

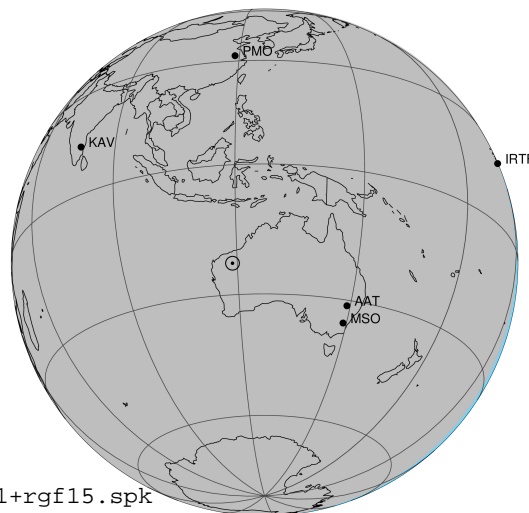
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-06-08T16:03:44.780
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116786214040996224
 2Mass ID (if available) : 17361157-2250446

Jupiter 2031-06-08T16:03:44 K8.53 G13.54 Pgt

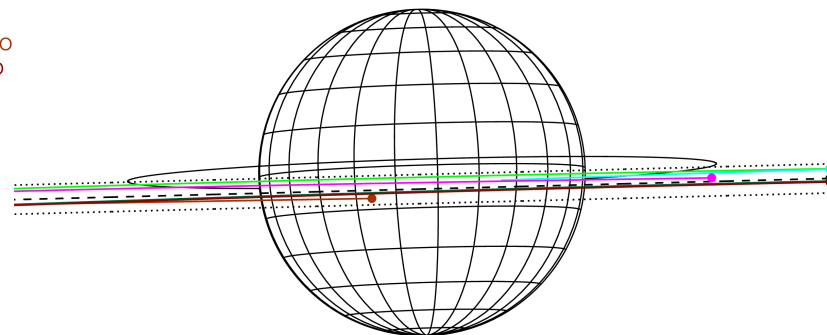
ICRS Star Coord at Epoch: 17h 36m 11.57566s -22:50:44.65198s

RUWE (>1.4 is poor) : 0.76
 K magnitude : 8.528
 G magnitude : 13.541
 RP magnitude : 12.247
 BP magnitude : 15.481
 DUPflag : 0
 Distance (au) : 4.274
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.21
 Sun-Target sep (deg) : 172.72
 Sun-Moon sep (deg) : 37.54
 B (ring opening deg) : -2.60
 PA of pole (deg) : 1.73
 Pole direction: RA (deg): 268.05692
 Dec (deg): 64.49651
 C/A sky separation (") : 2.336
 C/A sky separation (km) : 7243.2
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-06-08T16:03:44 K8.53 G13.54
 Pgt



Earth
 PMO
 IRTF
 KAV
 AAT
 SAAO
 MSO



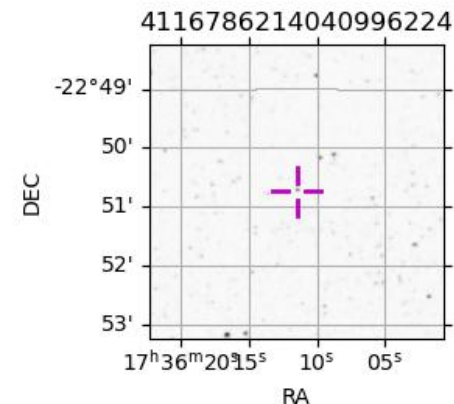
2031-06-08T16:03:44.7800 a: 17 36 11.5757 δ: -22 50 44.652 C/A 2.349° PA 1.49 deg v_sky -16.21 km/s D 04.27 AU

Credit: Styled after SORA/Lucky Star

URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

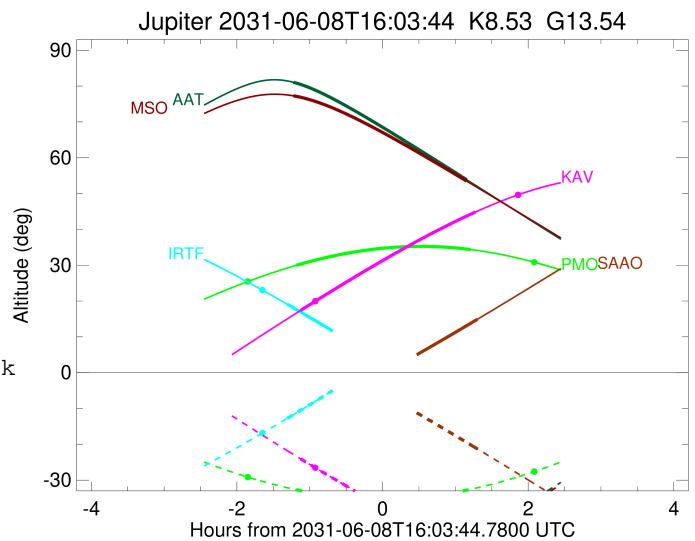
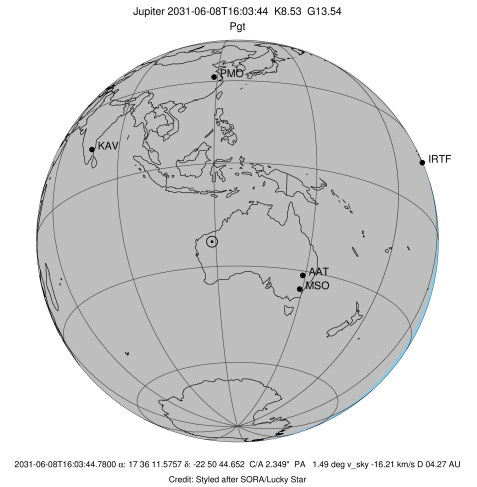
Observable events with sun below -5 deg and altitude above 5 deg

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 08 14:52 - JUN 08 17:16	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 08 14:45 - JUN 08 14:45	Pin
KAV	Kavalur Observatory	12.6	78.8	+ +	JUN 08 14:56 - JUN 08 17:20	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 08 14:50 - JUN 08 17:13	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	JUN 08 17:21 - JUN 08 17:21	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUN 08 14:50 - JUN 08 17:13	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-06-08T16:04:36.970
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        : 4116786214040996224
2Mass ID (if available) : 17361157-2250446
ICRS Star Coord at Epoch: 17h 36m 11.57566s -22:50:44.65198s
RUWE (>1.4 is poor) : 0.76
K magnitude           : 8.528
G magnitude           : 13.541
RP magnitude          : 12.247
BP magnitude          : 15.481
DUPflag              : 0
Distance (au)         : 4.274
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.21
Sun-Target sep (deg)  : 172.72
Sun-Moon sep (deg)    : 37.94
B (ring opening deg)  : -2.60
PA of pole (deg)      : 1.73
Pole direction: RA (deg): 268.05692
Dec (deg): 64.49651
C/A sky separation (") : 0.670
C/A sky separation (km) : 2075.5
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
    
```

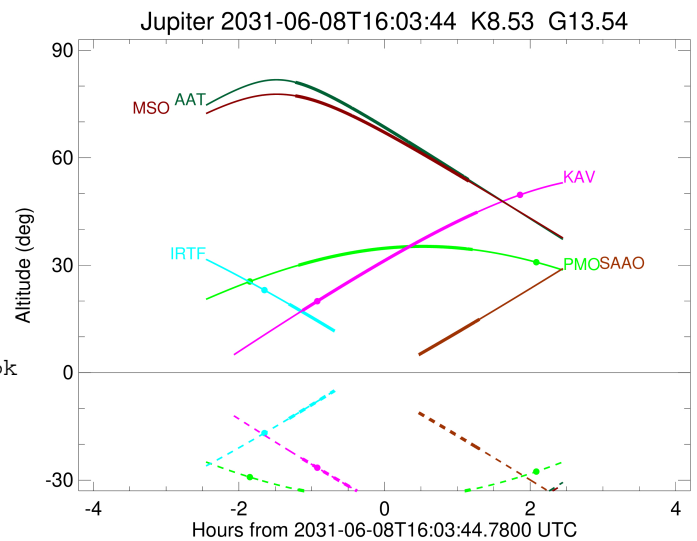
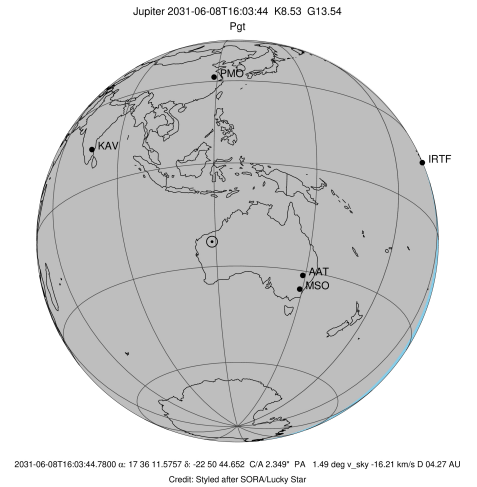


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-06-08T14:52:47.926	29.97	-32.68	71492.0	-2.08	-2.38
Jupiter	E	2031-06-08T17:16:20.635	34.37	-32.56	71492.0	-1.41	-1.61

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-06-08T15:57:45.620
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       : 4116786214040996224
2Mass ID (if available) : 17361157-2250446
ICRS Star Coord at Epoch: 17h 36m 11.57566s -22:50:44.65198s
RUWE (>1.4 is poor) : 0.76
K magnitude           : 8.528
G magnitude           : 13.541
RP magnitude         : 12.247
BP magnitude         : 15.481
DUPflag              : 0
Distance (au)        : 4.274
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.21
Sun-Target sep (deg) : 172.72
Sun-Moon sep (deg)   : 36.81
B (ring opening deg) : -2.60
PA of pole (deg)     : 1.73
Pole direction: RA (deg): 268.05692
Dec (deg): 64.49651
C/A sky separation (") : 1.476
C/A sky separation (km) : 4576.7
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
    
```

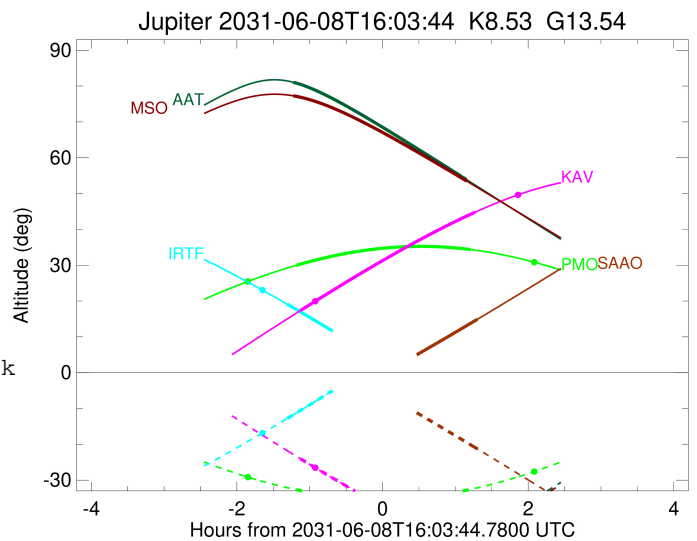
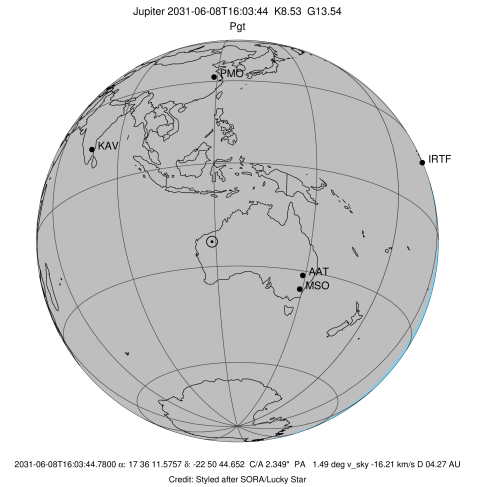


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-06-08T14:45:10.472	19.12	-12.78	71492.0	-3.37	-3.86
Jupiter	E	2031-06-08T17:10:55.902	-11.60x	18.57x	71492.0	-4.02	-4.60

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-06-08T16:08:30.670
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      : 4116786214040996224
2Mass ID (if available) : 17361157-2250446
ICRS Star Coord at Epoch: 17h 36m 11.57566s -22:50:44.65198s
RUWE (>1.4 is poor) : 0.76
K magnitude          : 8.528
G magnitude          : 13.541
RP magnitude         : 12.247
BP magnitude         : 15.481
DUPflag             : 0
Distance (au)       : 4.274
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.21
Sun-Target sep (deg) : 172.72
Sun-Moon sep (deg)  : 38.41
B (ring opening deg) : -2.60
PA of pole (deg)    : 1.73
Pole direction: RA (deg): 268.05692
Dec (deg): 64.49651
C/A sky separation (") : 1.425
C/A sky separation (km) : 4416.7
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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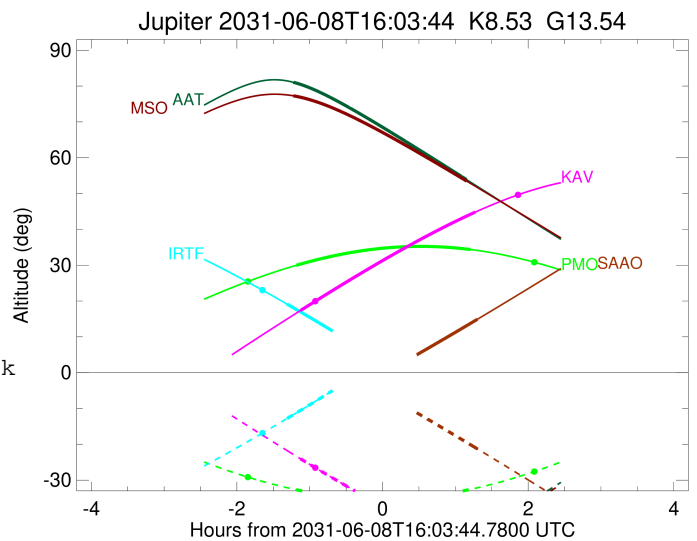
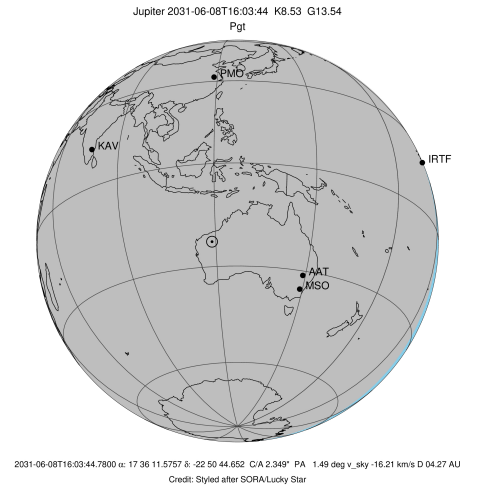


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-06-08T14:56:15.859	17.37	-24.06	71491.9	-4.30	-4.92
Jupiter	E	2031-06-08T17:20:17.380	44.83	-49.16	71492.0	-2.90	-3.32

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-06-08T16:01:36.850
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        : 4116786214040996224
2Mass ID (if available) : 17361157-2250446
ICRS Star Coord at Epoch: 17h 36m 11.57566s -22:50:44.65198s
RUWE (>1.4 is poor) : 0.76
K magnitude           : 8.528
G magnitude           : 13.541
RP magnitude          : 12.247
BP magnitude          : 15.481
DUPflag              : 0
Distance (au)         : 4.274
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.21
Sun-Target sep (deg) : 172.72
Sun-Moon sep (deg)   : 37.87
B (ring opening deg) : -2.60
PA of pole (deg)     : 1.73
Pole direction: RA (deg): 268.05692
Dec (deg): 64.49651
C/A sky separation (") : 2.665
C/A sky separation (km) : 8262.6
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
    
```

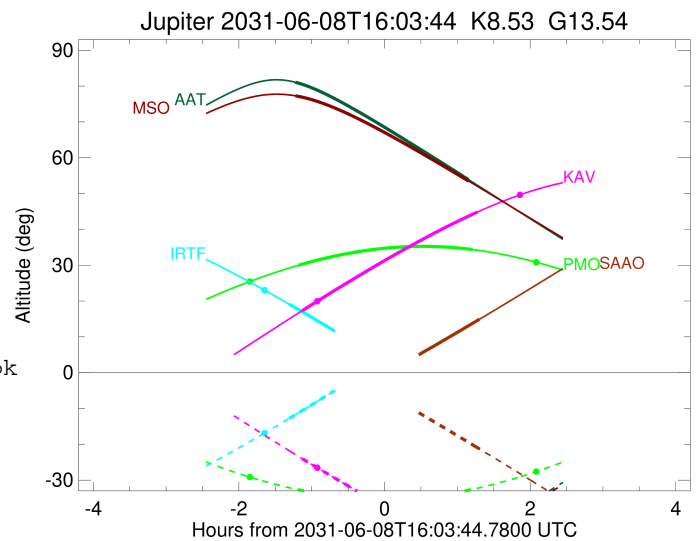
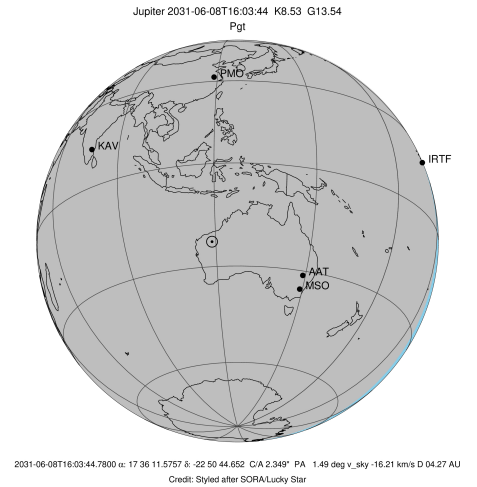


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-06-08T14:50:18.420	81.05	-76.60	71491.9	-6.78	-7.74
Jupiter	E	2031-06-08T17:13:06.017	53.86	-47.15	71491.9	-6.64	-7.58

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-06-08T16:09:07.730
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        : 4116786214040996224
2Mass ID (if available) : 17361157-2250446
ICRS Star Coord at Epoch: 17h 36m 11.57566s -22:50:44.65198s
RUWE (>1.4 is poor) : 0.76
K magnitude           : 8.528
G magnitude           : 13.541
RP magnitude          : 12.247
BP magnitude          : 15.481
DUPflag              : 0
Distance (au)         : 4.274
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.21
Sun-Target sep (deg)  : 172.72
Sun-Moon sep (deg)    : 38.22
B (ring opening deg)  : -2.60
PA of pole (deg)      : 1.73
Pole direction: RA (deg): 268.05692
Dec (deg): 64.49651
C/A sky separation (") : 3.554
C/A sky separation (km) : 11018.5
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
    
```

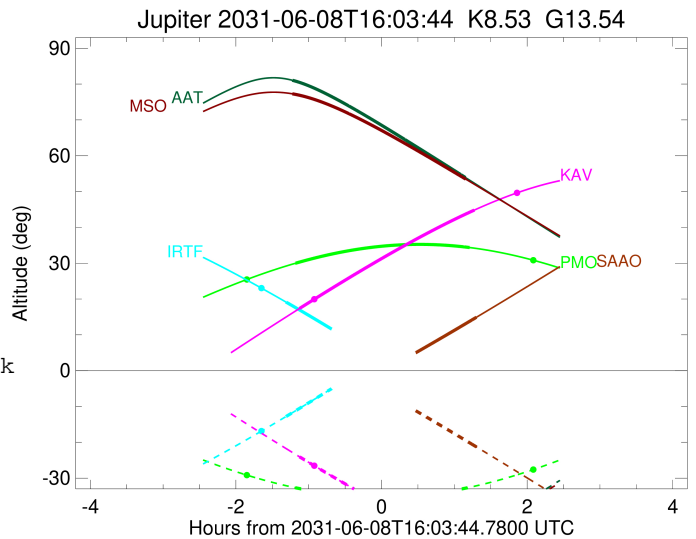
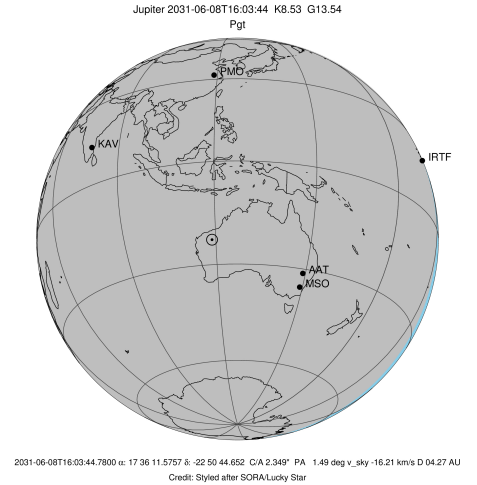


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-06-08T14:55:45.667	-12.55x	7.05x	71491.7	-9.58	-10.92
Jupiter	E	2031-06-08T17:21:55.887	14.90	-21.27	71491.8	-8.09	-9.23

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-06-08T16:01:42.070
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       : 4116786214040996224
2Mass ID (if available) : 17361157-2250446
ICRS Star Coord at Epoch: 17h 36m 11.57566s -22:50:44.65198s
RUWE (>1.4 is poor) : 0.76
K magnitude           : 8.528
G magnitude           : 13.541
RP magnitude         : 12.247
BP magnitude         : 15.481
DUPflag              : 0
Distance (au)        : 4.274
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.21
Sun-Target sep (deg) : 172.72
Sun-Moon sep (deg)   : 37.89
B (ring opening deg) : -2.60
PA of pole (deg)     : 1.73
Pole direction: RA (deg): 268.05692
Dec (deg): 64.49651
C/A sky separation (") : 2.806
C/A sky separation (km) : 8698.2
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	2031-06-08T14:50:22.286	77.27	-73.97	71491.9	-7.14	-8.15
Jupiter	E	2031-06-08T17:13:12.066	53.46	-47.09	71491.9	-6.98	-7.97