

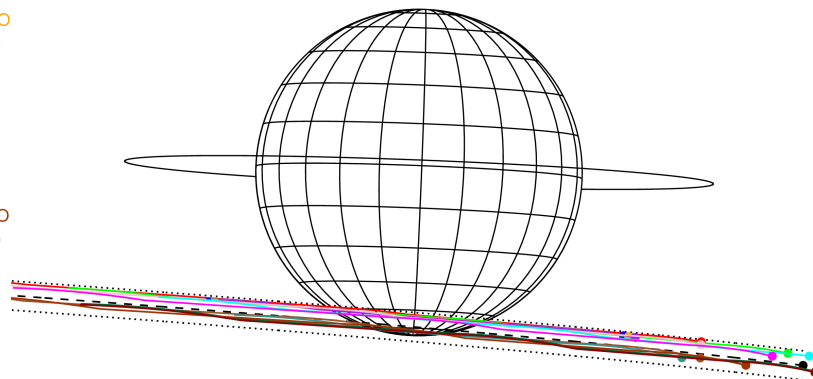
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-04-23T23:37:18.700
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4066457310595760000
 2Mass ID (if available) : 18125189-2258561

Jupiter 2043-04-23T23:37:18 K9.13 G14.86 Pgt

ICRS Star Coord at Epoch: 18h 12m 51.87522s -22:58:56.23228s
 RUWE (>1.4 is poor) : 1.22
 K magnitude : 9.128
 G magnitude : 14.856
 RP magnitude : 13.476
 BP magnitude : 17.136
 DUPflag : 0
 Distance (au) : 4.709
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -1.71
 Sun-Target sep (deg) : 120.15
 Sun-Moon sep (deg) : 63.41
 B (ring opening deg) : -2.43
 PA of pole (deg) : -2.22
 Pole direction: RA (deg): 268.05665
 Dec (deg): 64.49732
 C/A sky separation (") : 19.800
 C/A sky separation (km) : 67622.0
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



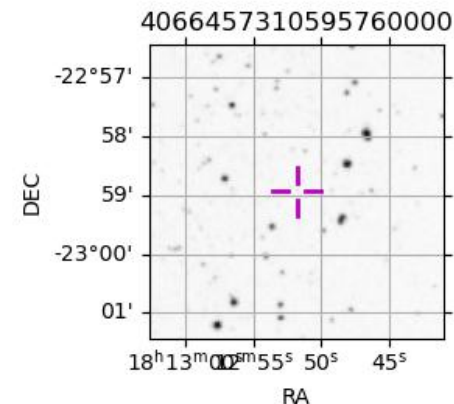
- Earth
- PIC
- PAL
- PMO
- KPNO
- MCD
- TEN
- IRTF
- KAV
- RIO
- ESO
- AAT
- SAAO
- MSO



2043-04-23T23:37:18.70000 α: 18 12 51.87522 δ: -22 58 56.23222 C/A ***** PA 355.14 deg v_sky - 1.71 km/s D 04.71 AU
 Credit: Styled after SORA/Lucky Star

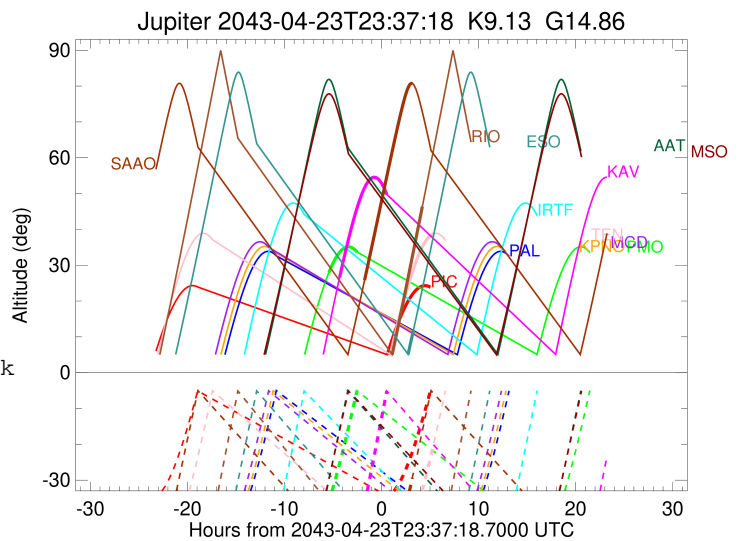
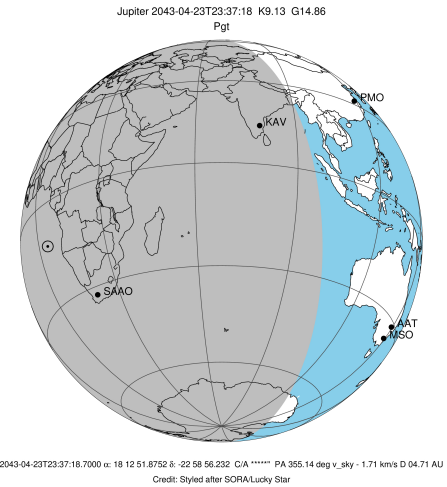
Observable events with sun below -5 deg and altitude above 5 deg

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	+	APR 23 18:12 - APR 23 18:12	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	+	APR 24 05:01 - APR 24 05:01	Pne
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+	APR 23 19:17 - APR 23 19:17	Pin
RIO	Rio de Janeiro	-22.9	316.8	+	APR 24 03:49 - APR 24 03:49	Pne
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	APR 24 02:53 - APR 24 02:53	Pne
AAT	Siding Spring (AAT)	-31.3	149.1	+	APR 23 20:08 - APR 23 20:08	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	APR 23 21:52 - APR 24 02:47	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-04-23T22:28:30.390
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        : 4066457310595760000
2Mass ID (if available) : 18125189-2258561
ICRS Star Coord at Epoch: 18h 12m 51.87522s -22:58:56.23227s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.128
G magnitude           : 14.856
RP magnitude          : 13.476
BP magnitude          : 17.136
DUPflag              : 0
Distance (au)         : 4.710
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -1.71
Sun-Target sep (deg) : 120.15
Sun-Moon sep (deg)   : 63.92
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.22
Pole direction: RA (deg): 268.05665
Dec (deg): 64.49732
C/A sky separation (") : 18.492
C/A sky separation (km) : 63163.5
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
    
```

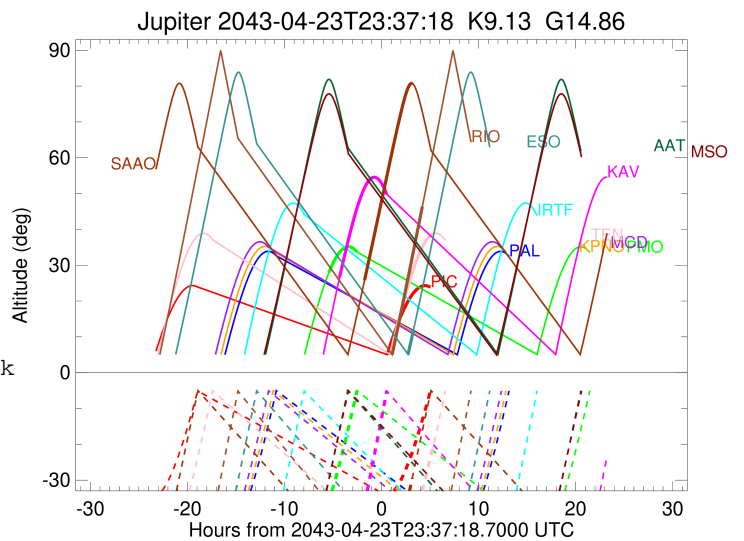
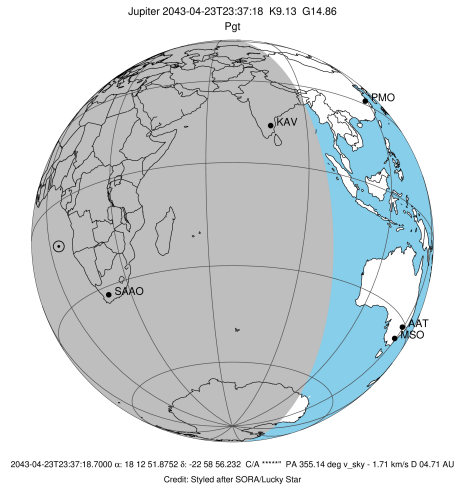


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-04-23T18:12:25.477	27.98	-35.71	71485.5	-63.55	-66.34
Jupiter	E	2043-04-24T03:17:04.450	-25.19x	68.21x	71485.5	-63.87	-66.64

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-04-24T01:01:39.300
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       : 4066457310595760000
2Mass ID (if available) : 18125189-2258561
ICRS Star Coord at Epoch: 18h 12m 51.87522s -22:58:56.23228s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.128
G magnitude           : 14.856
RP magnitude          : 13.476
BP magnitude          : 17.136
DUPflag              : 0
Distance (au)        : 4.708
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -1.71
Sun-Target sep (deg) : 120.15
Sun-Moon sep (deg)   : 62.98
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.22
Pole direction: RA (deg): 268.05665
Dec (deg): 64.49732
C/A sky separation ("): 18.613
C/A sky separation (km): 63558.7
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
    
```

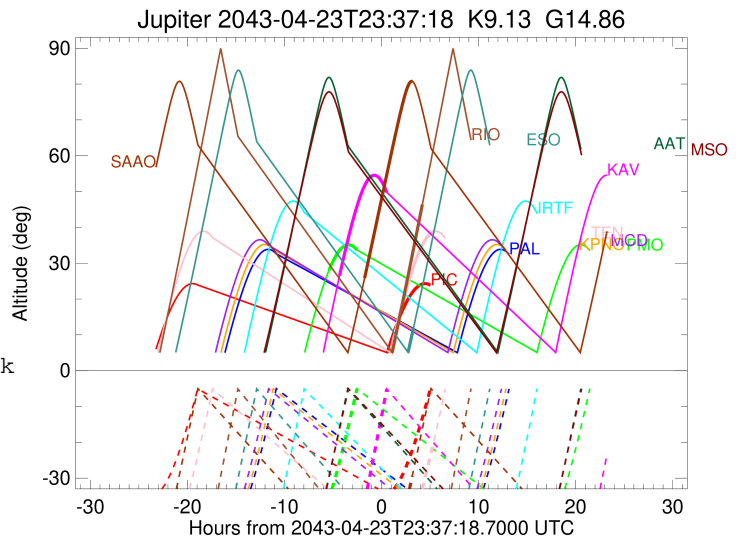
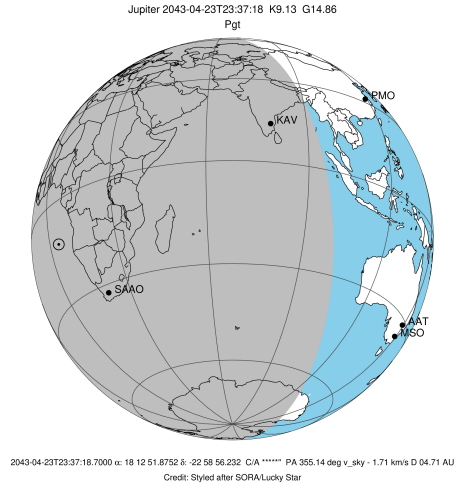


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-04-23T19:44:50.465	-55.81x	-2.75x	71484.8	-70.58	-72.74
Jupiter	E	2043-04-24T05:01:06.452	38.82	-19.58	71486.1	-58.59	-61.75

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-04-23T23:12:39.490
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      : 4066457310595760000
2Mass ID (if available) : 18125189-2258561
ICRS Star Coord at Epoch: 18h 12m 51.87522s -22:58:56.23228s
RUWE (>1.4 is poor) : 1.22
K magnitude          : 9.128
G magnitude          : 14.856
RP magnitude         : 13.476
BP magnitude         : 17.136
DUPflag             : 0
Distance (au)       : 4.709
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -1.71
Sun-Target sep (deg) : 120.15
Sun-Moon sep (deg)  : 64.14
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.22
Pole direction: RA (deg): 268.05665
Dec (deg): 64.49732
C/A sky separation (") : 18.743
C/A sky separation (km) : 64016.1
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
    
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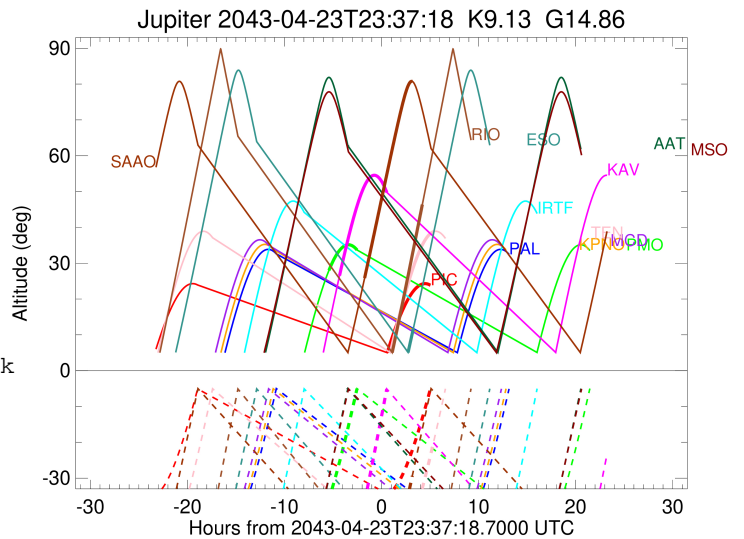
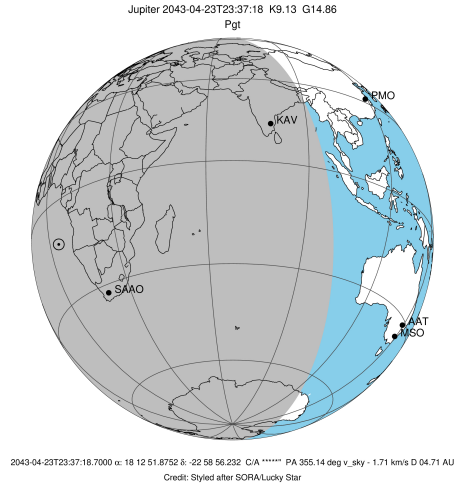


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x: target alt < 5.0 deg or sun > -5.0 deg
Target I/E UTC alt alt-sun radius lat-geo lat-geodetic
-----
Jupiter I 2043-04-23T19:17:42.047 26.47 -63.37 71485.1 -67.01 -69.51
Jupiter E 2043-04-24T03:08:40.140 17.86 37.85x 71485.4 -64.31 -67.04
    
```

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-04-24T01:32:39.820
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : RIO
Location              : Rio de Janeiro
Latitude (deg)        : -22.89506
E. Longitude (deg)    : 316.77708
Altitude (km)         : 0.033
Gaia source ID        : 4066457310595760000
2Mass ID (if available) : 18125189-2258561
ICRS Star Coord at Epoch: 18h 12m 51.87522s -22:58:56.23228s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.128
G magnitude           : 14.856
RP magnitude          : 13.476
BP magnitude          : 17.136
DUPflag              : 0
Distance (au)         : 4.708
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -1.71
Sun-Target sep (deg) : 120.15
Sun-Moon sep (deg)   : 62.92
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.22
Pole direction: RA (deg): 268.05665
Dec (deg): 64.49732
C/A sky separation (") : 20.299
C/A sky separation (km) : 69308.3
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
    
```

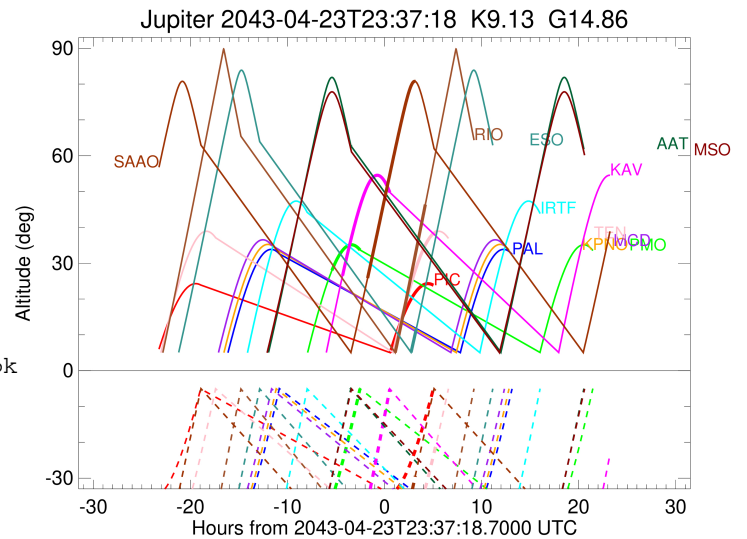
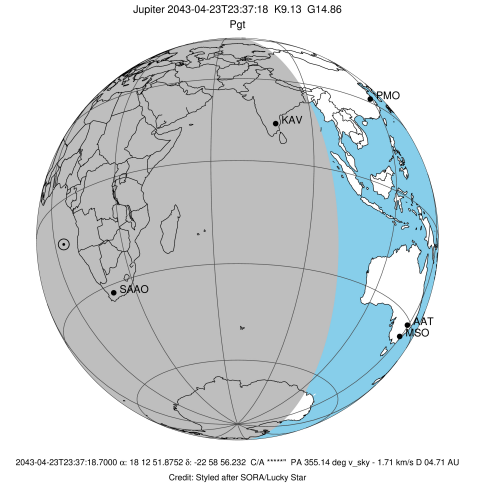


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-04-23T22:45:51.238	-18.70x	-31.14	71484.0	-83.75	-84.48
Jupiter	E	2043-04-24T03:49:46.555	46.39	-72.87	71484.9	-69.23	-71.52

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-04-24T01:37:40.870
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : ESO
Location            : European Southern Obs. (3.6m)
Latitude (deg)      : -29.26097
E. Longitude (deg)  : 289.26831
Altitude (km)       : 2.400
Gaia source ID      : 4066457310595760000
2Mass ID (if available) : 18125189-2258561
ICRS Star Coord at Epoch: 18h 12m 51.87522s -22:58:56.23228s
RUWE (>1.4 is poor) : 1.22
K magnitude          : 9.128
G magnitude          : 14.856
RP magnitude         : 13.476
BP magnitude         : 17.136
DUPflag             : 0
Distance (au)       : 4.708
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -1.71
Sun-Target sep (deg) : 120.15
Sun-Moon sep (deg)  : 62.82
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.22
Pole direction: RA (deg): 268.05665
Dec (deg): 64.49732
C/A sky separation ("): 20.797
C/A sky separation (km): 71010.6
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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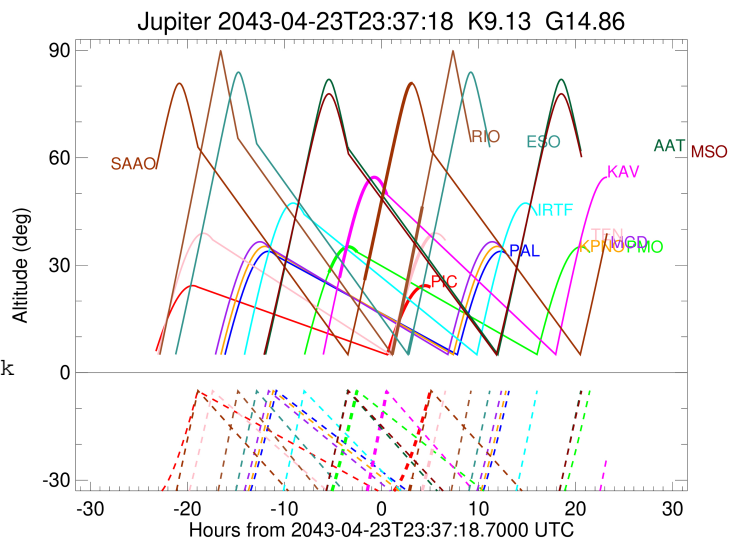
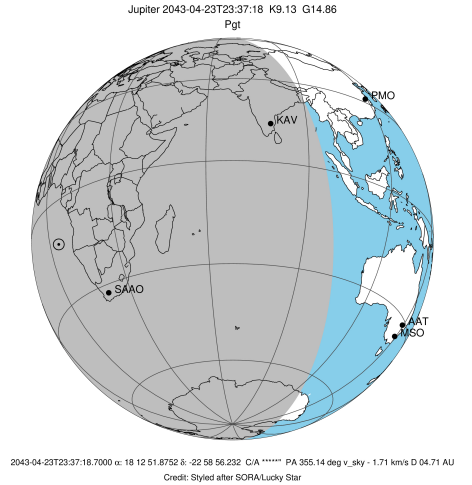


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-04-24T00:10:53.601	-19.06x	-25.64	71483.9	-87.04	-87.39
Jupiter	E	2043-04-24T02:53:58.083	11.72	-60.27	71484.4	-75.28	-76.96

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-04-23T22:00:15.140
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       : 4066457310595760000
2Mass ID (if available) : 18125189-2258561
ICRS Star Coord at Epoch: 18h 12m 51.87522s -22:58:56.23227s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.128
G magnitude           : 14.856
RP magnitude         : 13.476
BP magnitude         : 17.136
DUPflag              : 0
Distance (au)        : 4.710
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -1.71
Sun-Target sep (deg) : 120.15
Sun-Moon sep (deg)  : 63.99
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.22
Pole direction: RA (deg): 268.05665
Dec (deg): 64.49732
C/A sky separation ("): 20.527
C/A sky separation (km): 70118.1
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
    
```

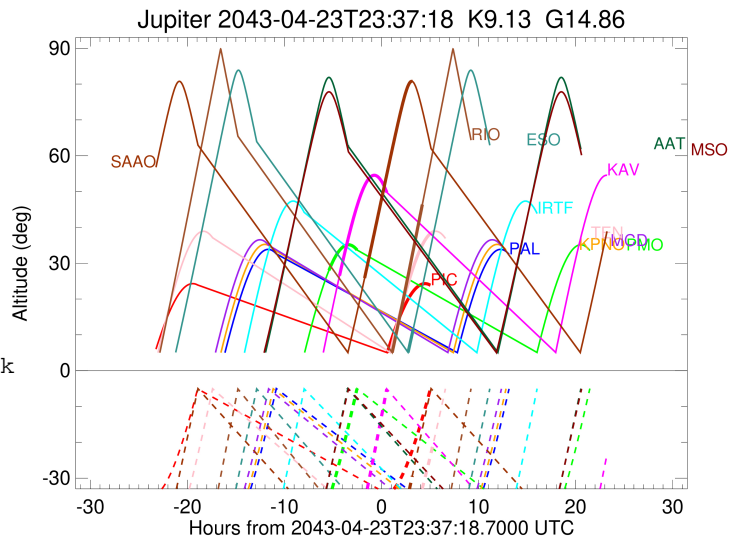
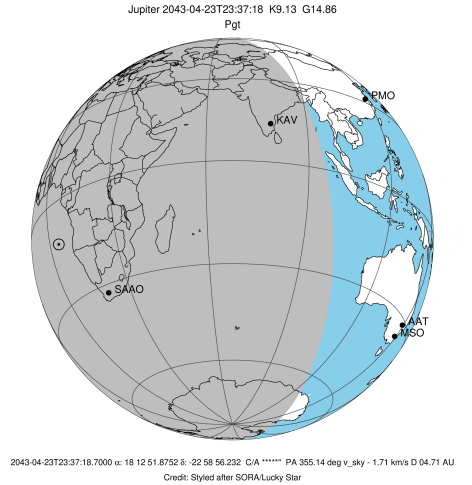


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-04-23T20:08:18.688	62.96	-5.20	71484.3	-77.40	-78.86
Jupiter	E	2043-04-24T00:03:16.475	13.27	37.70x	71484.1	-80.74	-81.83

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-04-24T00:26:27.910
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        : 4066457310595760000
2Mass ID (if available) : 18125189-2258561
ICRS Star Coord at Epoch: 18h 12m 51.87522s -22:58:56.23228s
RUWE (>1.4 is poor) : 1.22
K magnitude           : 9.128
G magnitude           : 14.856
RP magnitude          : 13.476
BP magnitude          : 17.136
DUPflag              : 0
Distance (au)         : 4.708
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -1.71
Sun-Target sep (deg)  : 120.15
Sun-Moon sep (deg)    : 63.75
B (ring opening deg) : -2.43
PA of pole (deg)      : -2.22
Pole direction: RA (deg): 268.05665
Dec (deg): 64.49732
C/A sky separation (" ) : 20.136
C/A sky separation (km) : 68764.1
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	2043-04-23T21:52:39.361	25.80	-68.24	71484.2	-79.43	-80.66
Jupiter	E	2043-04-24T02:47:50.146	80.72	-29.33	71484.8	-71.07	-73.19