

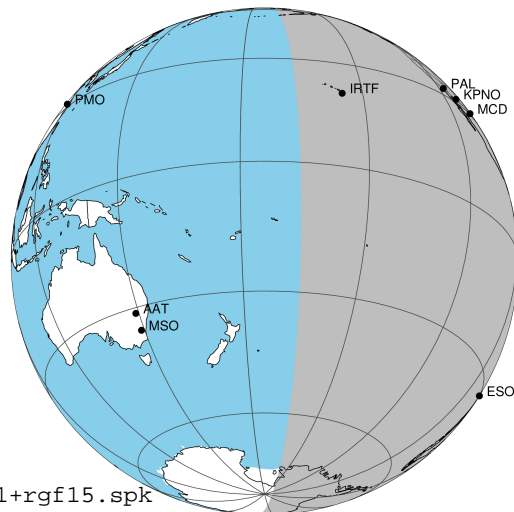
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-09-27T04:56:06.930
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116516460157280768
 2Mass ID (if available) : 17391775-2315008

Jupiter 2043-09-27T04:56:06 K8.43 G14.54 Pgt

ICRS Star Coord at Epoch: 17h 39m 17.73600s -23:15:01.20452s

RUWE (>1.4 is poor) : 0.94
 K magnitude : 8.432
 G magnitude : 14.541
 RP magnitude : 13.043
 BP magnitude : 17.710
 DUPflag : 0
 Distance (au) : 5.279
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 17.31
 Sun-Target sep (deg) : 81.86
 Sun-Moon sep (deg) : 152.98
 B (ring opening deg) : -2.22
 PA of pole (deg) : 1.39
 Pole direction: RA (deg): 268.05674
 Dec (deg): 64.49731
 C/A sky separation (") : 14.506
 C/A sky separation (km) : 55535.0
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

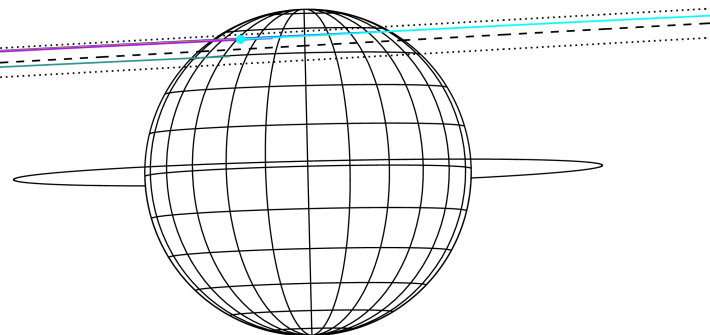
Jupiter 2043-09-27T04:56:06 K8.43 G14.54
 Pgt



2043-09-27T04:56:06.9300 a: 17 39 17.7360 s: -23 15 01.205 C/A ***** PA 183.18 deg v_sky +17.30 km/s D 05.28 AU
 Credit: Styled after SORA/Lucky Star

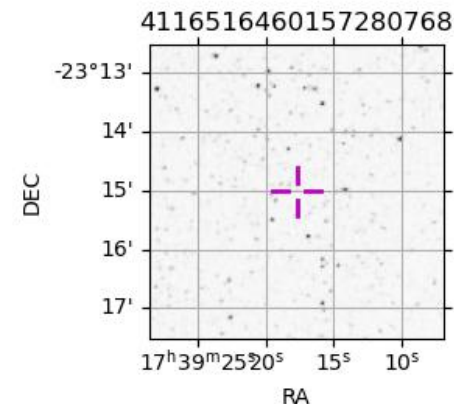
Earth

- PAL
- KPNO
- MCD
- IRTF
- RIO
- ESO



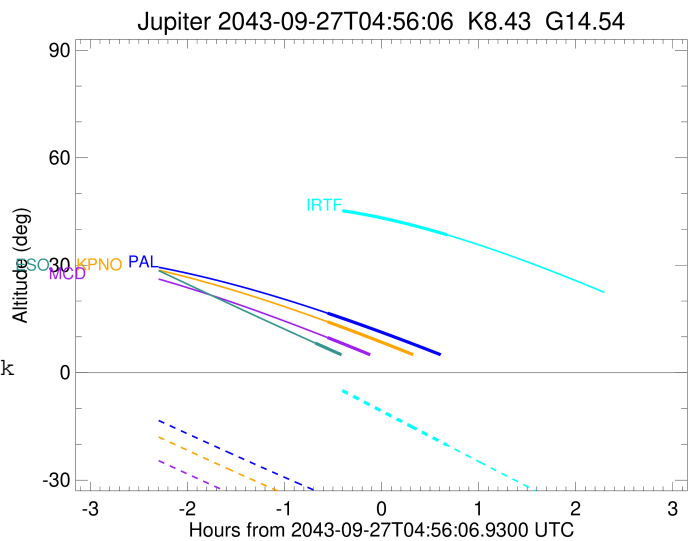
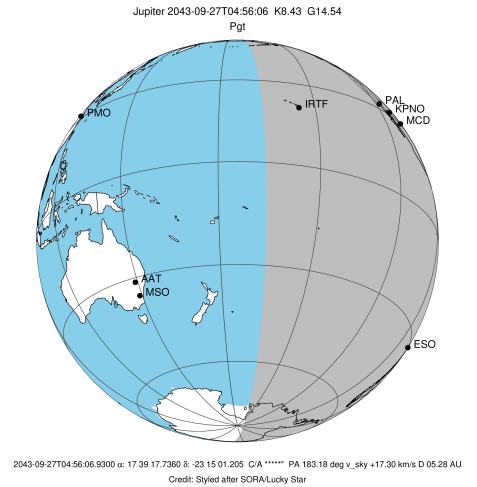
Observable events with sun below -5 deg and altitude above 5 deg

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	+	SEP 27 04:22 - SEP 27 04:22	Pin
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	SEP 27 04:22 - SEP 27 04:22	Pin
MCD	McDonald Obs. 2.7m	30.7	256.0	+	SEP 27 04:22 - SEP 27 04:22	Pin
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+	SEP 27 05:36 - SEP 27 05:36	Pne
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8			Pnn
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	SEP 27 04:15 - SEP 27 04:15	Pin
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-27T05:00:41.970
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : PAL
Location             : Palomar Mt (200")
Latitude (deg)       : 33.35622
E. Longitude (deg)   : 243.13601
Altitude (km)        : 1.706
Gaia source ID       : 4116516460157280768
2Mass ID (if available) : 17391775-2315008
ICRS Star Coord at Epoch: 17h 39m 17.73600s -23:15:01.20452s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 8.432
G magnitude           : 14.541
RP magnitude          : 13.043
BP magnitude          : 17.710
DUPflag              : 0
Distance (au)        : 5.279
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 17.31
Sun-Target sep (deg) : 81.86
Sun-Moon sep (deg)   : 152.59
B (ring opening deg) : -2.22
PA of pole (deg)     : 1.39
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (") : 15.688
C/A sky separation (km) : 60061.2
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
    
```

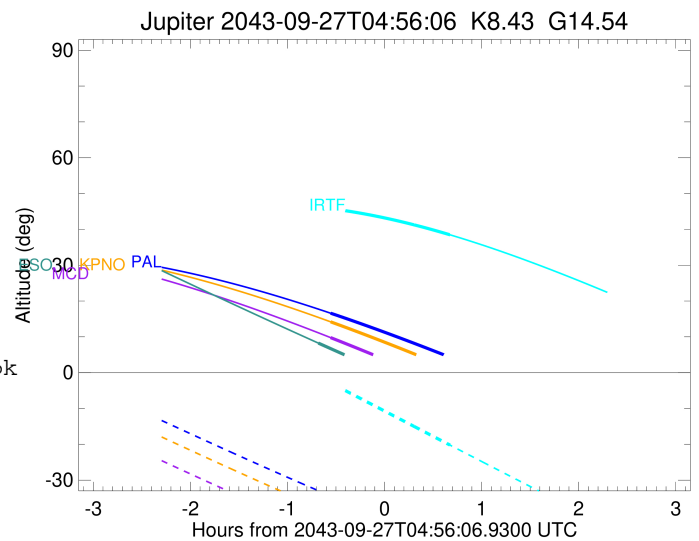
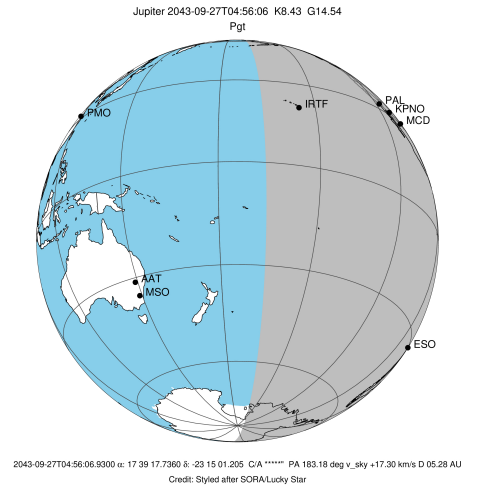


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-27T04:22:48.416	16.60	-34.39	71487.4	55.68	59.01
Jupiter	E	2043-09-27T05:38:26.298	3.97x	-47.71	71487.1	58.45	61.62

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-27T05:01:02.850
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : KPNO
Location            : Kitt Peak Natl Obs
Latitude (deg)      : 31.96333
E. Longitude (deg)  : 248.40000
Altitude (km)       : 2.120
Gaia source ID      : 4116516460157280768
2Mass ID (if available) : 17391775-2315008
ICRS Star Coord at Epoch: 17h 39m 17.73600s -23:15:01.20452s
RUWE (>1.4 is poor) : 0.94
K magnitude         : 8.432
G magnitude         : 14.541
RP magnitude        : 13.043
BP magnitude        : 17.710
DUPflag            : 0
Distance (au)       : 5.279
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 17.31
Sun-Target sep (deg) : 81.86
Sun-Moon sep (deg)  : 152.52
B (ring opening deg) : -2.22
PA of pole (deg)    : 1.39
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (") : 15.620
C/A sky separation (km) : 59800.1
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
    
```

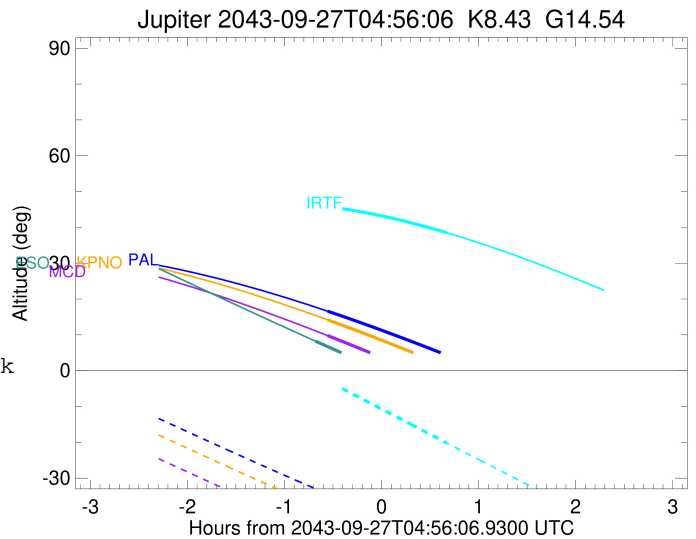
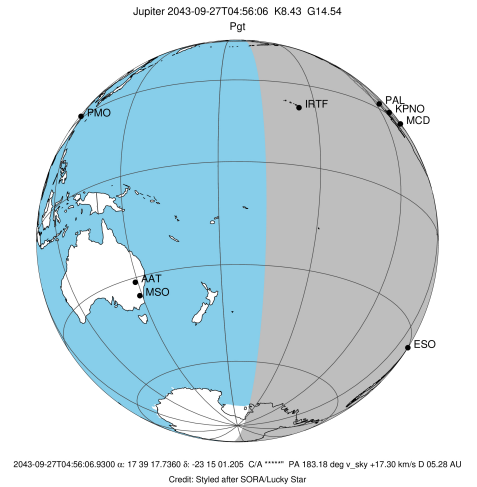


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-27T04:22:49.516	14.19	-39.00	71487.5	55.33	58.69
Jupiter	E	2043-09-27T05:39:06.296	0.68x	-51.94	71487.2	58.03	61.23

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-27T05:01:25.980
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : MCD
Location              : McDonald Obs. 2.7m
Latitude (deg)       : 30.67158
E. Longitude (deg)   : 255.97844
Altitude (km)        : 2.075
Gaia source ID       : 4116516460157280768
2Mass ID (if available) : 17391775-2315008
ICRS Star Coord at Epoch: 17h 39m 17.73600s -23:15:01.20452s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 8.432
G magnitude           : 14.541
RP magnitude          : 13.043
BP magnitude          : 17.710
DUPflag              : 0
Distance (au)        : 5.279
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 17.31
Sun-Target sep (deg) : 81.86
Sun-Moon sep (deg)   : 152.42
B (ring opening deg) : -2.22
PA of pole (deg)     : 1.39
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation ("): 15.528
C/A sky separation (km): 59449.6
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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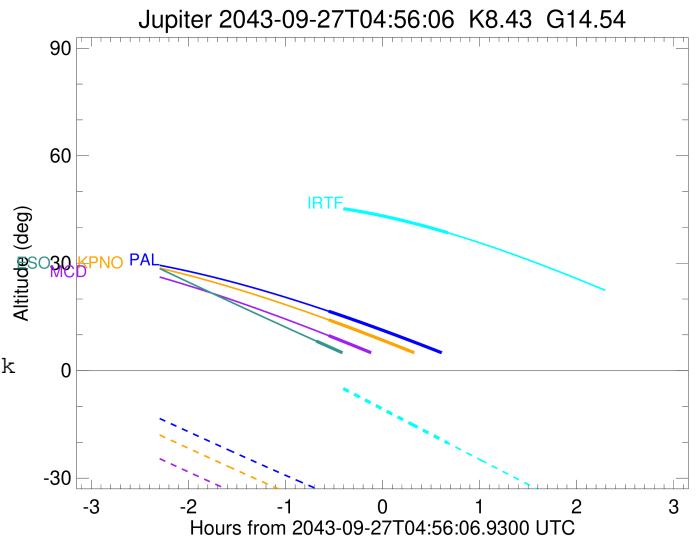
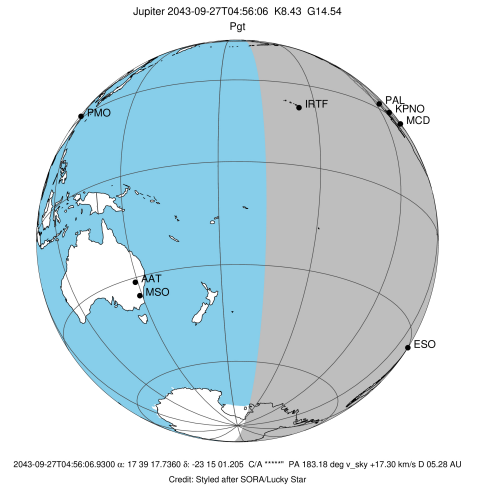


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-27T04:22:47.914	9.79	-45.24	71487.5	54.87	58.25
Jupiter	E	2043-09-27T05:39:53.359	-4.72x	-57.00	71487.2	57.49	60.72

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-27T04:57:57.360
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)       : 19.82622
E. Longitude (deg)   : 204.52800
Altitude (km)        : 4.168
Gaia source ID       : 4116516460157280768
2Mass ID (if available) : 17391775-2315008
ICRS Star Coord at Epoch: 17h 39m 17.73600s -23:15:01.20452s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 8.432
G magnitude           : 14.541
RP magnitude          : 13.043
BP magnitude          : 17.710
DUPflag              : 0
Distance (au)        : 5.279
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 17.31
Sun-Target sep (deg) : 81.86
Sun-Moon sep (deg)   : 153.14
B (ring opening deg) : -2.22
PA of pole (deg)     : 1.39
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (") : 15.631
C/A sky separation (km) : 59845.4
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
    
```

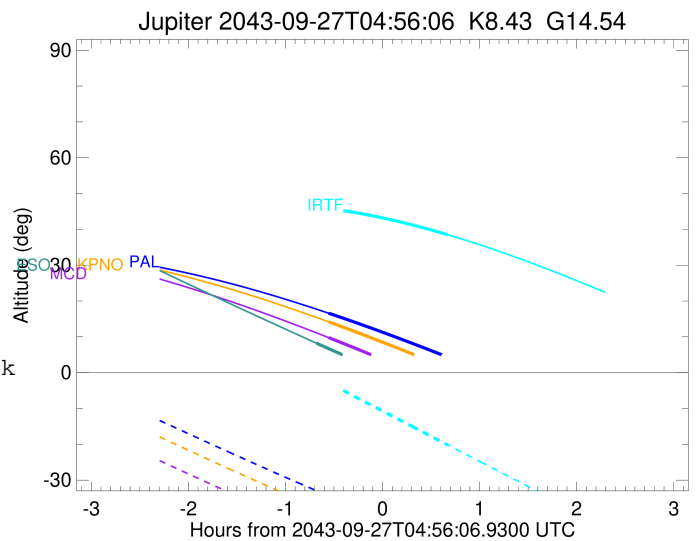
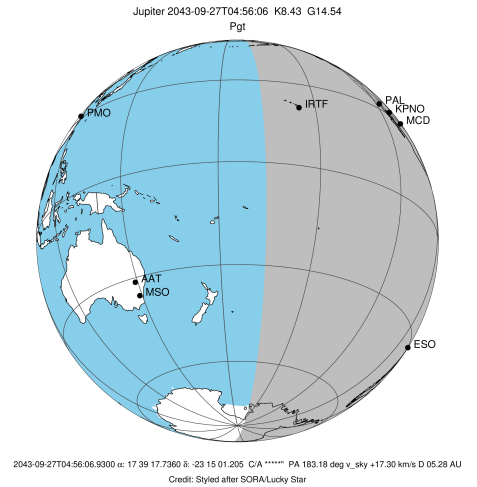


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-27T04:19:16.931	45.98	-2.03x	71487.5	55.06	58.43
Jupiter	E	2043-09-27T05:36:32.641	38.49	-20.20	71487.1	58.39	61.56

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-27T05:01:55.140
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        : 4116516460157280768
2Mass ID (if available) : 17391775-2315008
ICRS Star Coord at Epoch: 17h 39m 17.73600s -23:15:01.20452s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 8.432
G magnitude           : 14.541
RP magnitude          : 13.043
BP magnitude          : 17.710
DUPflag              : 0
Distance (au)         : 5.279
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 17.31
Sun-Target sep (deg) : 81.86
Sun-Moon sep (deg)   : 152.16
B (ring opening deg) : -2.22
PA of pole (deg)     : 1.39
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation ("): 13.684
C/A sky separation (km): 52391.3
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	2043-09-27T04:15:13.109	8.25	-59.00	71488.6	45.82	49.51
Jupiter	E	2043-09-27T05:48:21.346	-9.78x	-54.51	71488.3	48.35	51.99