

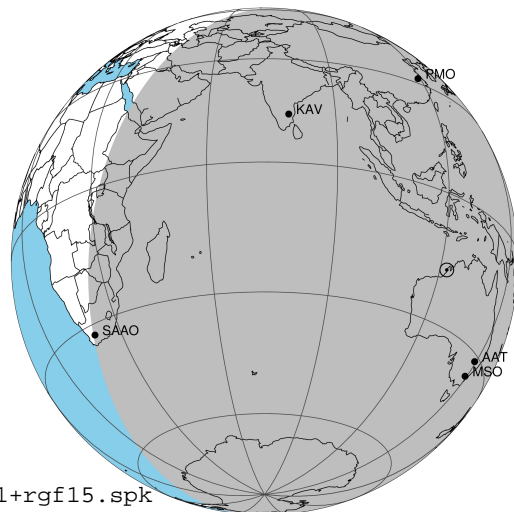
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-08-02T15:57:23.750
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4117426335965448192
 2Mass ID (if available) : 17322188-2302527

Jupiter 2043-08-02T15:57:23 K9.81 G14.29 Pgt

ICRS Star Coord at Epoch: 17h 32m 21.88753s -23°02'52.90628s

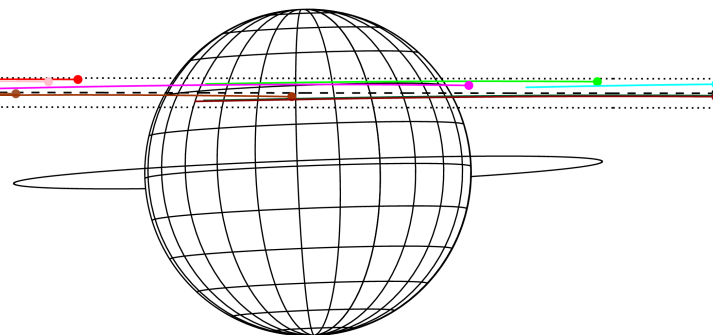
RUWE (>1.4 is poor) : 0.96
 K magnitude : 9.806
 G magnitude : 14.289
 RP magnitude : 13.114
 BP magnitude : 15.773
 DUPflag : 0
 Distance (au) : 4.496
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -7.52
 Sun-Target sep (deg) : 133.97
 Sun-Moon sep (deg) : 165.22
 B (ring opening deg) : -2.37
 PA of pole (deg) : 2.14
 Pole direction: RA (deg): 268.05671
 Dec (deg): 64.49731
 C/A sky separation (") : 10.690
 C/A sky separation (km) : 34854.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-08-02T15:57:23 K9.81 G14.29
 Pgt



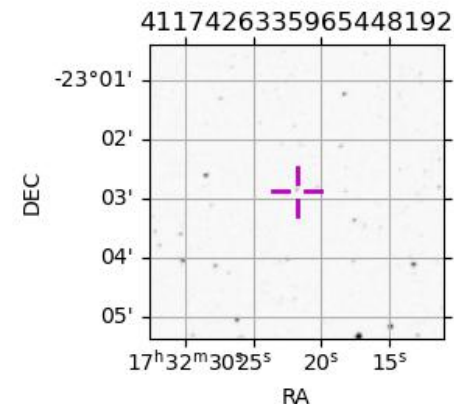
2043-08-02T15:57:23.7500 α: 17 32 21.8875 δ: -23 02 52.906 C/A ***** PA 179.93 deg v_sky - 7.52 km/s D 04.50 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 PMO
 TEN
 IRTF
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



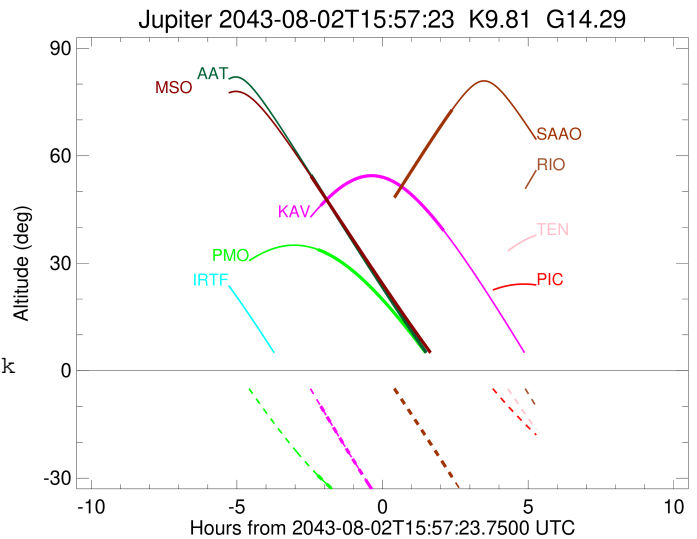
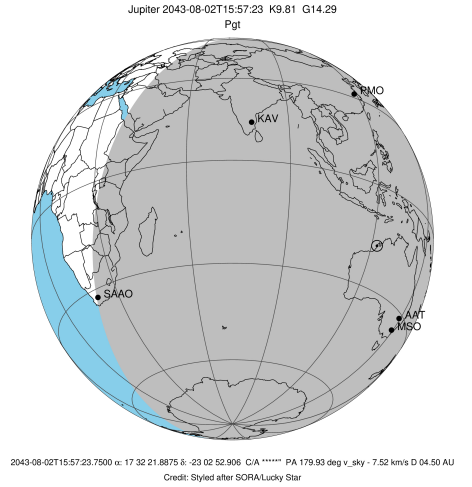
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	AUG 02 13:43 - AUG 02 13:43	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			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	AUG 02 13:50 - AUG 02 18:03	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 02 13:30 - AUG 02 13:30	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	AUG 02 18:20 - AUG 02 18:20	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	AUG 02 13:30 - AUG 02 13:30	Pin



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-02T15:50:15.420
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      : 4117426335965448192
2Mass ID (if available) : 17322188-2302527
ICRS Star Coord at Epoch: 17h 32m 21.88753s -23:02:52.90628s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 9.806
G magnitude          : 14.289
RP magnitude         : 13.114
BP magnitude         : 15.773
DUPflag             : 0
Distance (au)       : 4.496
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -7.52
Sun-Target sep (deg) : 133.97
Sun-Moon sep (deg)  : 165.03
B (ring opening deg) : -2.37
PA of pole (deg)    : 2.14
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (" ) : 12.104
C/A sky separation (km) : 39464.6
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
    
```

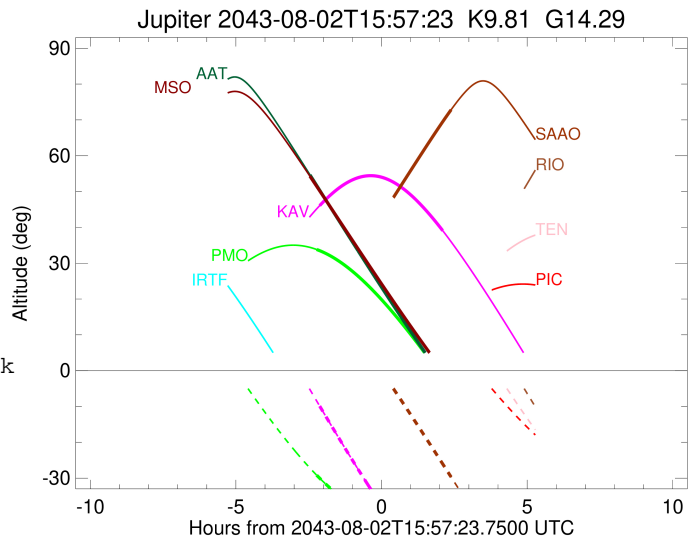
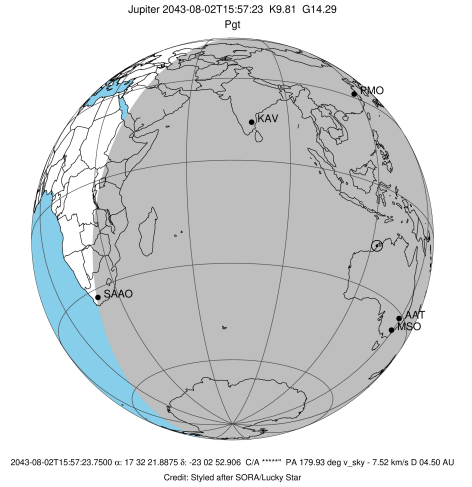


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-02T13:43:49.382	33.82	-29.17	71489.9	31.81	35.27
Jupiter	E	2043-08-02T17:59:32.933	-1.20x	-34.05	71489.5	34.70	38.28

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch              : 2043-08-02T15:56:16.520
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        : 4117426335965448192
2Mass ID (if available) : 17322188-2302527
ICRS Star Coord at Epoch: 17h 32m 21.88753s -23:02:52.90628s
RUWE (>1.4 is poor)  : 0.96
K magnitude            : 9.806
G magnitude            : 14.289
RP magnitude           : 13.114
BP magnitude           : 15.773
DUPflag               : 0
Distance (au)         : 4.496
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -7.52
Sun-Target sep (deg)  : 133.97
Sun-Moon sep (deg)    : 165.55
B (ring opening deg)  : -2.37
PA of pole (deg)      : 2.14
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 11.823
C/A sky separation (km) : 38550.8
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
    
```

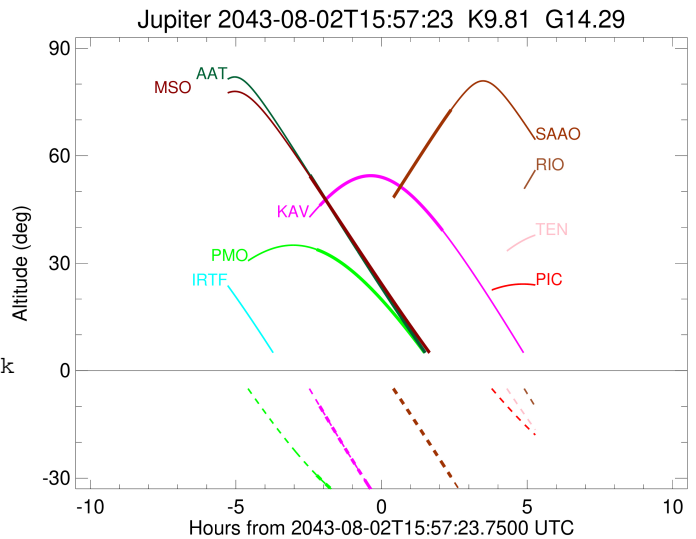
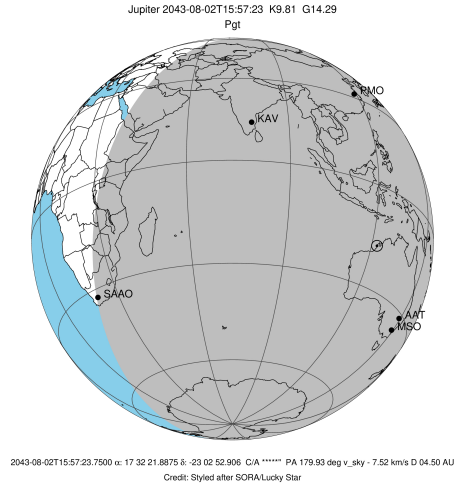


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-02T13:49:59.868	46.06	-9.87	71490.1	30.19	33.57
Jupiter	E	2043-08-02T18:03:24.468	39.10	-57.67	71489.6	34.34	37.91

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-02T15:47:15.500
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      : 4117426335965448192
2Mass ID (if available) : 17322188-2302527
ICRS Star Coord at Epoch: 17h 32m 21.88753s -23:02:52.90628s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 9.806
G magnitude          : 14.289
RP magnitude         : 13.114
BP magnitude         : 15.773
DUPflag             : 0
Distance (au)       : 4.496
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -7.52
Sun-Target sep (deg) : 133.97
Sun-Moon sep (deg)  : 164.45
B (ring opening deg) : -2.37
PA of pole (deg)    : 2.14
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (" ) : 9.942
C/A sky separation (km) : 32416.1
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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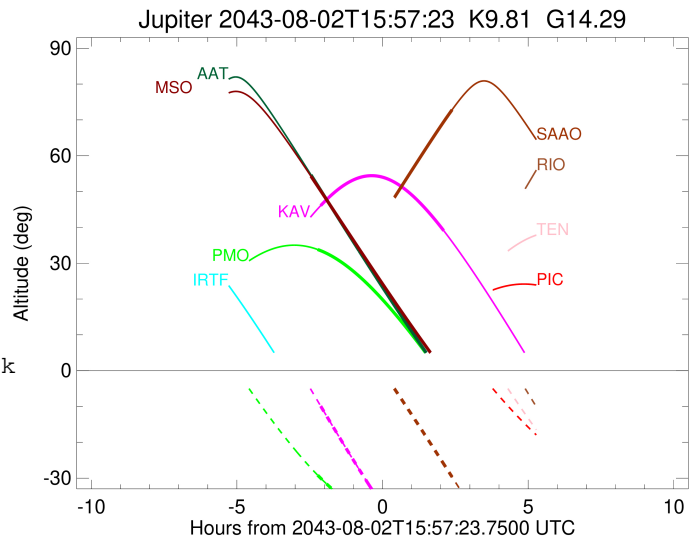
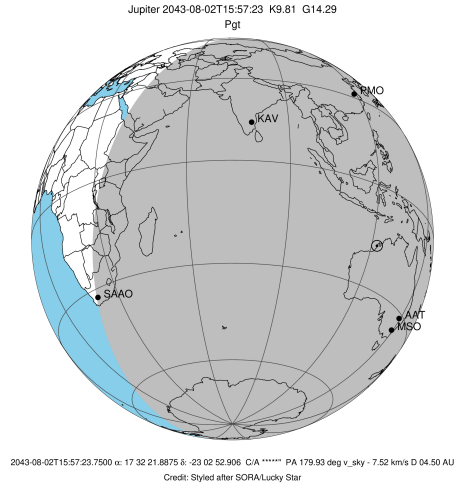


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-02T13:30:10.141	54.63	-73.83	71490.6	25.69	28.77
Jupiter	E	2043-08-02T18:08:55.971	-2.95x	-34.59	71490.3	27.98	31.23

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-02T16:05:31.200
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     : 4117426335965448192
2Mass ID (if available) : 17322188-2302527
ICRS Star Coord at Epoch: 17h 32m 21.88753s -23:02:52.90628s
RUWE (>1.4 is poor) : 0.96
K magnitude         : 9.806
G magnitude         : 14.289
RP magnitude        : 13.114
BP magnitude        : 15.773
DUPflag            : 0
Distance (au)      : 4.496
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -7.52
Sun-Target sep (deg) : 133.97
Sun-Moon sep (deg)  : 165.86
B (ring opening deg) : -2.37
PA of pole (deg)    : 2.14
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (" ) : 10.153
C/A sky separation (km) : 33105.3
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
    
```

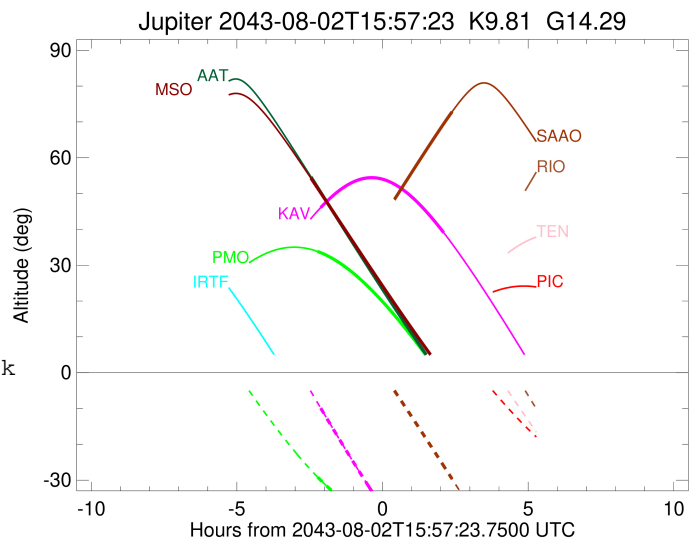
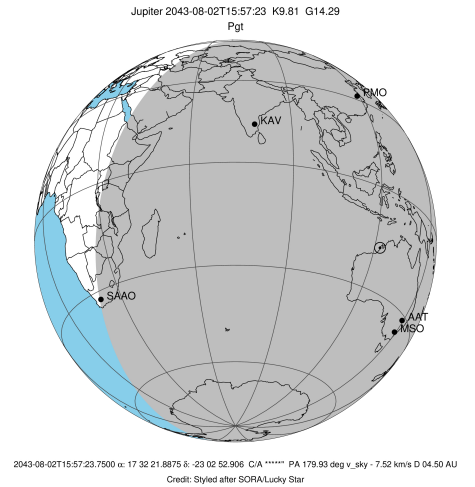


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-02T13:47:52.542	16.15	23.32x	71490.7	24.32	27.29
Jupiter	E	2043-08-02T18:20:47.221	72.82	-29.69	71490.0	30.37	33.76

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-02T15:47:42.310
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      : 4117426335965448192
2Mass ID (if available) : 17322188-2302527
ICRS Star Coord at Epoch: 17h 32m 21.88753s -23:02:52.90628s
RUWE (>1.4 is poor) : 0.96
K magnitude          : 9.806
G magnitude          : 14.289
RP magnitude         : 13.114
BP magnitude         : 15.773
DUPflag             : 0
Distance (au)       : 4.496
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -7.52
Sun-Target sep (deg) : 133.97
Sun-Moon sep (deg)  : 164.46
B (ring opening deg) : -2.37
PA of pole (deg)    : 2.14
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (" ) : 9.827
C/A sky separation (km) : 32042.6
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	2043-08-02T13:30:02.781	54.26	-70.40	71490.6	25.31	28.36
Jupiter	E	2043-08-02T18:09:48.382	-1.09x	-34.42	71490.3	27.70	30.93