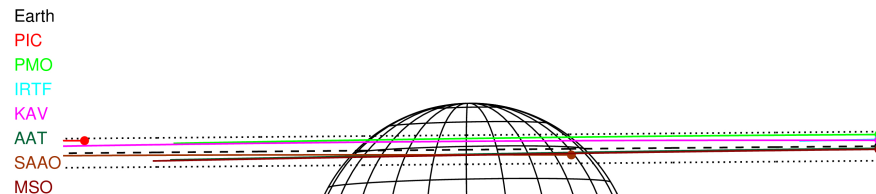
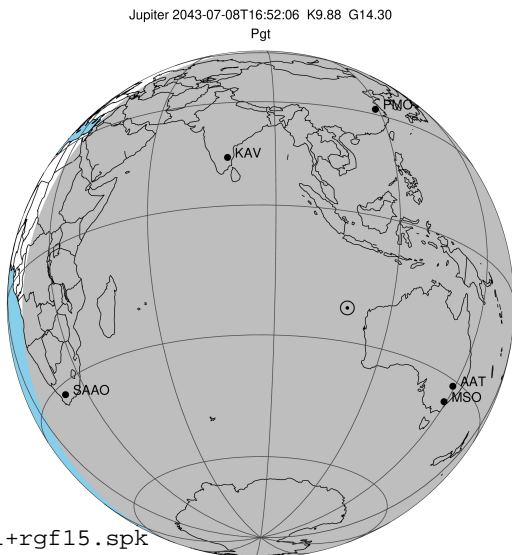


target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-07-08T16:52:06.790  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4116499898783466624  
 2Mass ID (if available) : 17414803-2303563

Jupiter 2043-07-08T16:52:06 K9.88 G14.30 Pgt

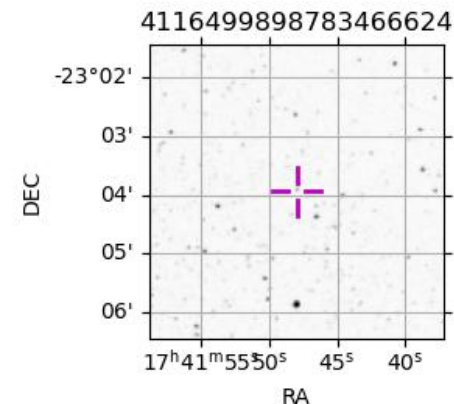
ICRS Star Coord at Epoch: 17h 41m 48.03179s -23:03:56.47968s  
 RUWE (>1.4 is poor) : 0.97  
 K magnitude : 9.878  
 G magnitude : 14.297  
 RP magnitude : 13.145  
 BP magnitude : 15.698  
 DUPflag : 0  
 Distance (au) : 4.293  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -14.69  
 Sun-Target sep (deg) : 159.97  
 Sun-Moon sep (deg) : 133.65  
 B (ring opening deg) : -2.41  
 PA of pole (deg) : 1.12  
 Pole direction: RA (deg): 268.05670  
 Dec (deg): 64.49732  
 C/A sky separation (") : 16.430  
 C/A sky separation (km) : 51162.2  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



2043-07-08T16:52:06.7900 a: 17 41 48.0318 ð -23 03 56.480 C/A \*\*\*\*\* PA 180.49 deg v\_sky -14.69 km/s D 04.29 AU  
 Credit: Styled after SORA/Lucky Star

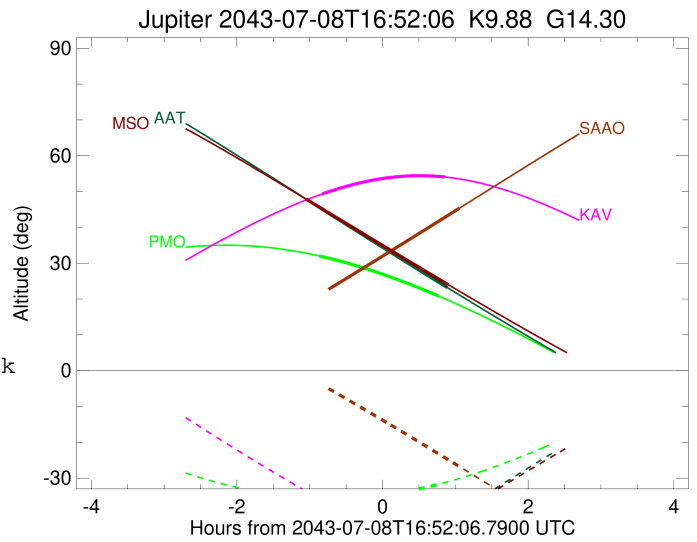
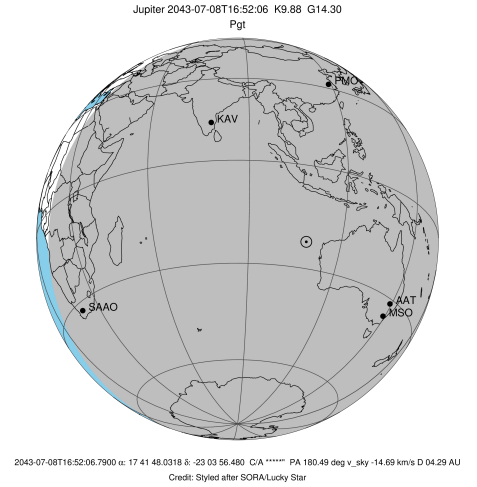
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	JUL 08 16:00 - JUL 08 17:38	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			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	JUL 08 16:02 - JUL 08 17:43	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	+ +	JUL 08 15:49 - JUL 08 17:45	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8		JUL 08 17:55 - JUL 08 17:55	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUL 08 15:48 - JUL 08 17:46	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-08T16:49:15.460
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        : 4116499898783466624
2Mass ID (if available) : 17414803-2303563
ICRS Star Coord at Epoch: 17h 41m 48.03179s -23:03:56.47968s
RUWE (>1.4 is poor) : 0.97
K magnitude            : 9.878
G magnitude           : 14.297
RP magnitude          : 13.145
BP magnitude          : 15.698
DUPflag               : 0
Distance (au)         : 4.293
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg)  : 159.97
Sun-Moon sep (deg)    : 133.73
B (ring opening deg) : -2.41
PA of pole (deg)      : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation (") : 18.010
C/A sky separation (km) : 56078.9
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
    
```

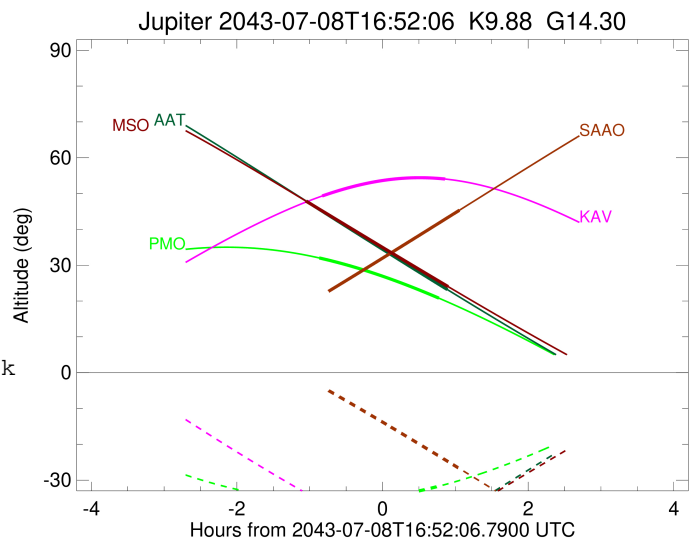
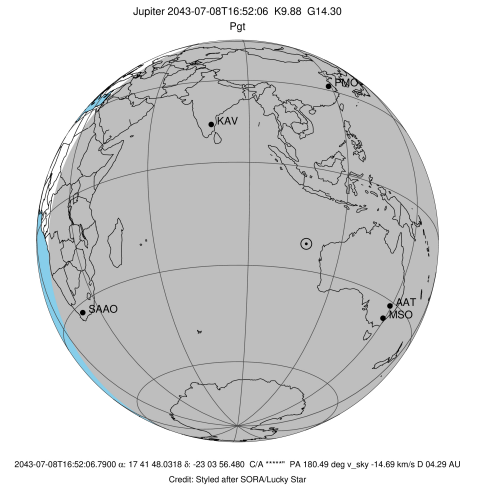


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T16:00:05.381	32.01	-35.63	71487.2	51.23	54.77
Jupiter	E	2043-07-08T17:38:35.081	20.79	-31.69	71487.1	51.88	55.39

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-08T16:52:56.820
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      : 4116499898783466624
2Mass ID (if available) : 17414803-2303563
ICRS Star Coord at Epoch: 17h 41m 48.03179s -23:03:56.47968s
RUWE (>1.4 is poor) : 0.97
K magnitude          : 9.878
G magnitude          : 14.297
RP magnitude         : 13.145
BP magnitude         : 15.698
DUPflag             : 0
Distance (au)       : 4.293
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.97
Sun-Moon sep (deg)  : 134.35
B (ring opening deg) : -2.41
PA of pole (deg)    : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation ("): 17.614
C/A sky separation (km): 54849.0
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
    
```

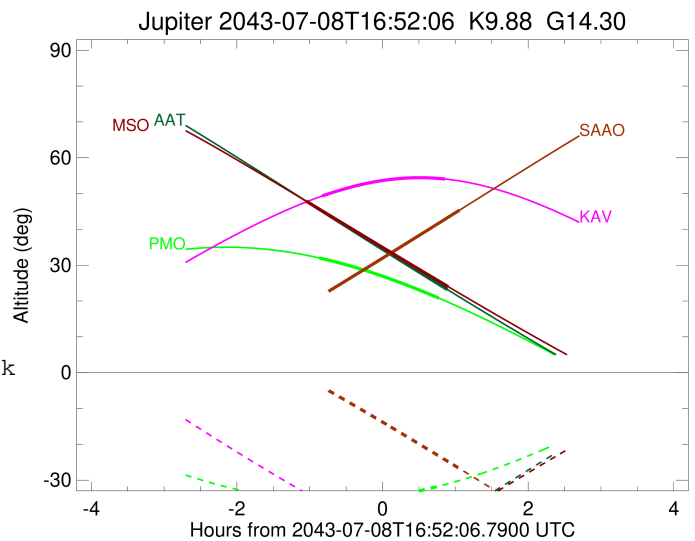
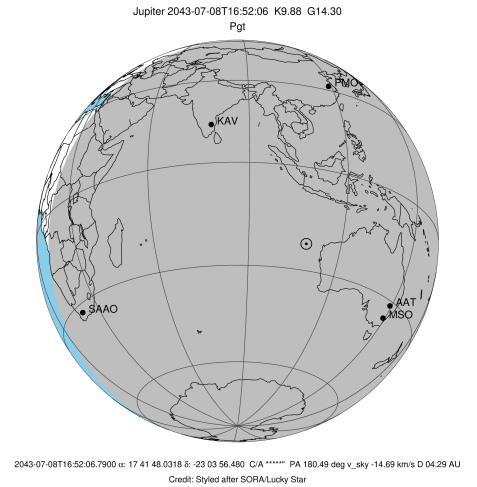


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T16:02:22.090	49.31	-36.14	71487.4	49.25	52.86
Jupiter	E	2043-07-08T17:43:30.203	54.05	-51.50	71487.2	50.69	54.26

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-08T16:47:10.960
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      : 4116499898783466624
2Mass ID (if available) : 17414803-2303563
ICRS Star Coord at Epoch: 17h 41m 48.03179s -23:03:56.47968s
RUWE (>1.4 is poor) : 0.97
K magnitude         : 9.878
G magnitude         : 14.297
RP magnitude        : 13.145
BP magnitude        : 15.698
DUPflag            : 0
Distance (au)       : 4.293
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.97
Sun-Moon sep (deg)  : 133.52
B (ring opening deg) : -2.41
PA of pole (deg)    : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation (" ) : 15.795
C/A sky separation (km) : 49181.8
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
    
```

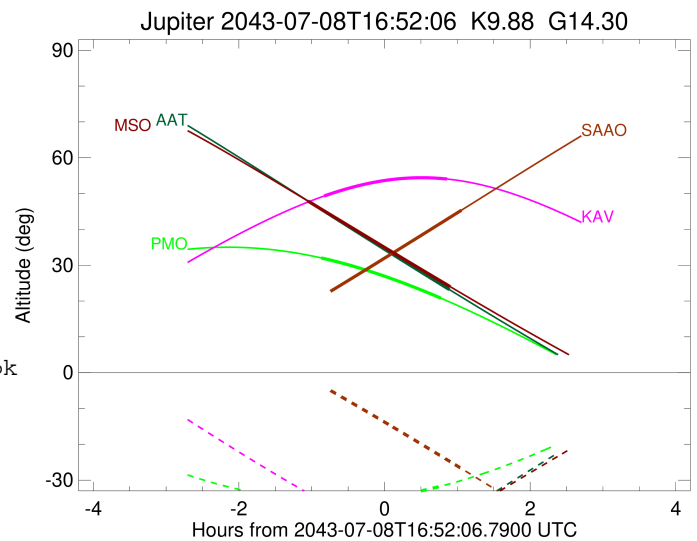
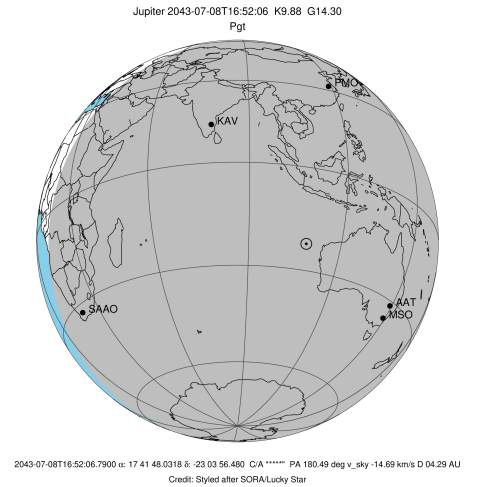


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T15:49:12.491	47.91	-66.05	71488.3	43.27	46.99
Jupiter	E	2043-07-08T17:45:31.094	23.20	-41.33	71488.2	43.49	47.21

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-08T16:57:06.120
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      : 4116499898783466624
2Mass ID (if available) : 17414803-2303563
ICRS Star Coord at Epoch: 17h 41m 48.03179s -23:03:56.47968s
RUWE (>1.4 is poor) : 0.97
K magnitude          : 9.878
G magnitude          : 14.297
RP magnitude         : 13.145
BP magnitude         : 15.698
DUPflag             : 0
Distance (au)       : 4.293
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.97
Sun-Moon sep (deg)  : 134.51
B (ring opening deg) : -2.41
PA of pole (deg)    : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation (" ) : 15.714
C/A sky separation (km) : 48931.5
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
    
```

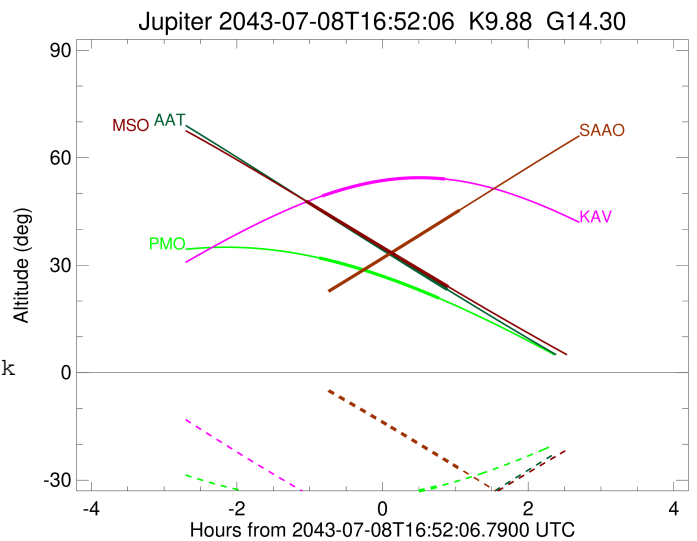
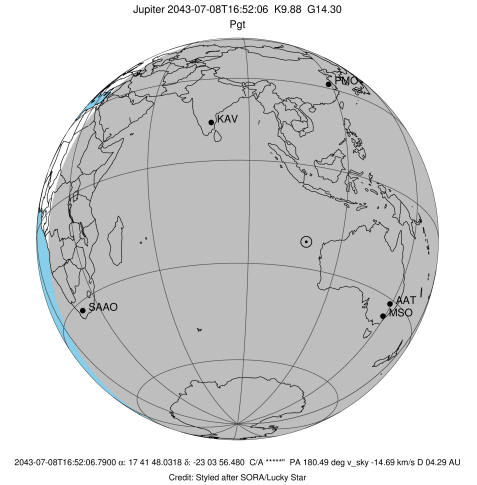


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T15:58:26.197	20.81	-3.21x	71488.5	41.95	45.67
Jupiter	E	2043-07-08T17:55:26.974	45.33	-26.75	71488.1	44.27	47.98

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-08T16:47:23.980
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        : 4116499898783466624
2Mass ID (if available) : 17414803-2303563
ICRS Star Coord at Epoch: 17h 41m 48.03179s -23:03:56.47968s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 9.878
G magnitude           : 14.297
RP magnitude          : 13.145
BP magnitude          : 15.698
DUPflag              : 0
Distance (au)         : 4.293
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg)  : 159.97
Sun-Moon sep (deg)    : 133.54
B (ring opening deg) : -2.41
PA of pole (deg)     : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation ("): 15.669
C/A sky separation (km): 48789.8
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	2043-07-08T15:48:58.503	47.91	-64.80	71488.3	42.82	46.54
Jupiter	E	2043-07-08T17:46:10.553	24.02	-41.37	71488.3	43.09	46.80