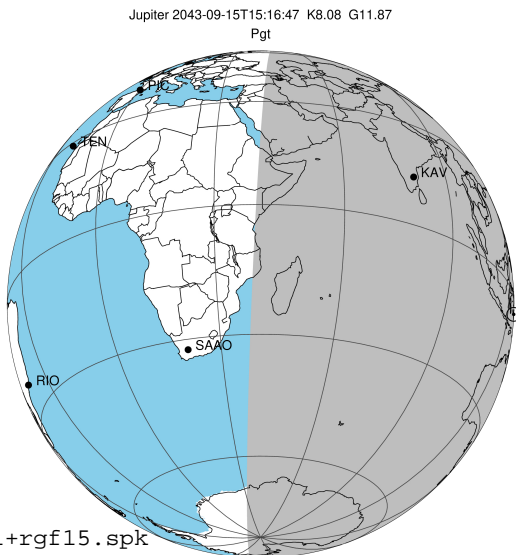


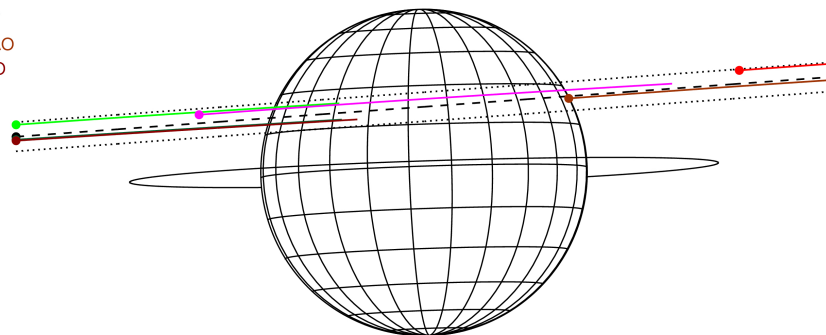
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-09-15T15:16:47.010  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4116679114739047424  
 2Mass ID (if available) : 17343605-2311013

Jupiter 2043-09-15T15:16:47 K8.08 G11.87 Pgt

ICRS Star Coord at Epoch: 17h 34m 36.05315s -23:11:01.51574s  
 RUWE (>1.4 is poor) : 0.81  
 K magnitude : 8.080  
 G magnitude : 11.872  
 RP magnitude : 10.809  
 BP magnitude : 13.047  
 DUPflag : 0  
 Distance (au) : 5.102  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 12.00  
 Sun-Target sep (deg) : 92.08  
 Sun-Moon sep (deg) : 44.73  
 B (ring opening deg) : -2.25  
 PA of pole (deg) : 1.90  
 Pole direction: RA (deg): 268.05673  
 Dec (deg): 64.49731  
 C/A sky separation (") : 7.758  
 C/A sky separation (km) : 28707.1  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



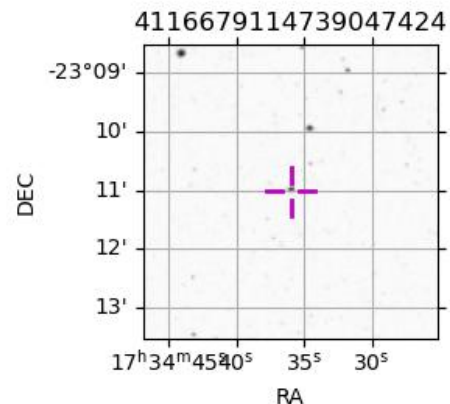
Earth  
 PIC  
 PMO  
 KAV  
 AAT  
 SAAO  
 MSO



2043-09-15T15:16:47.0100 cc: 17 34 36.0531 s -23 11 01.516 C/A 7.749" PA 184.19 deg v\_sky +12.00 km/s D 05.10 AU  
 Credit: Styled after SORA/Lucky Star

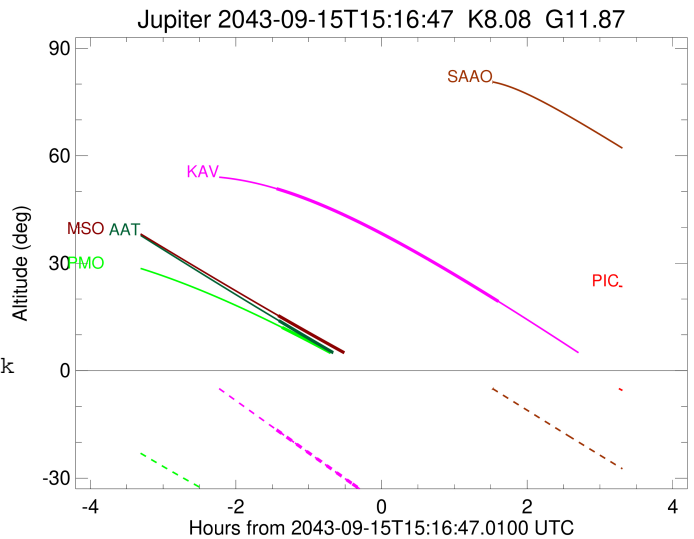
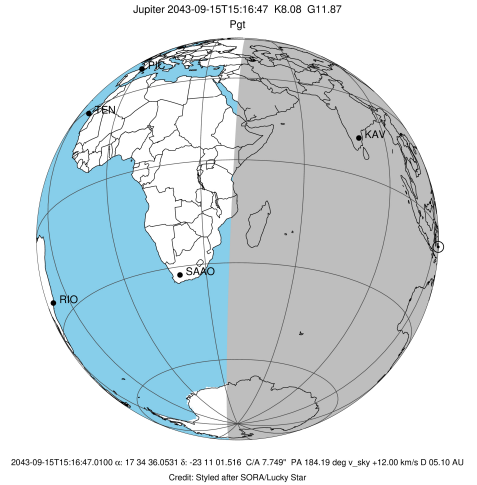
Observable events with sun below -5 deg and altitude above 5 deg

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	+	SEP 15 13:54 - SEP 15 13:54	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	+ +	SEP 15 13:50 - SEP 15 16:53	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	+	SEP 15 13:52 - SEP 15 13:52	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	SEP 15 16:48 - SEP 15 16:48	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	SEP 15 13:51 - SEP 15 13:51	Pin



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-15T15:24:23.880
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      : 4116679114739047424
2Mass ID (if available) : 17343605-2311013
ICRS Star Coord at Epoch: 17h 34m 36.05315s -23:11:01.51574s
RUWE (>1.4 is poor) : 0.81
K magnitude          : 8.080
G magnitude          : 11.872
RP magnitude         : 10.809
BP magnitude         : 13.047
DUPflag             : 0
Distance (au)       : 5.102
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 12.00
Sun-Target sep (deg) : 92.08
Sun-Moon sep (deg)  : 44.20
B (ring opening deg) : -2.25
PA of pole (deg)    : 1.90
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation ("): 8.790
C/A sky separation (km) : 32526.9
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
    
```

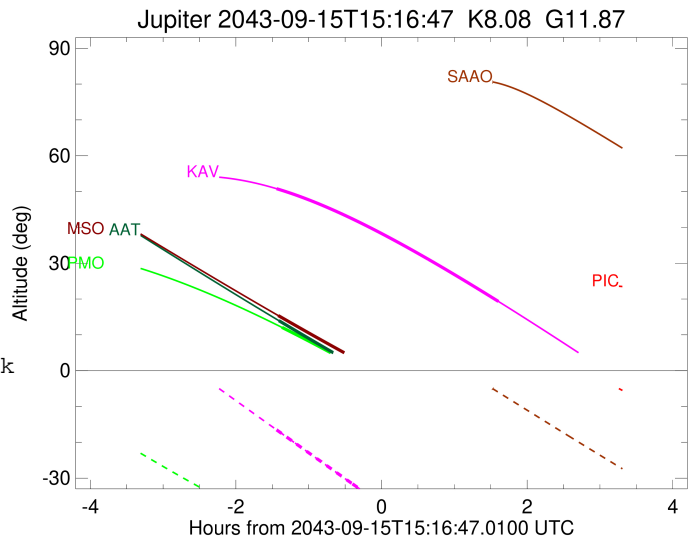
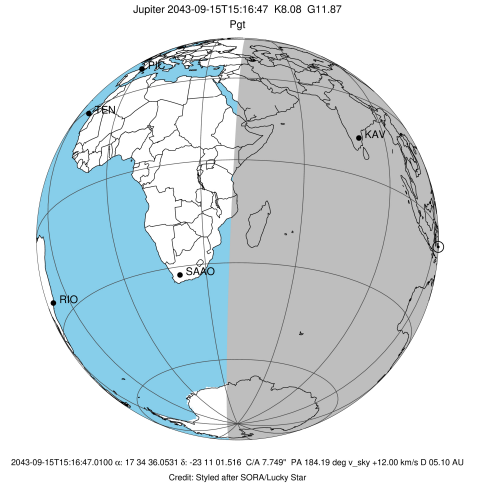


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-15T13:54:44.241	12.08	-44.25	71490.7	25.39	28.45
Jupiter	E	2043-09-15T16:52:41.378	-21.95x	-53.04	71490.4	28.59	31.88

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-15T15:22:19.550
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       : 4116679114739047424
2Mass ID (if available) : 17343605-2311013
ICRS Star Coord at Epoch: 17h 34m 36.05315s -23:11:01.51574s
RUWE (>1.4 is poor) : 0.81
K magnitude          : 8.080
G magnitude          : 11.872
RP magnitude         : 10.809
BP magnitude         : 13.047
DUPflag             : 0
Distance (au)        : 5.102
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 12.00
Sun-Target sep (deg) : 92.08
Sun-Moon sep (deg)   : 44.79
B (ring opening deg) : -2.25
PA of pole (deg)     : 1.90
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation ("): 8.683
C/A sky separation (km): 32131.4
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
    
```

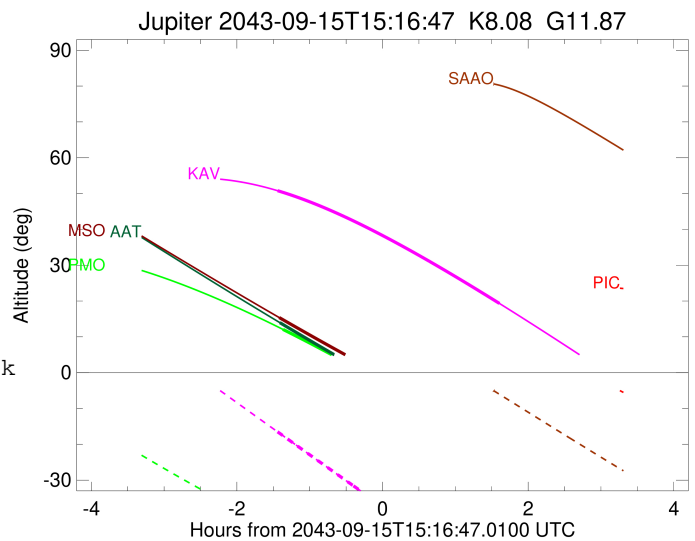
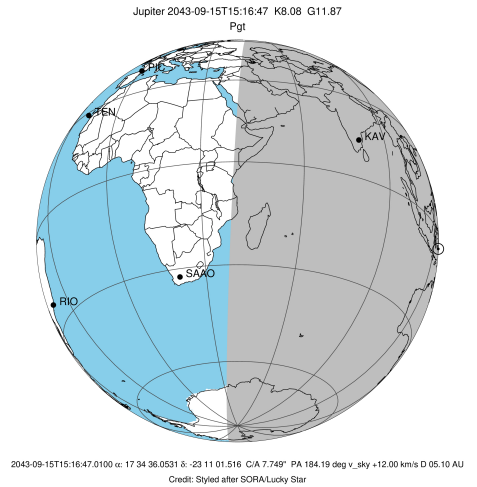


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-15T13:50:19.956	50.79	-16.52	71490.8	24.67	27.67
Jupiter	E	2043-09-15T16:53:10.802	19.31	-59.39	71490.4	28.40	31.67

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-15T15:24:40.640
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        : 4116679114739047424
2Mass ID (if available) : 17343605-2311013
ICRS Star Coord at Epoch: 17h 34m 36.05315s -23:11:01.51574s
RUWE (>1.4 is poor) : 0.81
K magnitude           : 8.080
G magnitude           : 11.872
RP magnitude          : 10.809
BP magnitude          : 13.047
DUPflag              : 0
Distance (au)         : 5.102
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 12.00
Sun-Target sep (deg)  : 92.08
Sun-Moon sep (deg)   : 44.10
B (ring opening deg) : -2.25
PA of pole (deg)     : 1.90
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation ("): 6.835
C/A sky separation (km): 25291.2
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
    
```

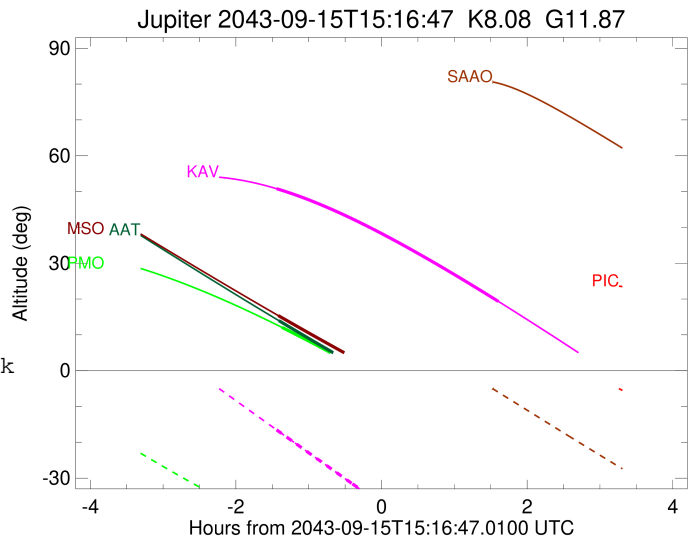
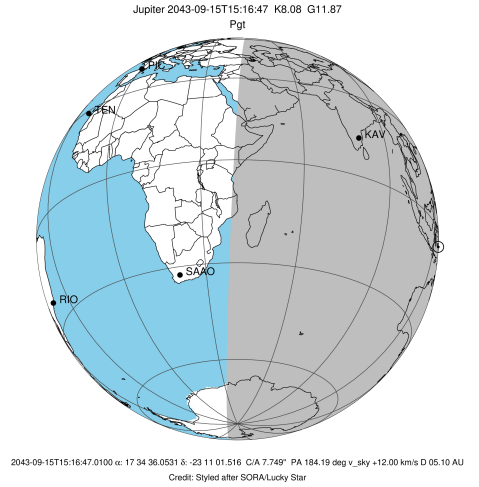


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-15T13:52:07.916	13.98	-61.77	71491.3	19.16	21.64
Jupiter	E	2043-09-15T16:55:49.760	-19.62x	-39.68	71491.0	22.31	25.10

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-15T15:14:00.920
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     : 4116679114739047424
2Mass ID (if available) : 17343605-2311013
ICRS Star Coord at Epoch: 17h 34m 36.05315s -23:11:01.51574s
RUWE (>1.4 is poor) : 0.81
K magnitude         : 8.080
G magnitude         : 11.872
RP magnitude        : 10.809
BP magnitude        : 13.047
DUPflag            : 0
Distance (au)      : 5.102
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 12.00
Sun-Target sep (deg) : 92.08
Sun-Moon sep (deg)  : 45.54
B (ring opening deg) : -2.25
PA of pole (deg)    : 1.90
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation (" ) : 7.418
C/A sky separation (km) : 27450.1
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
    
```

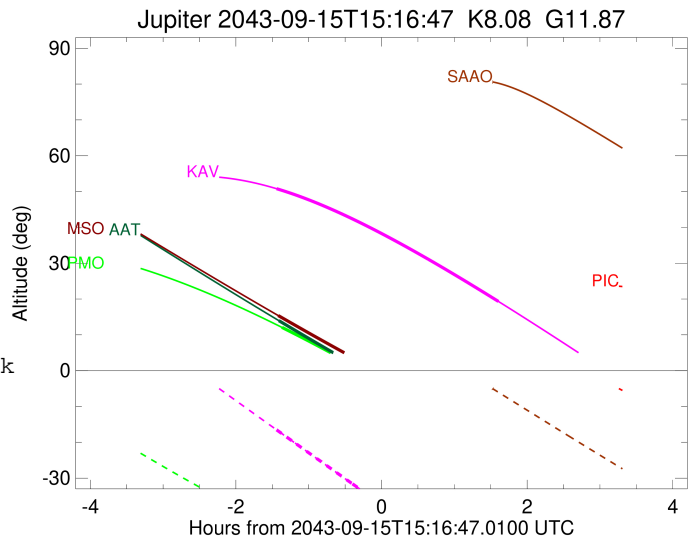
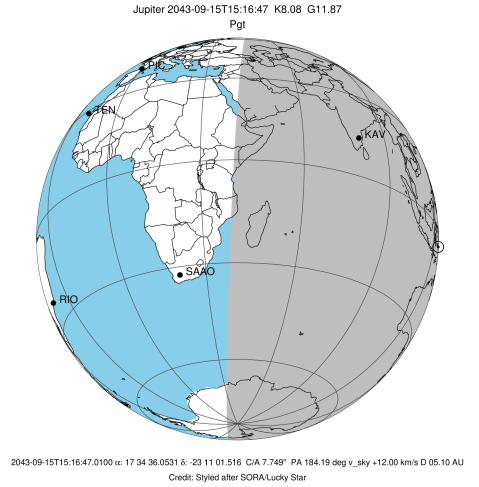


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-15T13:39:36.044	50.17	33.36x	71491.2	19.75	22.30
Jupiter	E	2043-09-15T16:48:40.082	80.57	-5.09	71490.8	25.09	28.13

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-15T15:24:22.020
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       : 4116679114739047424
2Mass ID (if available) : 17343605-2311013
ICRS Star Coord at Epoch: 17h 34m 36.05315s -23:11:01.51574s
RUWE (>1.4 is poor) : 0.81
K magnitude          : 8.080
G magnitude          : 11.872
RP magnitude         : 10.809
BP magnitude         : 13.047
DUPflag             : 0
Distance (au)        : 5.102
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 12.00
Sun-Target sep (deg) : 92.08
Sun-Moon sep (deg)   : 44.15
B (ring opening deg) : -2.25
PA of pole (deg)     : 1.90
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation ("): 6.748
C/A sky separation (km): 24970.5
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	2043-09-15T13:51:37.611	15.39	-57.74	71491.3	18.85	21.30
Jupiter	E	2043-09-15T16:55:45.482	-16.72x	-37.93	71491.0	22.06	24.83