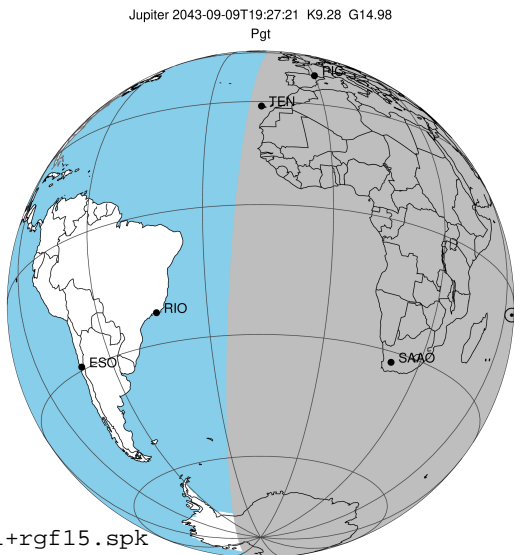


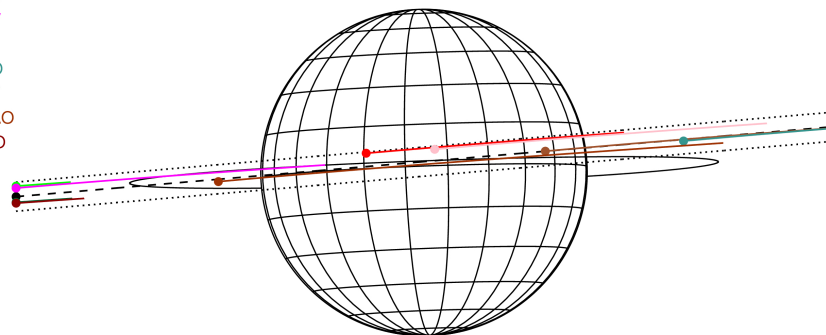
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-09-09T19:27:21.910
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116674029501489792
 2Mass ID (if available) : 17325045-2309130

Jupiter 2043-09-09T19:27:21 K9.28 G14.98 Pgt

ICRS Star Coord at Epoch: 17h 32m 50.44453s -23:09:13.21037s
 RUWE (>1.4 is poor) : 1.05
 K magnitude : 9.275
 G magnitude : 14.979
 RP magnitude : 13.569
 BP magnitude : 17.495
 DUPflag : 0
 Distance (au) : 5.013
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 9.28
 Sun-Target sep (deg) : 97.34
 Sun-Moon sep (deg) : 26.62
 B (ring opening deg) : -2.27
 PA of pole (deg) : 2.09
 Pole direction: RA (deg): 268.05673
 Dec (deg): 64.49731
 C/A sky separation (") : 1.305
 C/A sky separation (km) : 4745.0
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



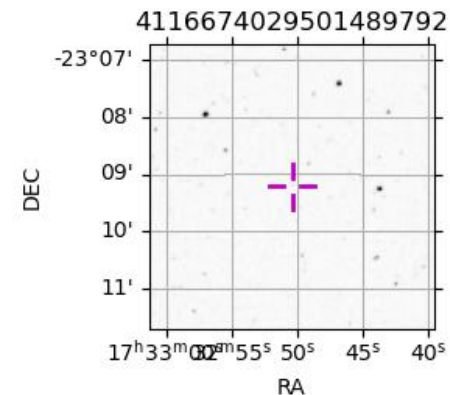
Earth
 PIC
 PMO
 TEN
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



2043-09-09T19:27:21.9100 or: 17 32 50.4445 s: -23 09 13.210 C/A 1.296" PA 184.89 deg v_sky + 9.28 km/s D 05.01 AU
 Credit: Styled after SORA/Lucky Star

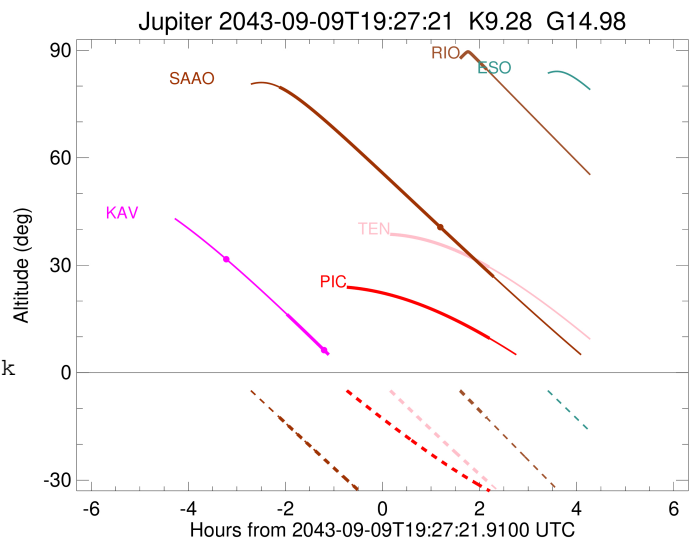
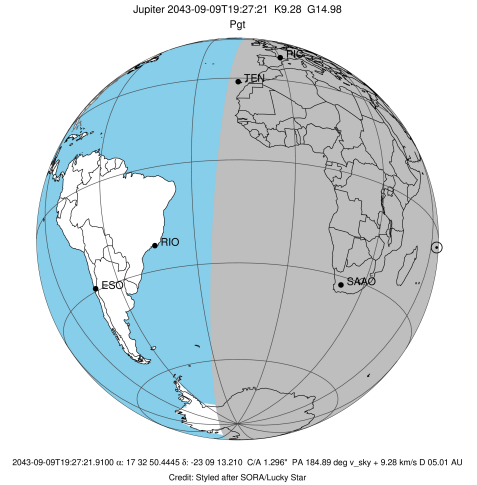
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+	SEP 09 21:39 - SEP 09 21:39	Pne
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
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	+	SEP 09 21:39 - SEP 09 21:39	Pne
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+	SEP 09 17:29 - SEP 09 17:29	Pin
RIO	Rio de Janeiro	-22.9	316.8	+	SEP 09 21:36 - SEP 09 21:36	Pne
ESO	European Southern Obs. (3.6m)	-29.3	289.3			Pnn
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	SEP 09 17:19 - SEP 09 21:44	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-09T19:29:03.150
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PIC
Location              : Pic du Midi
Latitude (deg)       : 42.93656
E. Longitude (deg)   : 0.14231
Altitude (km)        : 2.890
Gaia source ID       : 4116674029501489792
2Mass ID (if available) : 17325045-2309130
ICRS Star Coord at Epoch: 17h 32m 50.44453s -23:09:13.21037s
RUWE (>1.4 is poor) : 1.05
K magnitude           : 9.275
G magnitude           : 14.979
RP magnitude          : 13.569
BP magnitude          : 17.495
DUPflag              : 0
Distance (au)        : 5.013
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 9.28
Sun-Target sep (deg) : 97.34
Sun-Moon sep (deg)   : 27.05
B (ring opening deg) : -2.27
PA of pole (deg)     : 2.09
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation (") : 2.908
C/A sky separation (km) : 10572.4
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
    
```

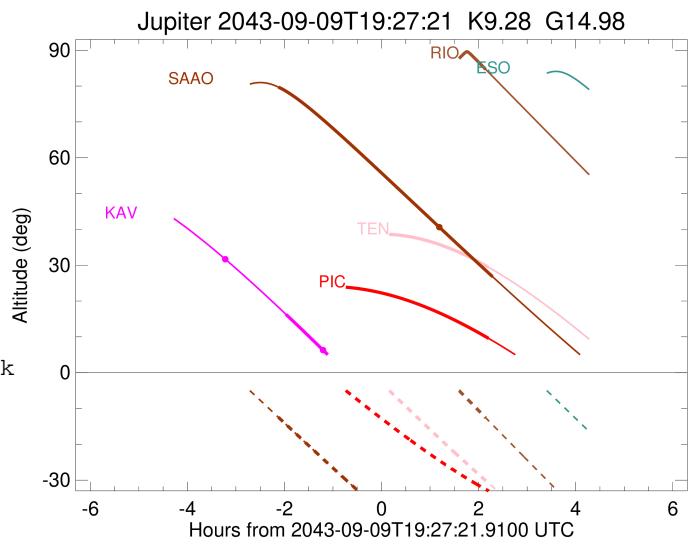
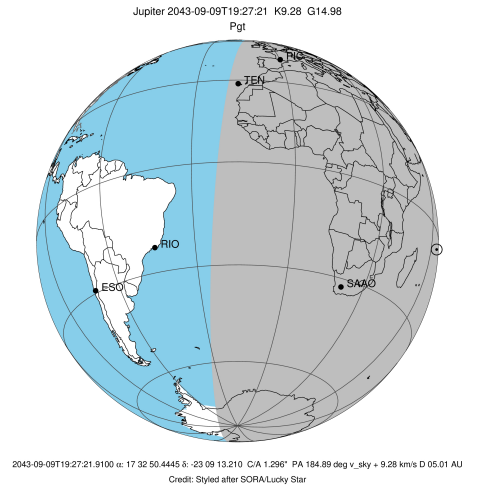


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-09T17:16:54.244	22.48	10.79x	71491.9	5.52	6.31
Jupiter	E	2043-09-09T21:39:47.159	9.56	-33.01	71491.7	10.97	12.50

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-09T19:26:35.150
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        : 4116674029501489792
2Mass ID (if available) : 17325045-2309130
ICRS Star Coord at Epoch: 17h 32m 50.44453s -23:09:13.21037s
RUWE (>1.4 is poor) : 1.05
K magnitude           : 9.275
G magnitude           : 14.979
RP magnitude          : 13.569
BP magnitude          : 17.495
DUPflag              : 0
Distance (au)         : 5.013
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 9.28
Sun-Target sep (deg) : 97.34
Sun-Moon sep (deg)   : 26.97
B (ring opening deg) : -2.27
PA of pole (deg)     : 2.09
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation (") : 2.670
C/A sky separation (km) : 9706.1
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
    
```

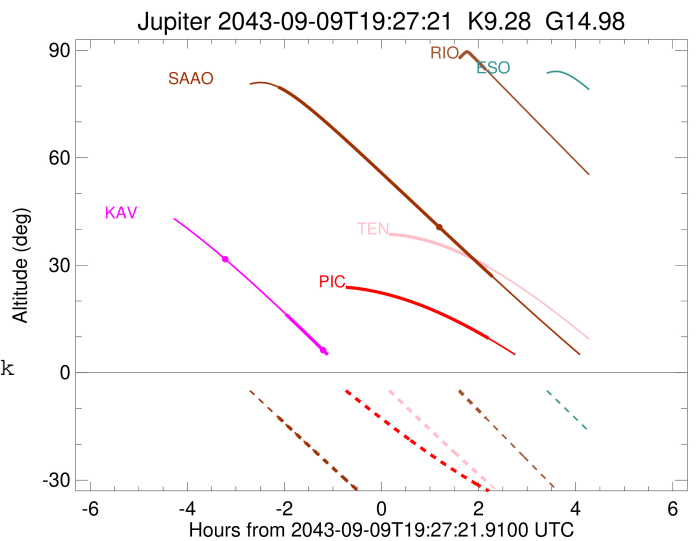
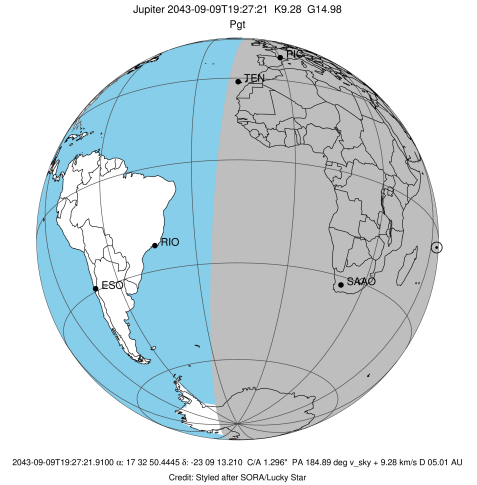


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-09T17:13:29.541	29.46	26.55x	71492.0	4.49	5.13
Jupiter	E	2043-09-09T21:39:06.695	29.49	-30.72	71491.8	10.50	11.97

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-09T19:38:28.370
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        : 4116674029501489792
2Mass ID (if available) : 17325045-2309130
ICRS Star Coord at Epoch: 17h 32m 50.44453s -23:09:13.21037s
RUWE (>1.4 is poor)  : 1.05
K magnitude           : 9.275
G magnitude           : 14.979
RP magnitude          : 13.569
BP magnitude          : 17.495
DUPflag              : 0
Distance (au)         : 5.013
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 9.28
Sun-Target sep (deg)  : 97.34
Sun-Moon sep (deg)    : 27.34
B (ring opening deg)  : -2.27
PA of pole (deg)      : 2.09
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation (") : 1.692
C/A sky separation (km) : 6153.0
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
    
```

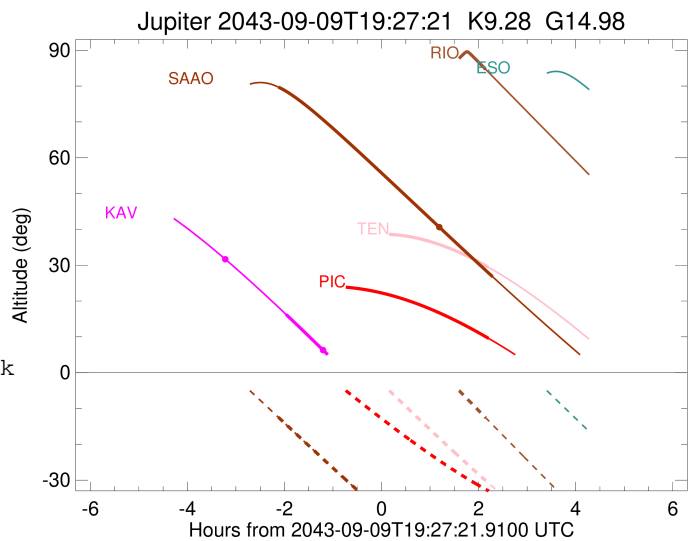
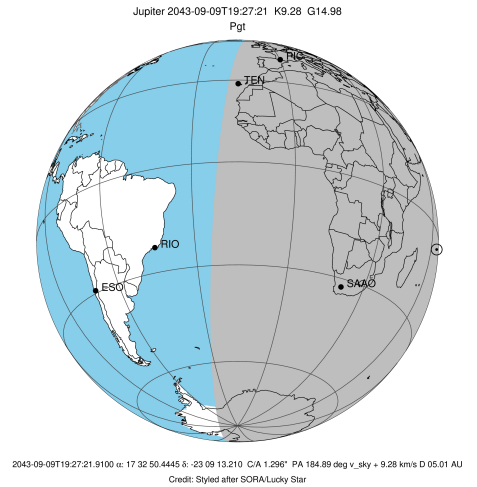


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-09T17:29:16.419	16.28	-64.76	71492.0	3.18	3.63
Jupiter	E	2043-09-09T21:43:43.039	-41.22x	-41.51	71491.9	6.67	7.62

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-09T19:22:24.300
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     : 4116674029501489792
2Mass ID (if available) : 17325045-2309130
ICRS Star Coord at Epoch: 17h 32m 50.44453s -23:09:13.21037s
RUWE (>1.4 is poor) : 1.05
K magnitude        : 9.275
G magnitude        : 14.979
RP magnitude       : 13.569
BP magnitude       : 17.495
DUPflag           : 0
Distance (au)     : 5.013
f0 (km)           : 0.00
g0 (km)           : 0.00
skyplane vel. (km/s) : 9.28
Sun-Target sep (deg) : 97.34
Sun-Moon sep (deg) : 26.65
B (ring opening deg) : -2.27
PA of pole (deg)  : 2.09
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation (") : 1.185
C/A sky separation (km) : 4306.8
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
    
```

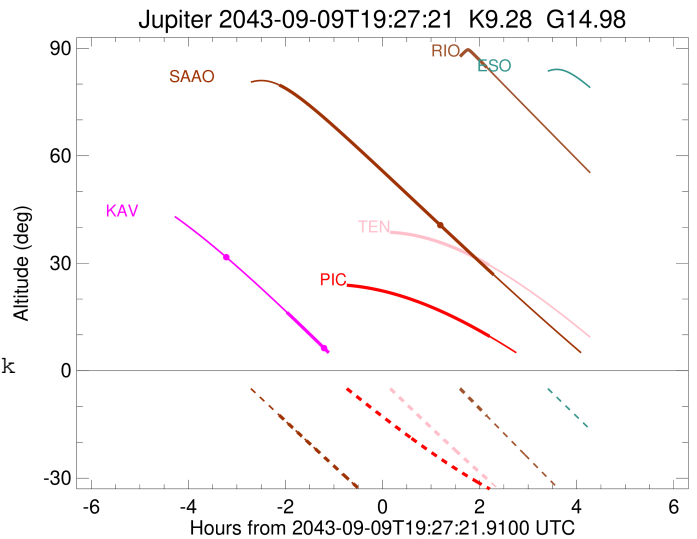
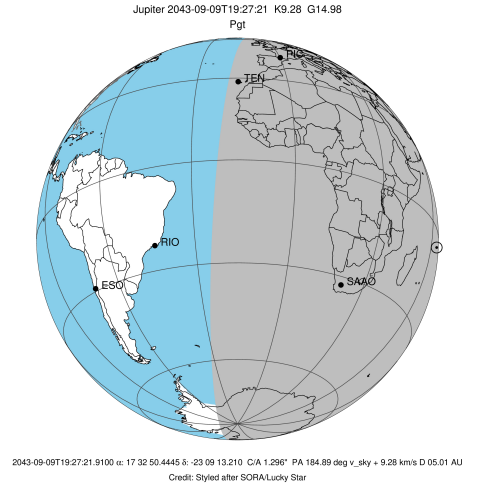


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-09T17:09:43.223	34.29	45.93x	71492.0	-0.26	-0.30
Jupiter	E	2043-09-09T21:36:12.089	84.64	-12.59	71491.9	6.67	7.61

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-09T19:33:43.360
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      : 4116674029501489792
2Mass ID (if available) : 17325045-2309130
ICRS Star Coord at Epoch: 17h 32m 50.44453s -23:09:13.21037s
RUWE (>1.4 is poor) : 1.05
K magnitude          : 9.275
G magnitude          : 14.979
RP magnitude         : 13.569
BP magnitude         : 17.495
DUPflag             : 0
Distance (au)       : 5.013
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 9.28
Sun-Target sep (deg) : 97.34
Sun-Moon sep (deg)  : 27.35
B (ring opening deg) : -2.27
PA of pole (deg)    : 2.09
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation ("): 0.976
C/A sky separation (km): 3549.0
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	2043-09-09T17:19:56.884	79.71	-12.46	71492.0	0.22	0.25
Jupiter	E	2043-09-09T21:44:50.325	26.75	-60.55	71491.9	4.96	5.67