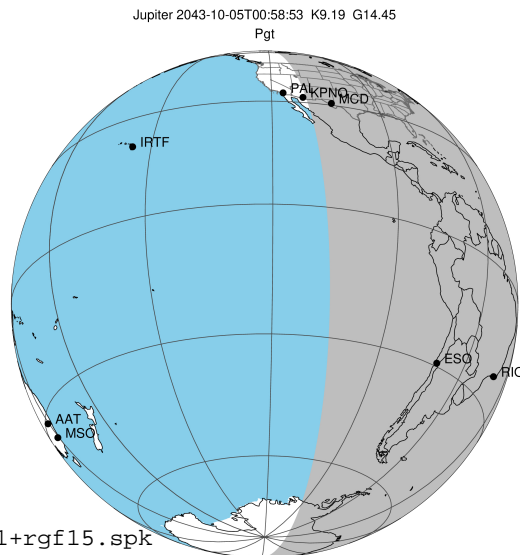


target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-10-05T00:58:53.670  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4068814697912421504  
 2Mass ID (if available) : 17431921-2317545

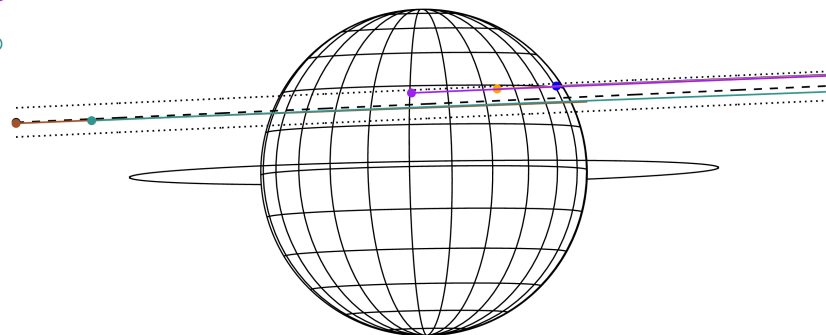
Jupiter 2043-10-05T00:58:53 K9.19 G14.45 Pgt

ICRS Star Coord at Epoch: 17h 43m 19.22652s -23:17:54.55831s

RUWE (>1.4 is poor) : 0.88  
 K magnitude : 9.188  
 G magnitude : 14.451  
 RP magnitude : 13.135  
 BP magnitude : 16.478  
 DUPflag : 0  
 Distance (au) : 5.396  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 20.80  
 Sun-Target sep (deg) : 75.08  
 Sun-Moon sep (deg) : 53.67  
 B (ring opening deg) : -2.19  
 PA of pole (deg) : 0.96  
 Pole direction: RA (deg): 268.05674  
 Dec (deg): 64.49731  
 C/A sky separation (") : 7.652  
 C/A sky separation (km) : 29949.1  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



Earth  
 PAL  
 KPNO  
 MCD  
 RIO  
 ESO

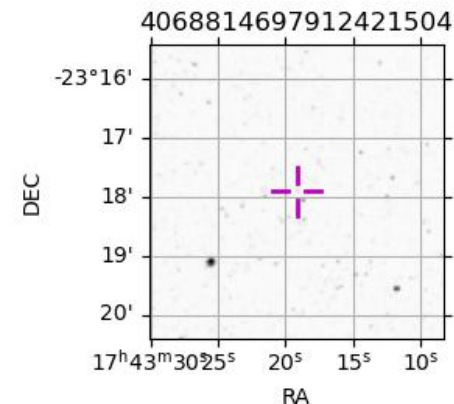


2043-10-05T00:58:53.6700 cr: 17 43 19.2265 s: -23 17 54.558 C/A 7.644" PA 182.57 deg v\_sky +20.80 km/s D 05.40 AU

Credit: Styled after SORA/Lucky Star

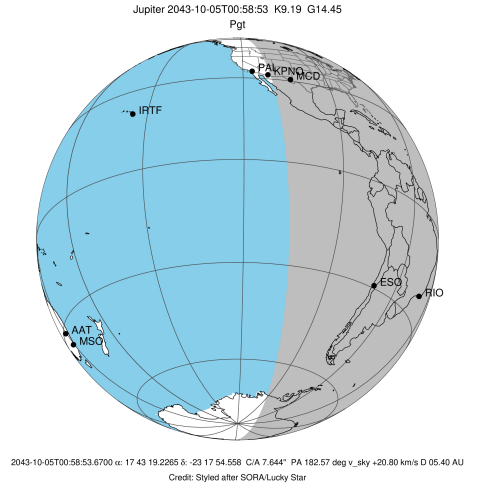
Observable events with sun below -5 deg and altitude above 5 deg

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	+	OCT 05 01:49 - OCT 05 01:49	Pne
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	OCT 05 01:50 - OCT 05 01:50	Pne
MCD	McDonald Obs. 2.7m	30.7	256.0	+	OCT 05 01:50 - OCT 05 01:50	Pne
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			Pnn
RIO	Rio de Janeiro	-22.9	316.8	+ +	OCT 05 00:10 - OCT 05 01:56	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	OCT 05 00:09 - OCT 05 01:55	Pie
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

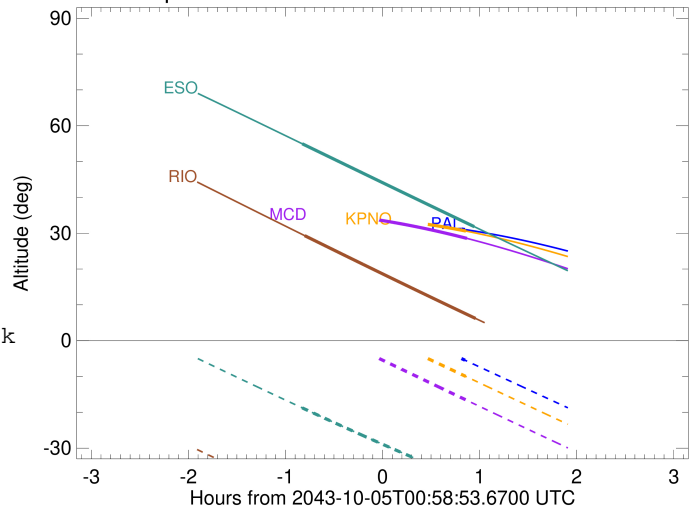


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-05T00:59:05.770
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       : 4068814697912421504
2Mass ID (if available) : 17431921-2317545
ICRS Star Coord at Epoch: 17h 43m 19.22652s -23:17:54.55831s
RUWE (>1.4 is poor) : 0.88
K magnitude           : 9.188
G magnitude           : 14.451
RP magnitude          : 13.135
BP magnitude          : 16.478
DUPflag              : 0
Distance (au)        : 5.396
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 20.80
Sun-Target sep (deg) : 75.08
Sun-Moon sep (deg)   : 54.14
B (ring opening deg) : -2.19
PA of pole (deg)     : 0.96
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation ("): 9.012
C/A sky separation (km): 35270.1
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
    
```



Jupiter 2043-10-05T00:58:53 K9.19 G14.45

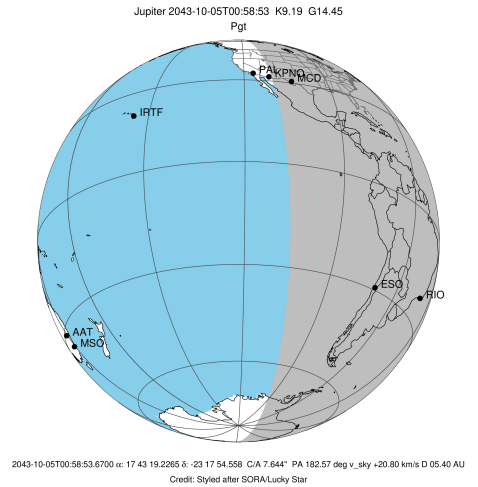


x: target alt < 5.0 deg or sun > -5.0 deg

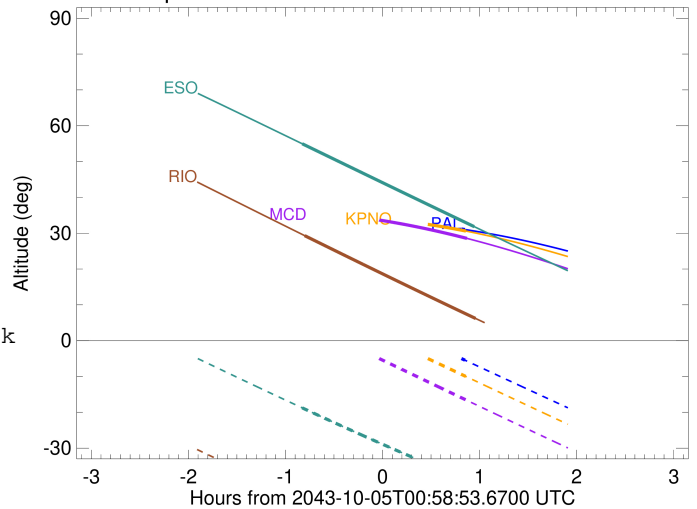
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-05T00:08:16.007	33.03	15.51x	71490.6	27.87	31.11
Jupiter	E	2043-10-05T01:49:51.991	31.01	-5.45	71490.3	31.11	34.54

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-10-05T00:59:31.740
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       : 4068814697912421504
2Mass ID (if available) : 17431921-2317545
ICRS Star Coord at Epoch: 17h 43m 19.22652s -23:17:54.55831s
RUWE (>1.4 is poor) : 0.88
K magnitude          : 9.188
G magnitude          : 14.451
RP magnitude         : 13.135
BP magnitude         : 16.478
DUPflag             : 0
Distance (au)        : 5.396
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 20.80
Sun-Target sep (deg) : 75.08
Sun-Moon sep (deg)  : 54.18
B (ring opening deg) : -2.19
PA of pole (deg)    : 0.96
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (" ) : 8.988
C/A sky separation (km) : 35177.4
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
    
```



Jupiter 2043-10-05T00:58:53 K9.19 G14.45

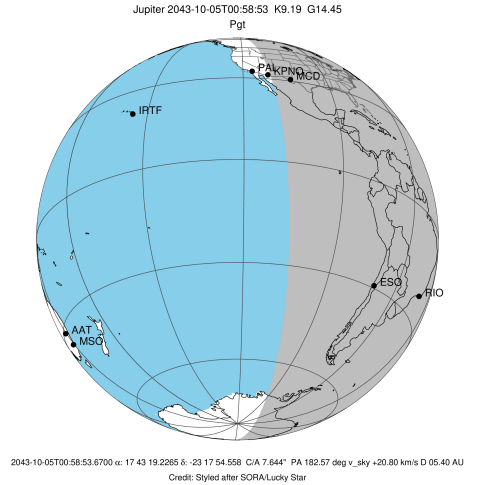


x: target alt < 5.0 deg or sun > -5.0 deg

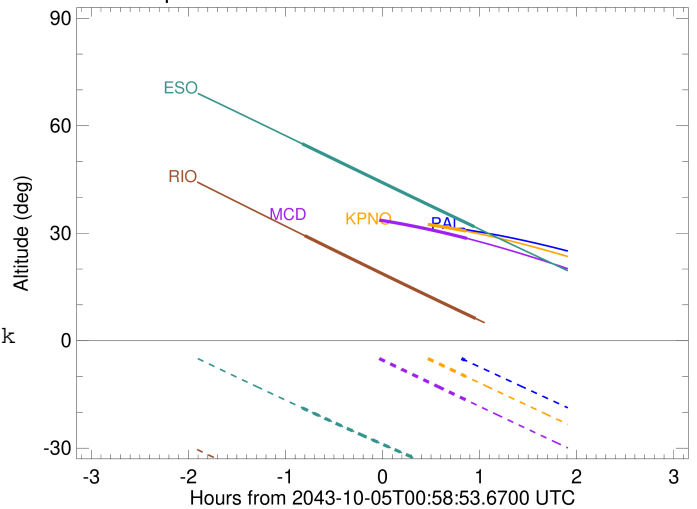
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-05T00:08:38.531	34.84	11.49x	71490.6	27.83	31.06
Jupiter	E	2043-10-05T01:50:20.142	30.61	-9.97	71490.3	30.98	34.40

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-10-05T01:00:08.950
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       : 4068814697912421504
2Mass ID (if available) : 17431921-2317545
ICRS Star Coord at Epoch: 17h 43m 19.22652s -23:17:54.55831s
RUWE (>1.4 is poor) : 0.88
K magnitude          : 9.188
G magnitude          : 14.451
RP magnitude         : 13.135
BP magnitude         : 16.478
DUPflag             : 0
Distance (au)        : 5.396
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 20.80
Sun-Target sep (deg) : 75.08
Sun-Moon sep (deg)   : 54.24
B (ring opening deg) : -2.19
PA of pole (deg)     : 0.96
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation ("): 8.956
C/A sky separation (km): 35051.2
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
    
```



Jupiter 2043-10-05T00:58:53 K9.19 G14.45

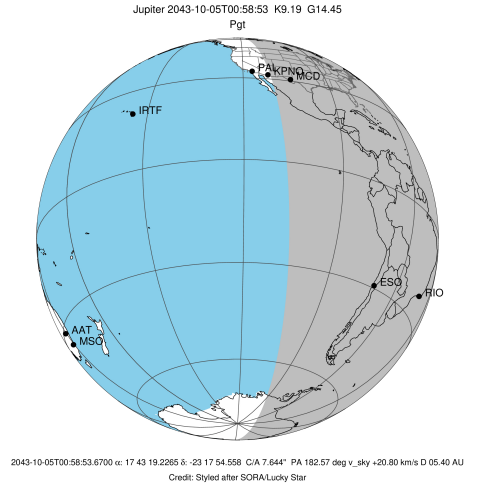


x: target alt < 5.0 deg or sun > -5.0 deg

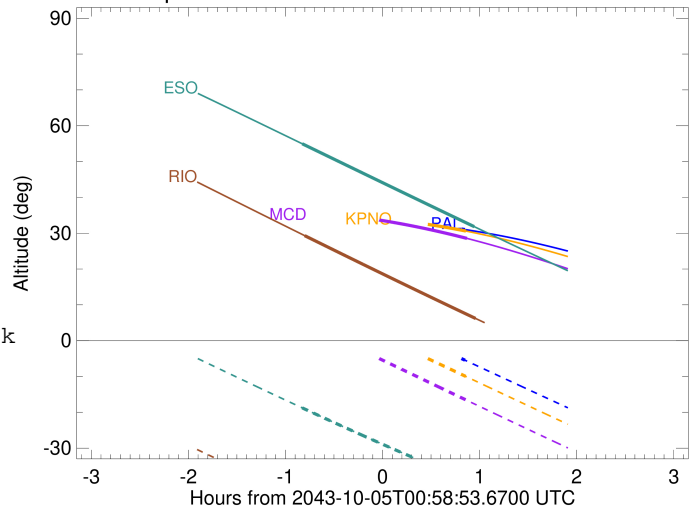
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-05T00:09:12.450	35.93	5.23x	71490.6	27.77	31.00
Jupiter	E	2043-10-05T01:50:58.820	28.56	-16.65	71490.3	30.80	34.22

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch              : 2043-10-05T01:03:46.060
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        : 4068814697912421504
2Mass ID (if available) : 17431921-2317545
ICRS Star Coord at Epoch: 17h 43m 19.22652s -23:17:54.55831s
RUWE (>1.4 is poor)  : 0.88
K magnitude           : 9.188
G magnitude           : 14.451
RP magnitude          : 13.135
BP magnitude          : 16.478
DUPflag              : 0
Distance (au)         : 5.396
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 20.80
Sun-Target sep (deg)  : 75.08
Sun-Moon sep (deg)    : 54.38
B (ring opening deg) : -2.19
PA of pole (deg)      : 0.96
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (" ) : 7.238
C/A sky separation (km) : 28329.5
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
    
```



Jupiter 2043-10-05T00:58:53 K9.19 G14.45

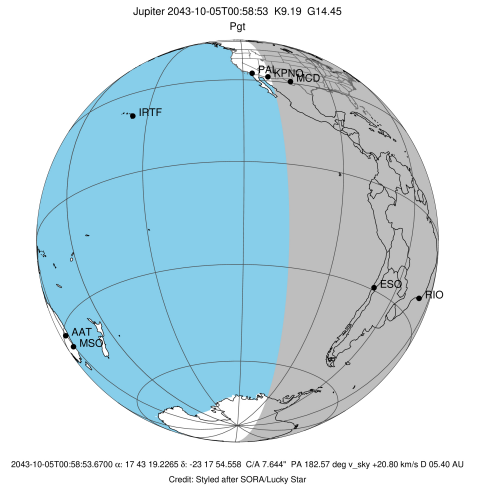


x: target alt < 5.0 deg or sun > -5.0 deg

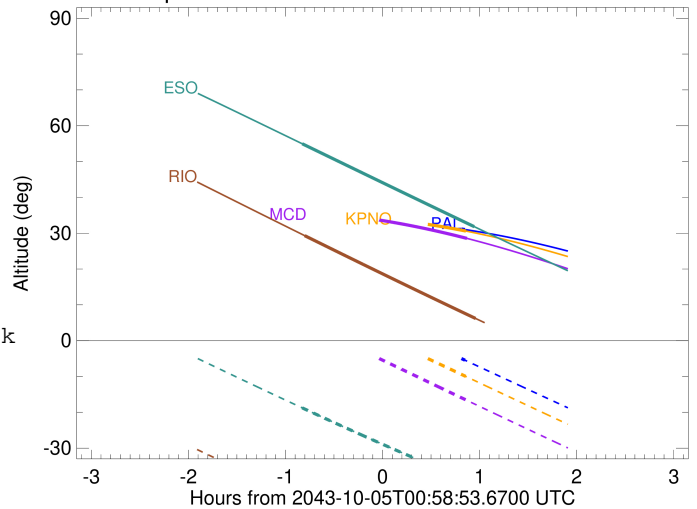
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-10-05T00:10:48.439	29.31	-44.16	71491.1	22.15	24.93
Jupiter	E	2043-10-05T01:56:25.898	6.20	-60.48	71490.9	24.47	27.46

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-10-05T01:02:35.440
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       : 4068814697912421504
2Mass ID (if available) : 17431921-2317545
ICRS Star Coord at Epoch: 17h 43m 19.22652s -23:17:54.55831s
RUWE (>1.4 is poor) : 0.88
K magnitude           : 9.188
G magnitude           : 14.451
RP magnitude          : 13.135
BP magnitude          : 16.478
DUPflag              : 0
Distance (au)        : 5.396
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 20.80
Sun-Target sep (deg) : 75.08
Sun-Moon sep (deg)   : 54.54
B (ring opening deg) : -2.19
PA of pole (deg)     : 0.96
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation ("): 7.317
C/A sky separation (km): 28636.4
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
    
```



Jupiter 2043-10-05T00:58:53 K9.19 G14.45



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	2043-10-05T00:09:19.022	54.95	-18.77	71491.1	22.27	25.06
Jupiter	E	2043-10-05T01:55:37.493	31.82	-39.65	71490.8	24.85	27.86