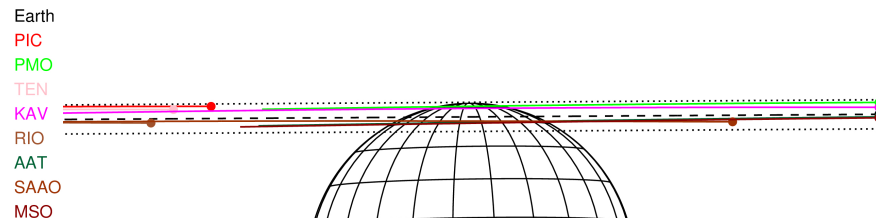
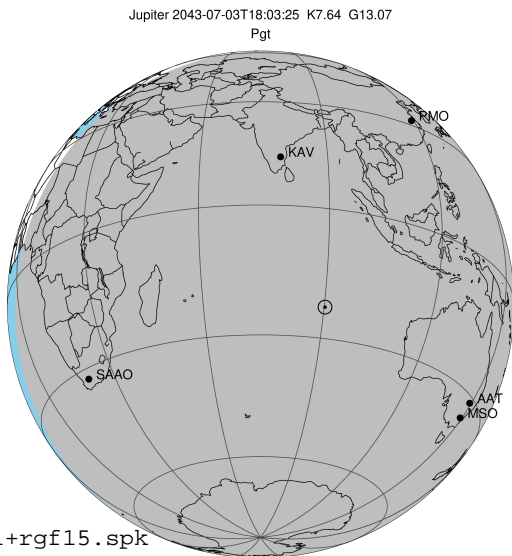


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-07-03T18:03:25.380
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068825551199204736
 2Mass ID (if available) : 17441887-2304072

Jupiter 2043-07-03T18:03:25 K7.64 G13.07 Pgt

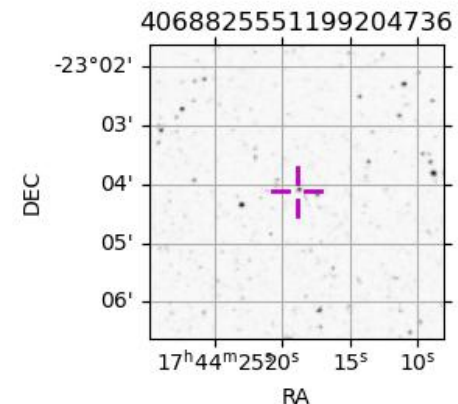
ICRS Star Coord at Epoch: 17h 44m 18.84973s -23:04:07.51007s
 RUWE (>1.4 is poor) : 0.98
 K magnitude : 7.637
 G magnitude : 13.067
 RP magnitude : 12.050
 BP magnitude : 16.220
 DUPflag : 0
 Distance (au) : 4.272
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -15.49
 Sun-Target sep (deg) : 165.27
 Sun-Moon sep (deg) : 152.94
 B (ring opening deg) : -2.42
 PA of pole (deg) : 0.85
 Pole direction: RA (deg): 268.05669
 Dec (deg): 64.49732
 C/A sky separation (") : 21.152
 C/A sky separation (km) : 65538.2
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



2043-07-03T18:03:25.3800 a: 17 44 18.8497 & -23 04 07.510 C/A ***** PA 180.36 deg v_sky -15.49 km/s D 04.27 AU
 Credit: Styled after SORA/Lucky Star

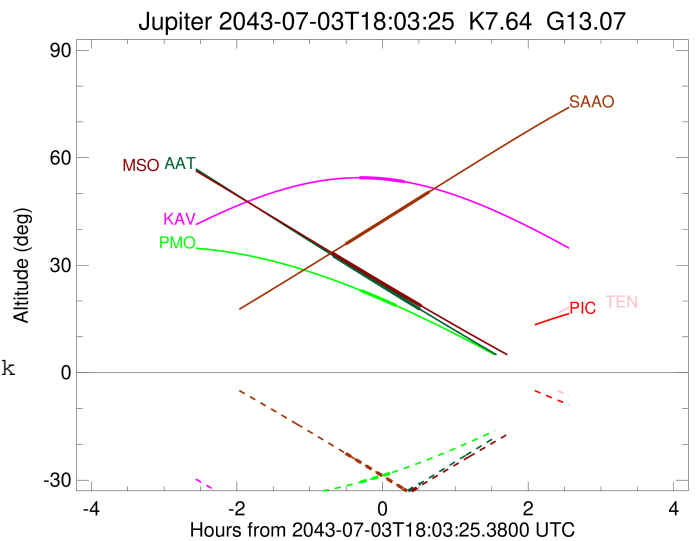
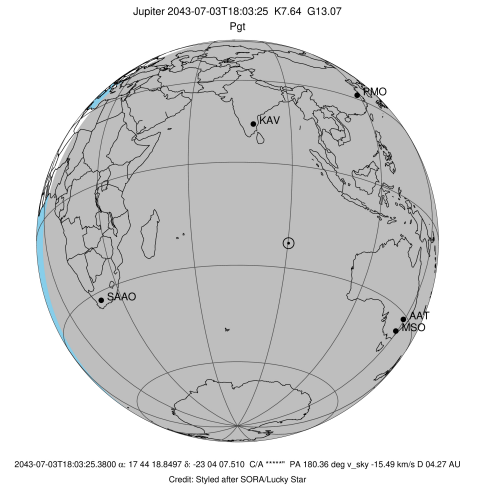
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
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 03 17:45 - JUL 03 18:14	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 03 17:44 - JUL 03 18:21	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 03 17:22 - JUL 03 18:34	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUL 03 17:33 - JUL 03 18:41	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUL 03 17:22 - JUL 03 18:35	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-03T17:59:55.020
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        : 4068825551199204736
2Mass ID (if available) : 17441887-2304072
ICRS Star Coord at Epoch: 17h 44m 18.84973s -23:04:07.51007s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 7.637
G magnitude           : 13.067
RP magnitude          : 12.050
BP magnitude          : 16.220
DUPflag              : 0
Distance (au)         : 4.272
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.49
Sun-Target sep (deg)  : 165.27
Sun-Moon sep (deg)   : 153.72
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.85
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 22.649
C/A sky separation (km): 70176.2
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
    
```

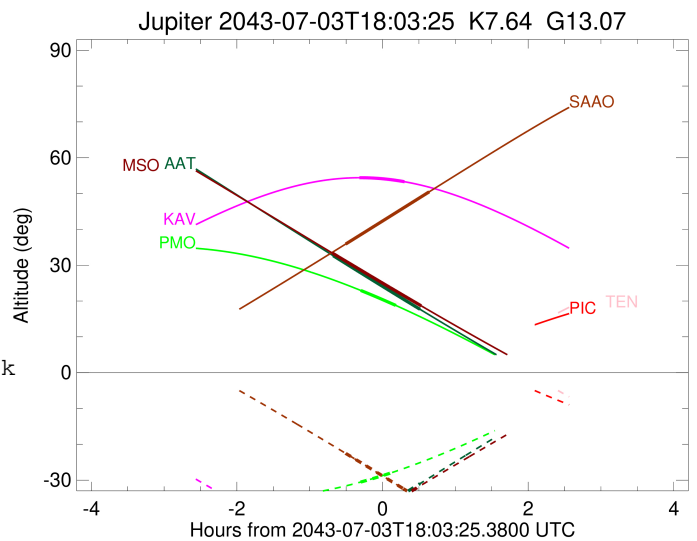
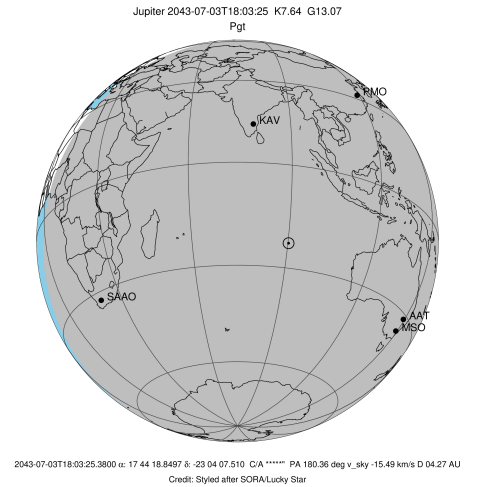


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-03T17:45:31.706	22.95	-30.53	71484.3	78.65	79.97
Jupiter	E	2043-07-03T18:14:19.289	18.78	-27.53	71484.3	78.85	80.15

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-03T18:02:57.860
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        : 4068825551199204736
2Mass ID (if available) : 17441887-2304072
ICRS Star Coord at Epoch: 17h 44m 18.84973s -23:04:07.51007s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 7.637
G magnitude           : 13.067
RP magnitude          : 12.050
BP magnitude          : 16.220
DUPflag              : 0
Distance (au)         : 4.272
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.49
Sun-Target sep (deg)  : 165.27
Sun-Moon sep (deg)   : 153.45
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.85
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 22.347
C/A sky separation (km): 69242.4
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
    
```

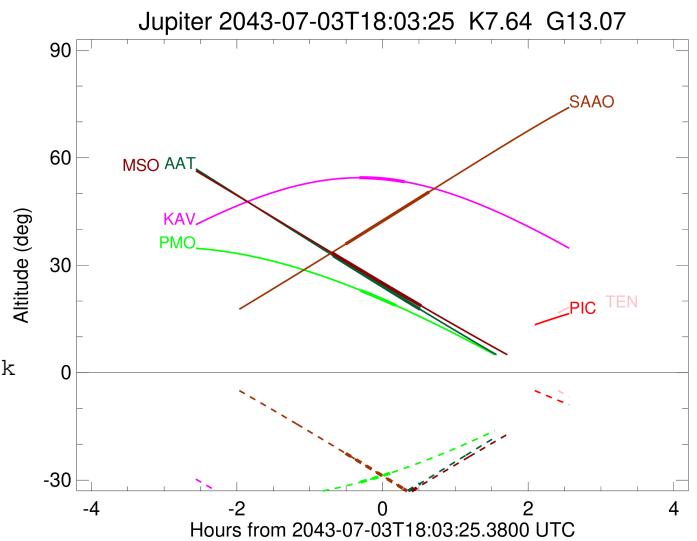
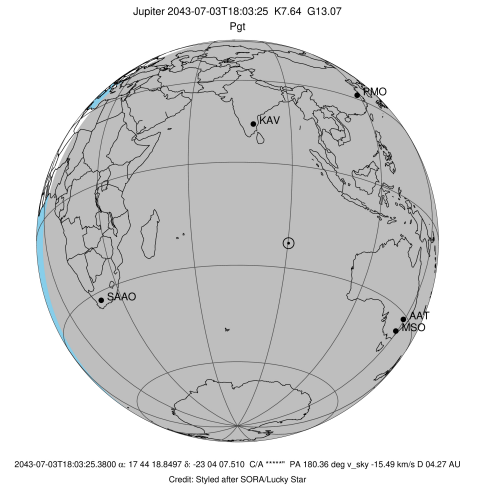


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-03T17:44:21.979	54.41	-51.22	71484.6	74.95	76.67
Jupiter	E	2043-07-03T18:21:34.039	53.30	-53.96	71484.5	75.83	77.45

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-03T17:58:26.230
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       : 4068825551199204736
2Mass ID (if available) : 17441887-2304072
ICRS Star Coord at Epoch: 17h 44m 18.84973s -23:04:07.51007s
RUWE (>1.4 is poor) : 0.98
K magnitude          : 7.637
G magnitude          : 13.067
RP magnitude         : 12.050
BP magnitude         : 16.220
DUPflag             : 0
Distance (au)       : 4.272
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -15.49
Sun-Target sep (deg) : 165.27
Sun-Moon sep (deg)  : 153.80
B (ring opening deg) : -2.42
PA of pole (deg)    : 0.85
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (" ) : 20.373
C/A sky separation (km) : 63124.6
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
    
```

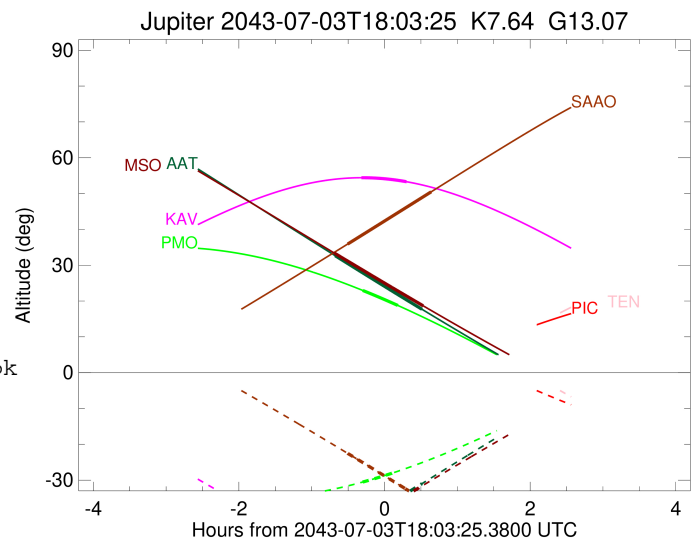
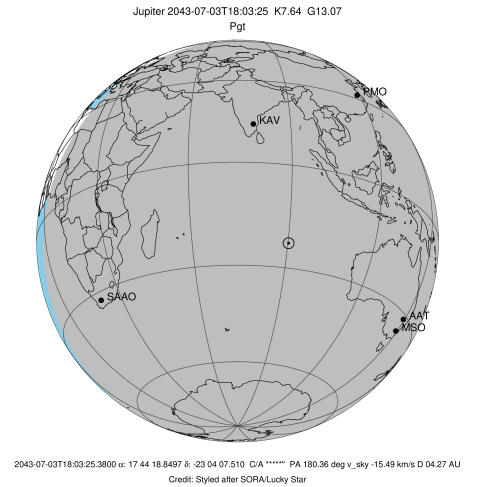


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-03T17:22:39.619	32.68	-46.23	71485.8	61.96	64.88
Jupiter	E	2043-07-03T18:34:21.168	17.68	-30.97	71485.8	61.85	64.77

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-03T18:07:28.860
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        : 4068825551199204736
2Mass ID (if available) : 17441887-2304072
ICRS Star Coord at Epoch: 17h 44m 18.84973s -23:04:07.51007s
RUWE (>1.4 is poor)  : 0.98
K magnitude           : 7.637
G magnitude           : 13.067
RP magnitude          : 12.050
BP magnitude          : 16.220
DUPflag              : 0
Distance (au)         : 4.272
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -15.49
Sun-Target sep (deg)  : 165.27
Sun-Moon sep (deg)    : 152.61
B (ring opening deg)  : -2.42
PA of pole (deg)      : 0.85
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 20.558
C/A sky separation (km) : 63698.9
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
    
```

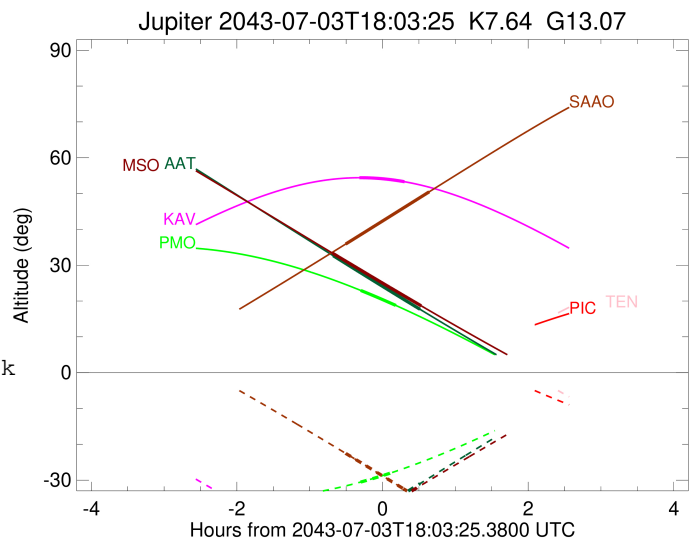
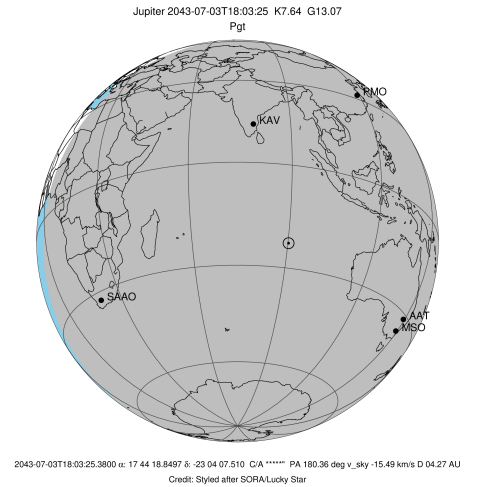


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-03T17:33:01.825	35.89	-22.51	71485.8	61.95	64.87
Jupiter	E	2043-07-03T18:41:50.332	50.46	-36.84	71485.6	63.81	66.59

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-03T17:58:39.480
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        : 4068825551199204736
2Mass ID (if available) : 17441887-2304072
ICRS Star Coord at Epoch: 17h 44m 18.84973s -23:04:07.51007s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 7.637
G magnitude           : 13.067
RP magnitude          : 12.050
BP magnitude          : 16.220
DUPflag              : 0
Distance (au)         : 4.272
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.49
Sun-Target sep (deg)  : 165.27
Sun-Moon sep (deg)    : 153.77
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.85
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 20.253
C/A sky separation (km): 62752.2
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	2043-07-03T17:22:07.852	33.38	-46.34	71485.9	61.31	64.27
Jupiter	E	2043-07-03T18:35:19.428	18.66	-31.41	71485.9	61.24	64.22