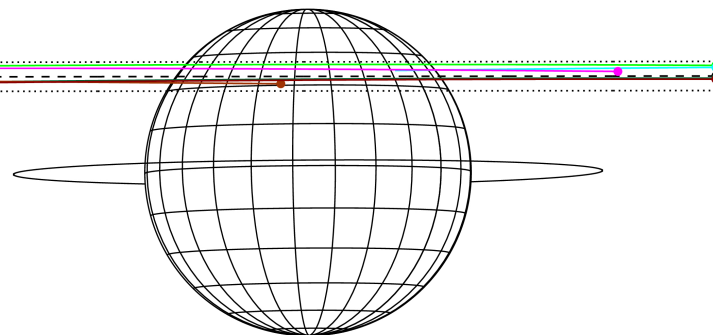
Jupiter 2043-06-25T15:44:54 K8.52 G14.27 Pgt

ICRS Star Coord at Epoch: 17h 48m 40.19332s -23:04:28.88968s
 RUWE (>1.4 is poor) : 0.87
 K magnitude : 8.519
 G magnitude : 14.267
 RP magnitude : 12.811
 BP magnitude : 16.945
 DUPflag : 0
 Distance (au) : 4.253
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.26
 Sun-Target sep (deg) : 173.98
 Sun-Moon sep (deg) : 41.43
 B (ring opening deg) : -2.43
 PA of pole (deg) : 0.38
 Pole direction: RA (deg): 268.05669
 Dec (deg): 64.49732
 C/A sky separation (") : 13.645
 C/A sky separation (km) : 42086.8
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



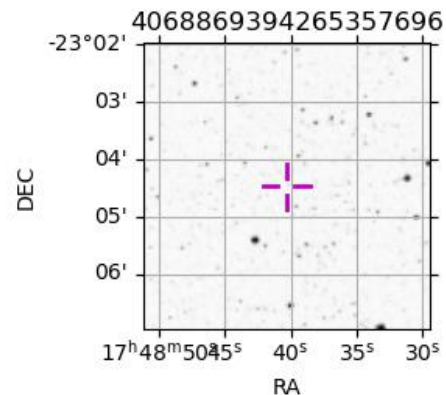
2043-06-25T15:44:54.3600 a: 17 48 40.1933 s: -23 04 28.890 C/A ***** PA 180.07 deg v_sky -16.26 km/s D 04.25 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PMO
 IRTF
 KAV
 AAT
 SAAO
 MSO



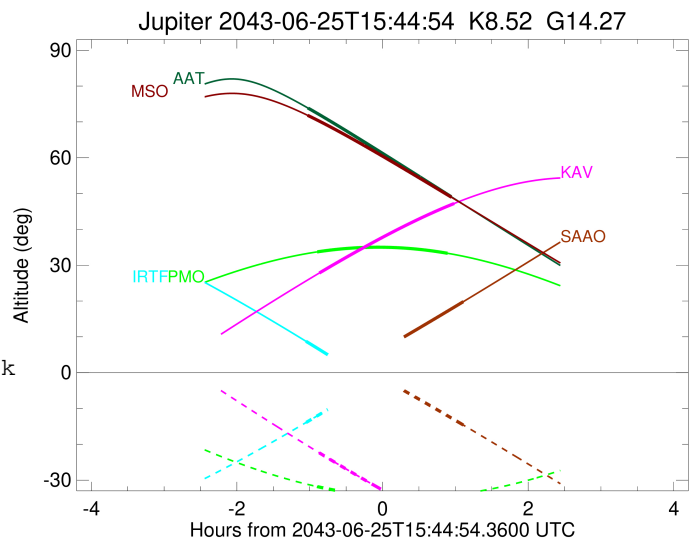
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	JUN 25 14:51 - JUN 25 16:38	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	+	JUN 25 14:42 - JUN 25 14:42	Pin
KAV	Kavalur Observatory	12.6	78.8	+ +	JUN 25 14:52 - JUN 25 16:43	Pie
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	+ +	JUN 25 14:43 - JUN 25 16:41	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	JUN 25 16:51 - JUN 25 16:51	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUN 25 14:43 - JUN 25 16:41	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-25T15:44:48.700
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       : 4068869394265357696
2Mass ID (if available) : 17484022-2304287
ICRS Star Coord at Epoch: 17h 48m 40.19332s -23:04:28.88968s
RUWE (>1.4 is poor) : 0.87
K magnitude           : 8.519
G magnitude           : 14.267
RP magnitude          : 12.811
BP magnitude          : 16.945
DUPflag              : 0
Distance (au)        : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 173.98
Sun-Moon sep (deg)   : 41.86
B (ring opening deg) : -2.43
PA of pole (deg)     : 0.38
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 15.337
C/A sky separation (km): 47305.1
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
    
```

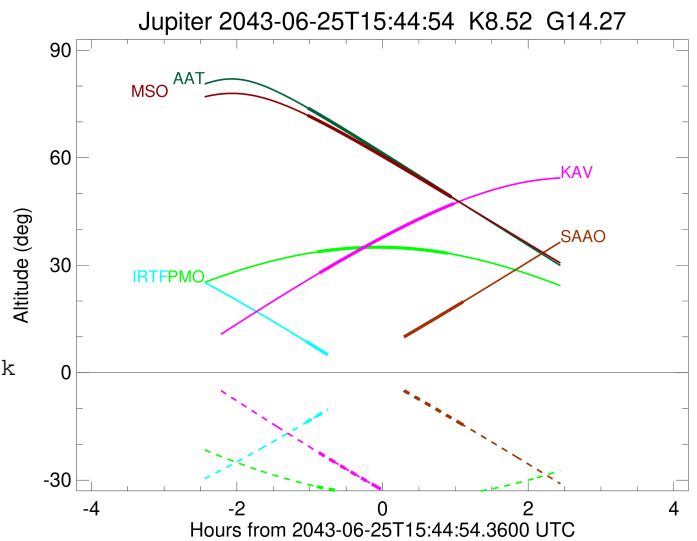
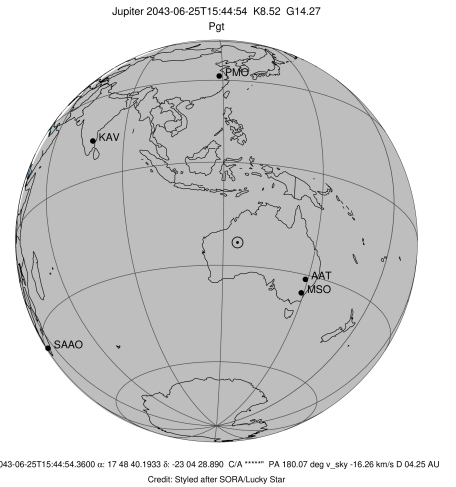


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T14:51:07.387	33.72	-31.80	71488.5	41.02	44.73
Jupiter	E	2043-06-25T16:38:30.662	33.32	-34.24	71488.5	41.63	45.35

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-25T15:39:14.450
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       : 4068869394265357696
2Mass ID (if available) : 17484022-2304287
ICRS Star Coord at Epoch: 17h 48m 40.19332s -23:04:28.88968s
RUWE (>1.4 is poor) : 0.87
K magnitude           : 8.519
G magnitude           : 14.267
RP magnitude          : 12.811
BP magnitude          : 16.945
DUPflag              : 0
Distance (au)        : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 173.98
Sun-Moon sep (deg)   : 40.75
B (ring opening deg) : -2.43
PA of pole (deg)     : 0.38
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 14.345
C/A sky separation (km) : 44244.0
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
    
```

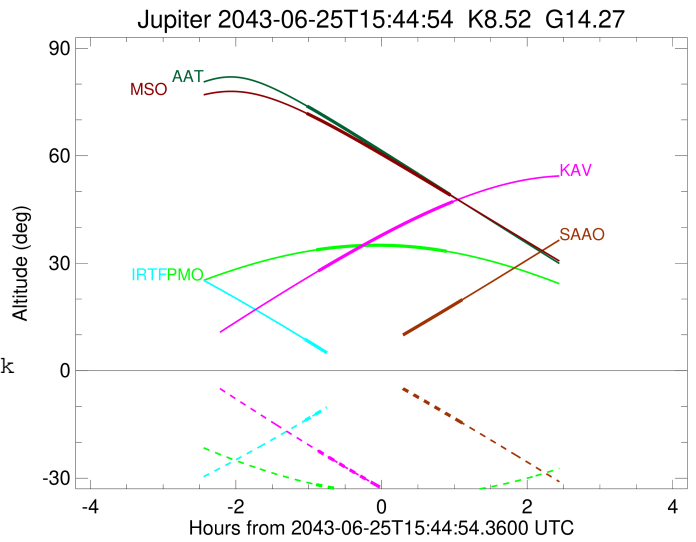
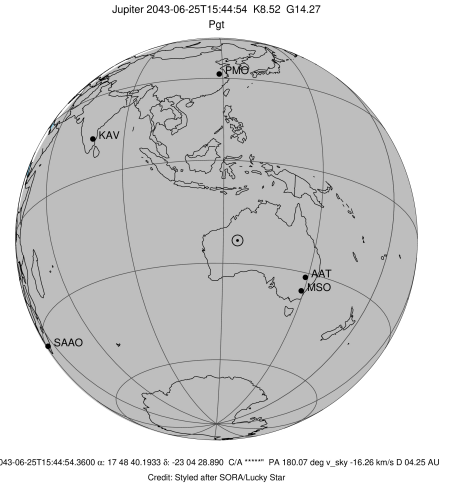


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T14:42:00.274	8.73	-13.89	71488.9	38.46	42.15
Jupiter	E	2043-06-25T16:36:51.518	-16.11x	10.37x	71489.0	37.91	41.59

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-25T15:48:32.020
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      : 4068869394265357696
2Mass ID (if available) : 17484022-2304287
ICRS Star Coord at Epoch: 17h 48m 40.19332s -23:04:28.88968s
RUWE (>1.4 is poor) : 0.87
K magnitude          : 8.519
G magnitude          : 14.267
RP magnitude         : 12.811
BP magnitude         : 16.945
DUPflag             : 0
Distance (au)       : 4.253
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 173.98
Sun-Moon sep (deg)  : 42.28
B (ring opening deg) : -2.43
PA of pole (deg)    : 0.38
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 14.684
C/A sky separation (km) : 45290.3
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
    
```

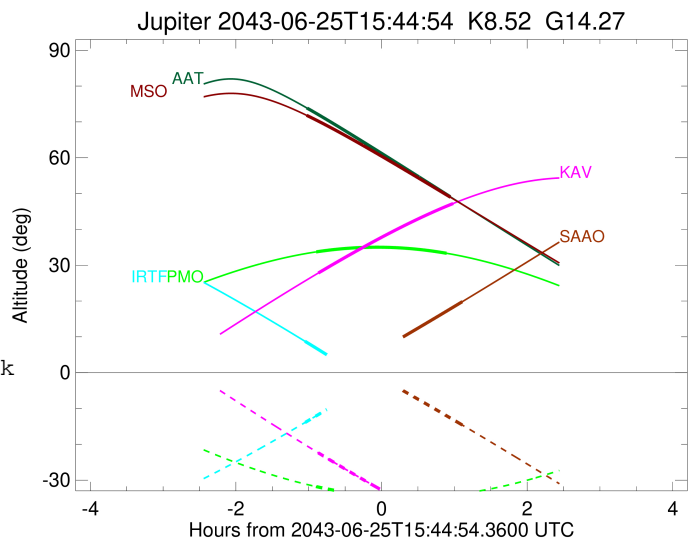
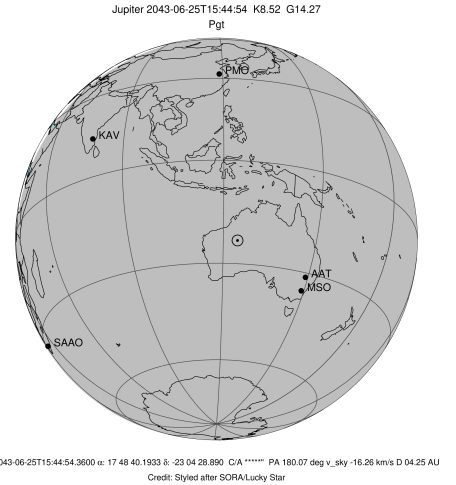


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T14:52:53.971	27.82	-22.40	71488.9	38.52	42.21
Jupiter	E	2043-06-25T16:43:57.232	47.22	-43.13	71488.7	39.90	43.60

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-25T15:42:16.450
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        : 4068869394265357696
2Mass ID (if available) : 17484022-2304287
ICRS Star Coord at Epoch: 17h 48m 40.19332s -23:04:28.88968s
RUWE (>1.4 is poor)  : 0.87
K magnitude           : 8.519
G magnitude           : 14.267
RP magnitude          : 12.811
BP magnitude          : 16.945
DUPflag              : 0
Distance (au)         : 4.253
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg)  : 173.98
Sun-Moon sep (deg)    : 41.65
B (ring opening deg)  : -2.43
PA of pole (deg)      : 0.38
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 13.258
C/A sky separation (km) : 40892.3
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
    
```

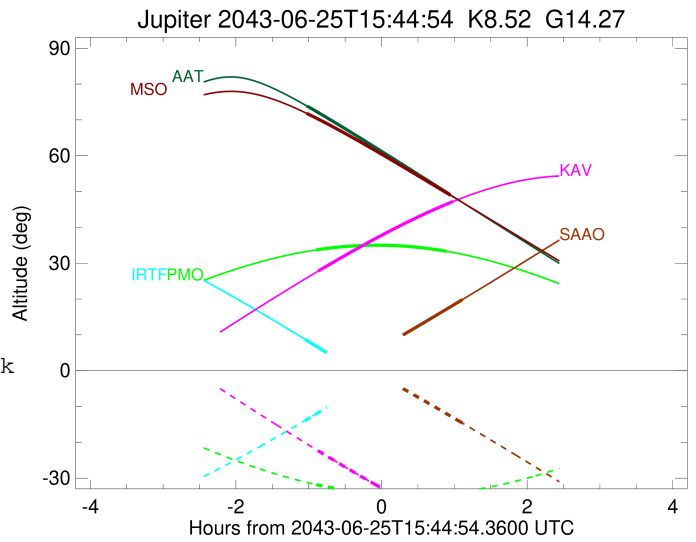
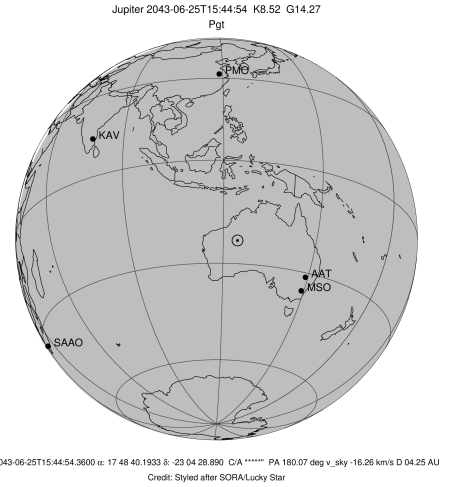


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T14:43:27.279	73.87	-78.71	71489.4	34.75	38.34
Jupiter	E	2043-06-25T16:41:16.831	49.16	-54.90	71489.4	34.84	38.43

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-25T15:50:02.440
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      : 4068869394265357696
2Mass ID (if available) : 17484022-2304287
ICRS Star Coord at Epoch: 17h 48m 40.19332s -23:04:28.88968s
RUWE (>1.4 is poor) : 0.87
K magnitude          : 8.519
G magnitude          : 14.267
RP magnitude         : 12.811
BP magnitude         : 16.945
DUPflag             : 0
Distance (au)       : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 173.98
Sun-Moon sep (deg)  : 42.03
B (ring opening deg) : -2.43
PA of pole (deg)    : 0.38
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 12.569
C/A sky separation (km) : 38768.5
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
    
```

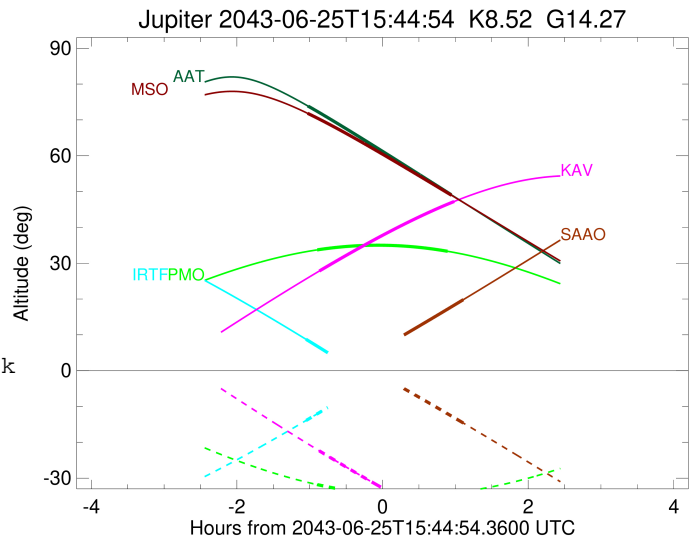
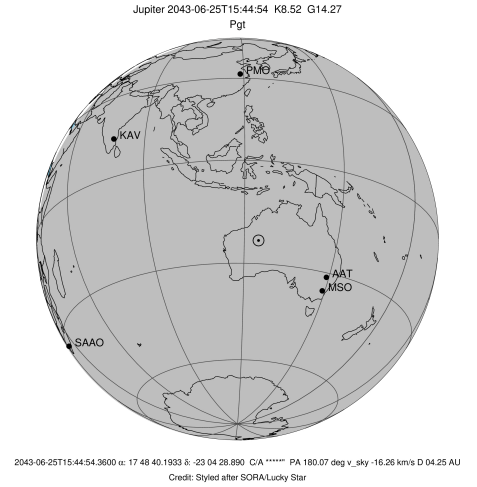


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-25T14:48:08.905	-4.24x	8.68x	71489.8	31.96	35.43
Jupiter	E	2043-06-25T16:51:33.038	19.83	-14.63	71489.5	33.66	37.21

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-25T15:42:23.700
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      : 4068869394265357696
2Mass ID (if available) : 17484022-2304287
ICRS Star Coord at Epoch: 17h 48m 40.19332s -23:04:28.88968s
RUWE (>1.4 is poor) : 0.87
K magnitude          : 8.519
G magnitude          : 14.267
RP magnitude         : 12.811
BP magnitude         : 16.945
DUPflag             : 0
Distance (au)       : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.26
Sun-Target sep (deg) : 173.98
Sun-Moon sep (deg)  : 41.65
B (ring opening deg) : -2.43
PA of pole (deg)    : 0.38
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (" ) : 13.119
C/A sky separation (km) : 40465.4
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	2043-06-25T14:43:13.404	71.83	-75.80	71489.4	34.32	37.90
Jupiter	E	2043-06-25T16:41:44.846	48.96	-54.44	71489.4	34.44	38.01