

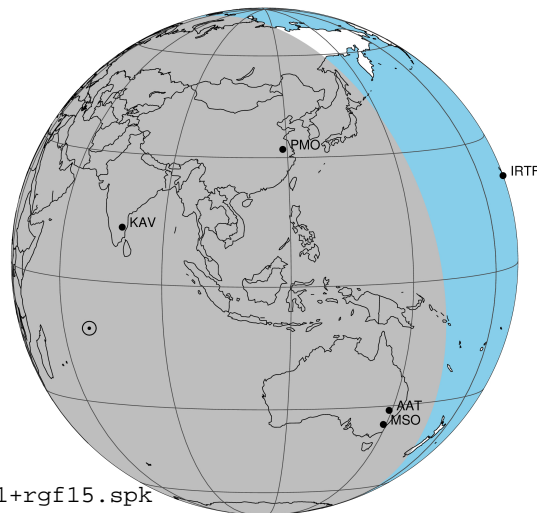
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2046-08-23T19:25:54.570  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 2576175608103715712  
 2Mass ID (if available) : 01083189+0537235

Jupiter 2046-08-23T19:25:54 K8.89 G10.70 Pgt

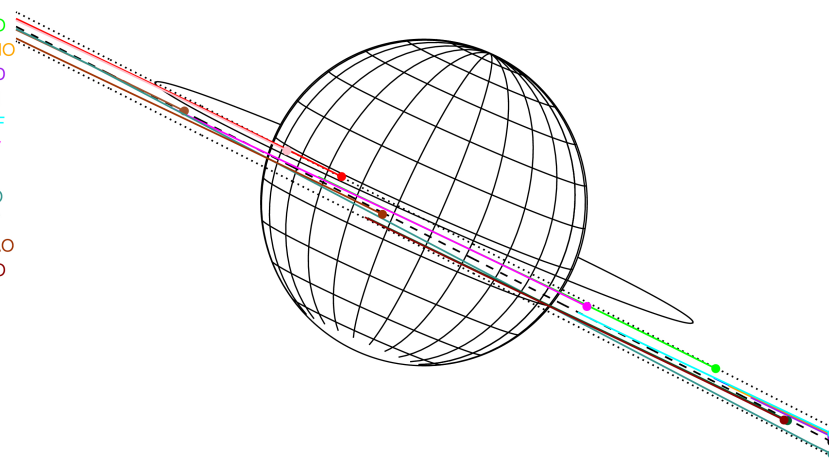
ICRS Star Coord at Epoch: 01h 08m 31.79093s +05:37:17.84594s

RUWE (>1.4 is poor) : 1.00  
 K magnitude : 8.891  
 G magnitude : 10.703  
 RP magnitude : 10.096  
 BP magnitude : 11.149  
 DUPflag : 0  
 Distance (au) : 4.218  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -6.53  
 Sun-Target sep (deg) : 132.23  
 Sun-Moon sep (deg) : 31.91  
 B (ring opening deg) : 2.96  
 PA of pole (deg) : -24.05  
 Pole direction: RA (deg): 268.05713  
 Dec (deg): 64.49722  
 C/A sky separation (") : 3.985  
 C/A sky separation (km) : 12190.5  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2046-08-23T19:25:54 K8.89 G10.70 Pgt



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

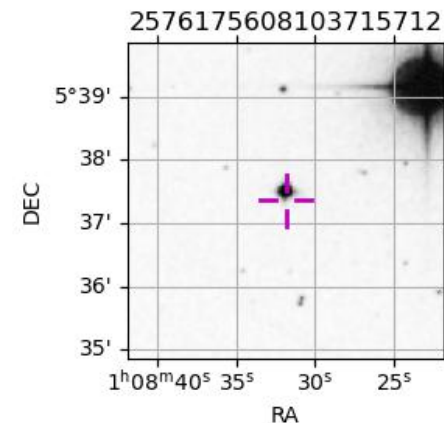


2046-08-23T19:25:54.5700 or: 01 08 31.7909 s; +05 37 17.846 C/A 3.976" PA 333.03 deg v\_sky - 6.53 km/s D 04.22 AU

Credit: Styled after SORA/Lucky Star

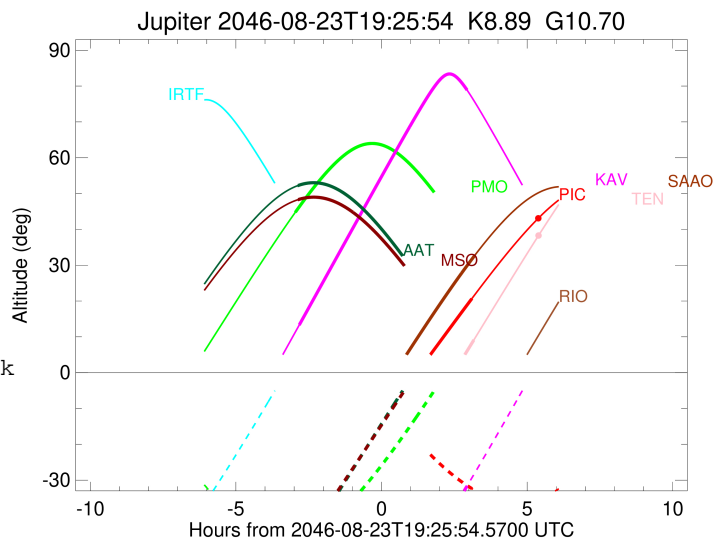
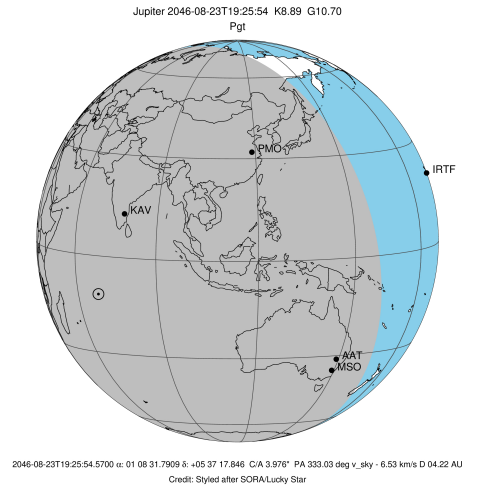
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+	AUG 23 22:32 - AUG 23 22:32	Pne
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	AUG 23 16:28 - AUG 23 16:28	Pin
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	+	AUG 23 22:36 - AUG 23 22:36	Pne
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	AUG 23 16:36 - AUG 23 22:22	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	+	AUG 23 16:33 - AUG 23 16:33	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	AUG 23 22:37 - AUG 23 22:37	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	AUG 23 16:33 - AUG 23 16:33	Pin



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-08-23T19:30:38.150
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PIC
Location              : Pic du Midi
Latitude (deg)        : 42.93656
E. Longitude (deg)    : 0.14231
Altitude (km)         : 2.890
Gaia source ID        : 2576175608103715712
2Mass ID (if available) : 01083189+0537235
ICRS Star Coord at Epoch: 01h 08m 31.79093s +05:37:17.84594s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 8.891
G magnitude           : 10.703
RP magnitude          : 10.096
BP magnitude          : 11.149
DUPflag              : 0
Distance (au)         : 4.218
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -6.53
Sun-Target sep (deg) : 132.23
Sun-Moon sep (deg)   : 31.94
B (ring opening deg) : 2.96
PA of pole (deg)     : -24.05
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation (") : 2.039
C/A sky separation (km) : 6236.5
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
    
```

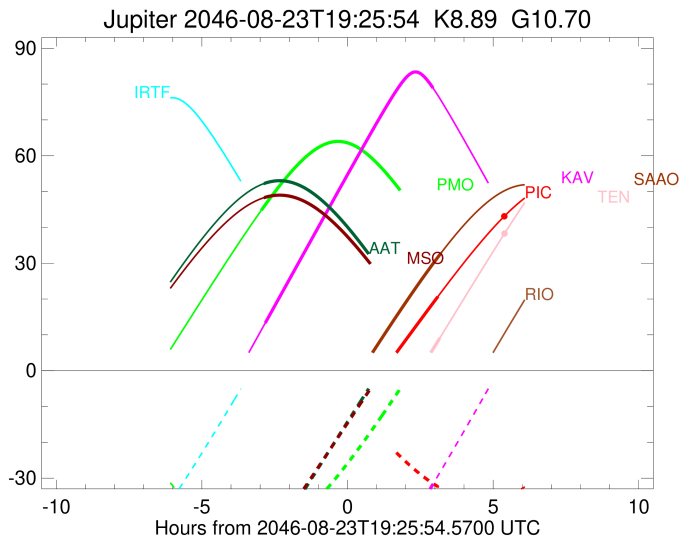
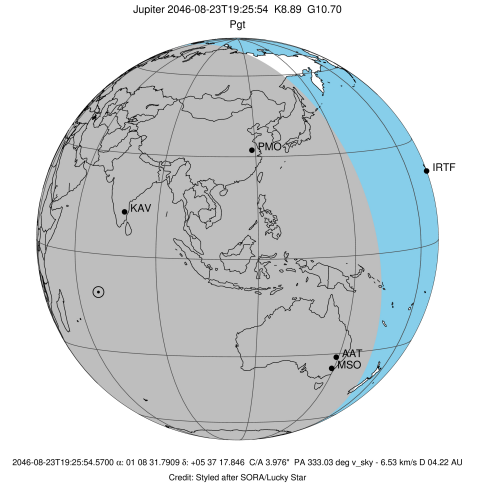


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-08-23T16:21:47.996	-38.10x	25.89x	71491.7	-8.74	-9.97
Jupiter	E	2046-08-23T22:32:03.175	20.67	-32.35	71492.0	-2.36	-2.70

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-08-23T19:21:14.810
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       : 2576175608103715712
2Mass ID (if available) : 01083189+0537235
ICRS Star Coord at Epoch: 01h 08m 31.79093s +05:37:17.84595s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 8.891
G magnitude           : 10.703
RP magnitude          : 10.096
BP magnitude          : 11.149
DUPflag              : 0
Distance (au)        : 4.218
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -6.53
Sun-Target sep (deg) : 132.23
Sun-Moon sep (deg)   : 32.11
B (ring opening deg) : 2.96
PA of pole (deg)     : -24.05
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation (") : 3.222
C/A sky separation (km) : 9856.3
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
    
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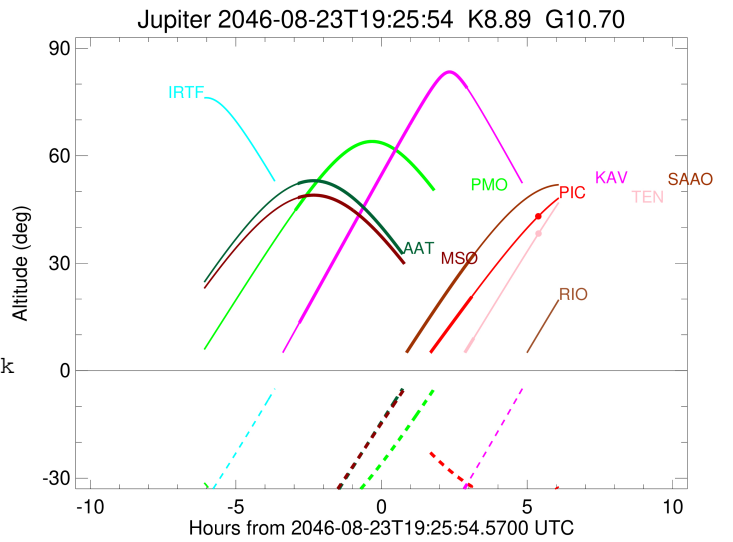
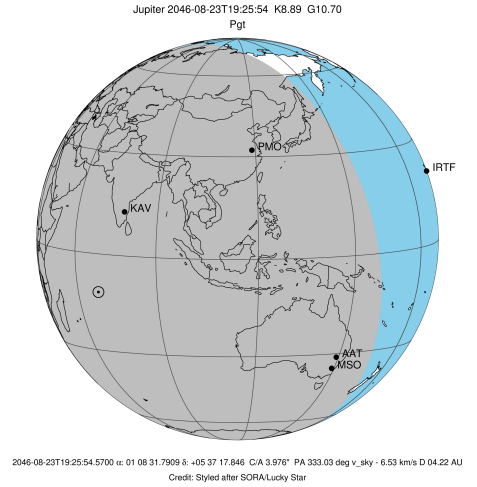


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-08-23T16:28:23.616	44.77	-46.60	71491.7	-9.38	-10.69
Jupiter	E	2046-08-23T22:13:10.539	39.23	7.12x	71491.9	-6.20	-7.08

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch              : 2046-08-23T19:32:15.560
Event type             : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : TEN
Location              : Teide Obs./Tenerife
Latitude (deg)        : 28.30050
E. Longitude (deg)    : 343.48909
Altitude (km)         : 2.395
Gaia source ID        : 2576175608103715712
2Mass ID (if available) : 01083189+0537235
ICRS Star Coord at Epoch: 01h 08m 31.79093s +05:37:17.84594s
RUWE (>1.4 is poor)  : 1.00
K magnitude           : 8.891
G magnitude           : 10.703
RP magnitude          : 10.096
BP magnitude          : 11.149
DUPflag              : 0
Distance (au)         : 4.218
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -6.53
Sun-Target sep (deg)  : 132.23
Sun-Moon sep (deg)    : 31.87
B (ring opening deg)  : 2.96
PA of pole (deg)      : -24.05
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation (") : 2.361
C/A sky separation (km) : 7222.3
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
    
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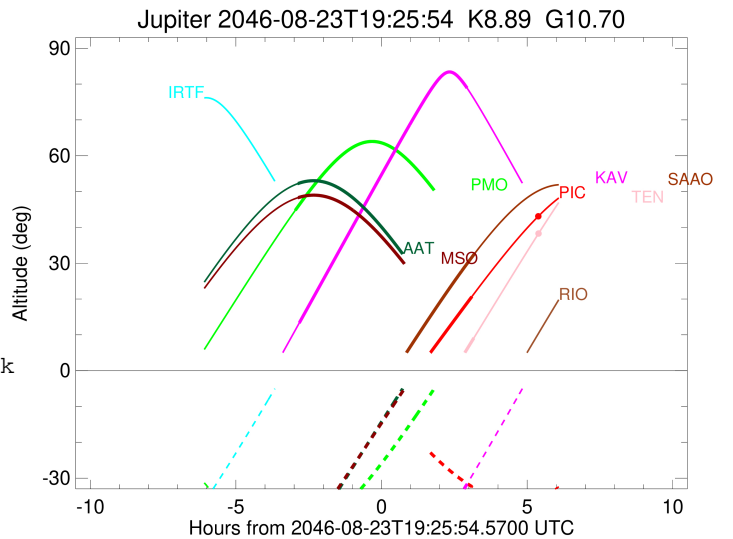
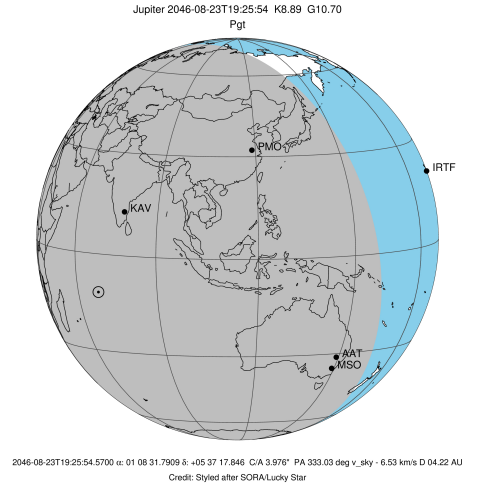


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-08-23T16:20:41.124	-55.86x	42.06x	71491.6	-10.07	-11.47
Jupiter	E	2046-08-23T22:36:09.943	9.12	-36.18	71492.0	-2.76	-3.16

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-08-23T19:32:04.140
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        : 2576175608103715712
2Mass ID (if available) : 01083189+0537235
ICRS Star Coord at Epoch: 01h 08m 31.79093s +05:37:17.84594s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 8.891
G magnitude           : 10.703
RP magnitude          : 10.096
BP magnitude          : 11.149
DUPflag               : 0
Distance (au)         : 4.218
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -6.53
Sun-Target sep (deg) : 132.23
Sun-Moon sep (deg)   : 32.62
B (ring opening deg) : 2.96
PA of pole (deg)     : -24.05
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation (") : 3.231
C/A sky separation (km) : 9884.7
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
    
```

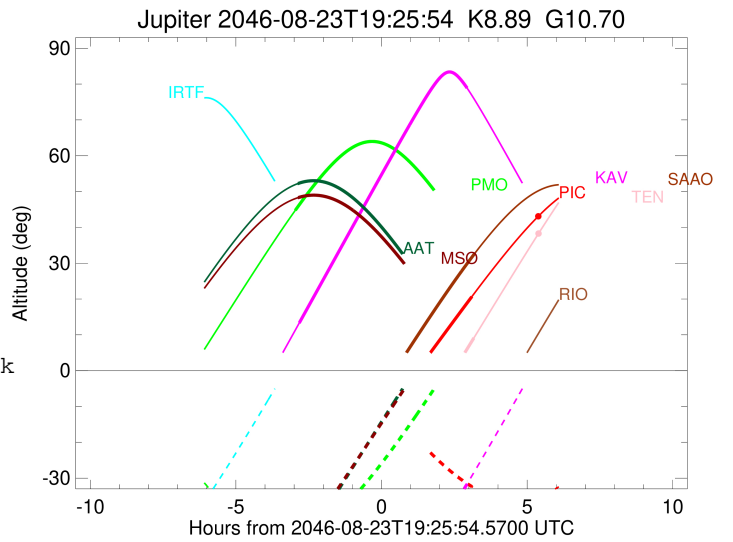
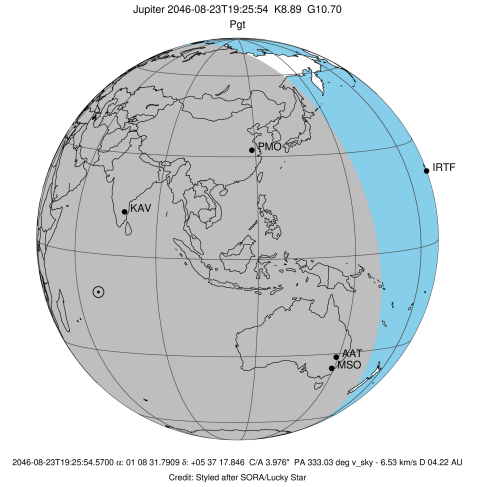


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-08-23T16:36:28.599	13.31	-49.83	71491.7	-9.63	-10.98
Jupiter	E	2046-08-23T22:22:09.788	78.89	-31.63	71491.8	-6.72	-7.67

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2046-08-23T19:22:25.650
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      : 2576175608103715712
2Mass ID (if available) : 01083189+0537235
ICRS Star Coord at Epoch: 01h 08m 31.79093s +05:37:17.84595s
RUWE (>1.4 is poor) : 1.00
K magnitude          : 8.891
G magnitude          : 10.703
RP magnitude         : 10.096
BP magnitude         : 11.149
DUPflag             : 0
Distance (au)        : 4.218
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -6.53
Sun-Target sep (deg) : 132.23
Sun-Moon sep (deg)  : 32.17
B (ring opening deg) : 2.96
PA of pole (deg)    : -24.05
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation (") : 5.529
C/A sky separation (km) : 16914.6
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
    
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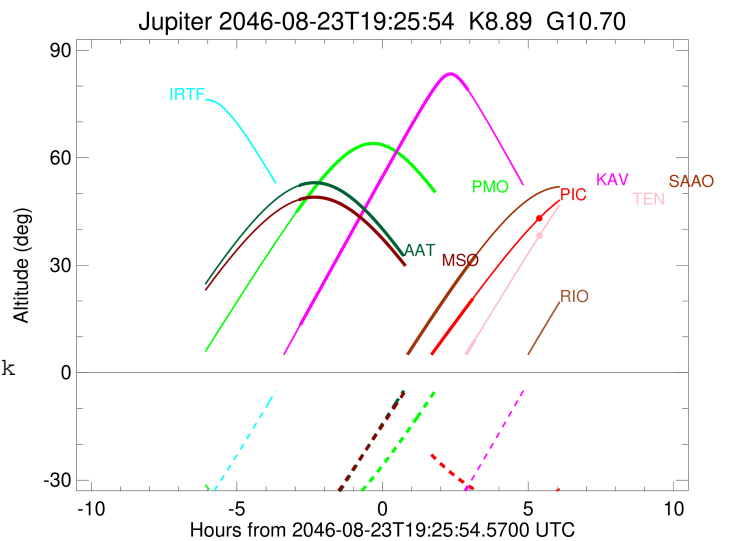
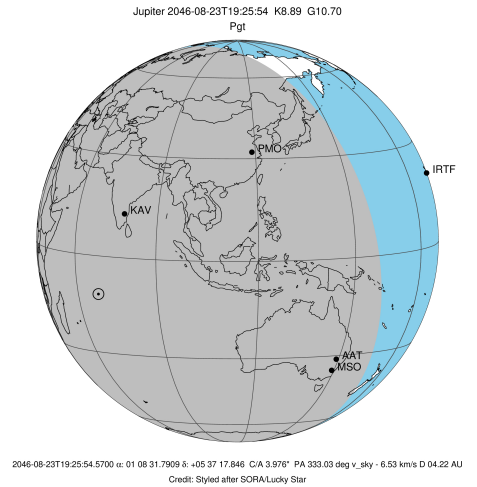


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-08-23T16:33:11.622	52.19	-50.67	71491.2	-15.25	-17.30
Jupiter	E	2046-08-23T22:14:02.745	7.77	20.19x	71491.5	-11.35	-12.92

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-08-23T19:41:54.100
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        : 2576175608103715712
2Mass ID (if available) : 01083189+0537235
ICRS Star Coord at Epoch: 01h 08m 31.79093s +05:37:17.84594s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 8.891
G magnitude           : 10.703
RP magnitude          : 10.096
BP magnitude          : 11.149
DUPflag              : 0
Distance (au)         : 4.218
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -6.53
Sun-Target sep (deg)  : 132.23
Sun-Moon sep (deg)    : 32.63
B (ring opening deg) : 2.96
PA of pole (deg)      : -24.05
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation (") : 4.175
C/A sky separation (km) : 12772.3
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
    
```



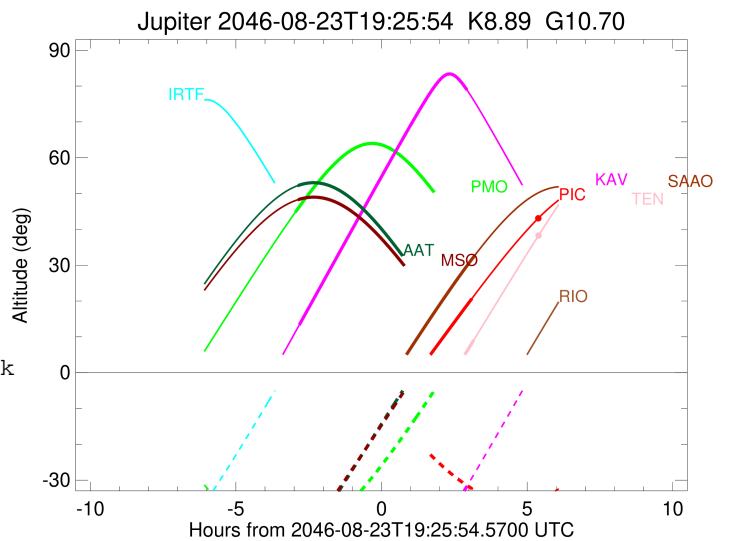
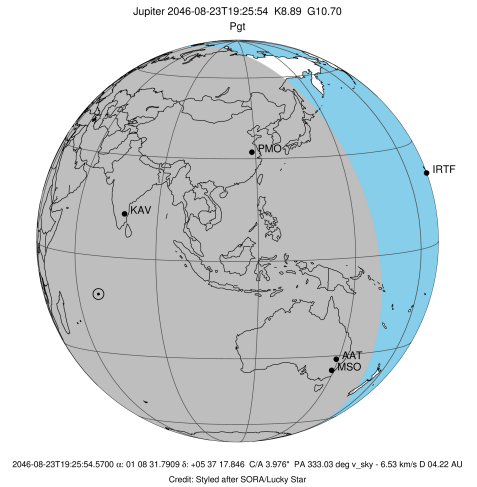
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-08-23T16:38:01.714	-40.72x	-5.70	71491.3	-13.52	-15.36
Jupiter	E	2046-08-23T22:37:19.911	32.61	-68.92	71491.8	-8.23	-9.39



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-08-23T19:23:09.150
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        : 2576175608103715712
2Mass ID (if available) : 01083189+0537235
ICRS Star Coord at Epoch: 01h 08m 31.79093s +05:37:17.84594s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 8.891
G magnitude           : 10.703
RP magnitude          : 10.096
BP magnitude          : 11.149
DUPflag              : 0
Distance (au)         : 4.218
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -6.53
Sun-Target sep (deg) : 132.23
Sun-Moon sep (deg)   : 32.20
B (ring opening deg) : 2.96
PA of pole (deg)     : -24.05
Pole direction: RA (deg): 268.05713
Dec (deg): 64.49722
C/A sky separation (") : 5.612
C/A sky separation (km) : 17168.9
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	2046-08-23T16:33:41.432	48.27	-48.95	71491.1	-15.52	-17.60
Jupiter	E	2046-08-23T22:14:51.604	6.82	18.39x	71491.5	-11.53	-13.13