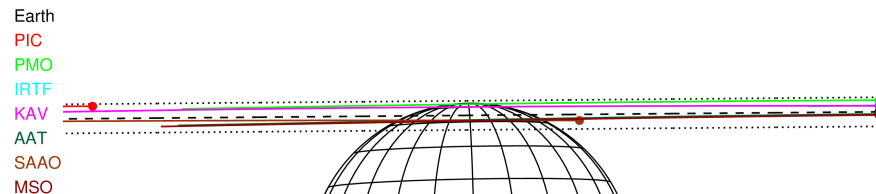
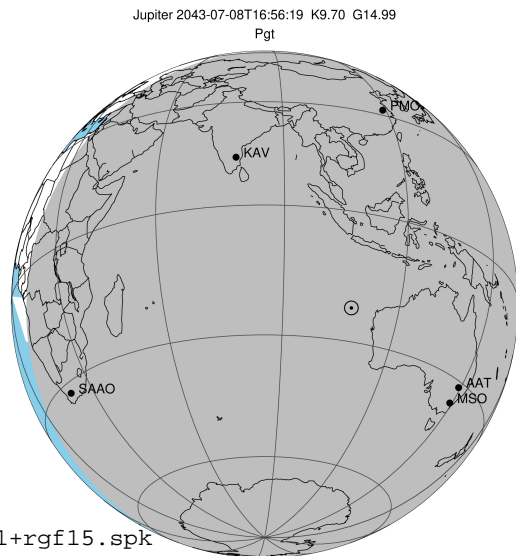


target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-07-08T16:56:19.640  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4116499898698998144  
 2Mass ID (if available) : 17414795-2303515

Jupiter 2043-07-08T16:56:19 K9.70 G14.99 Pgt

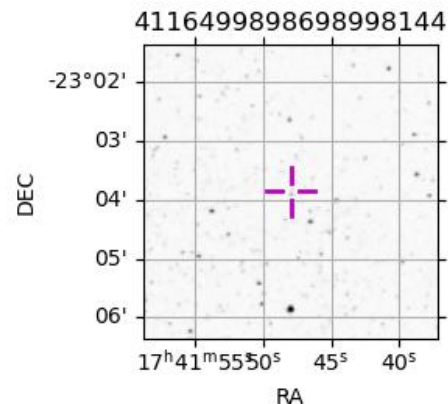
ICRS Star Coord at Epoch: 17h 41m 47.94837s -23°03'51.63812s  
 RUWE (>1.4 is poor) : 1.05  
 K magnitude : 9.701  
 G magnitude : 14.990  
 RP magnitude : 13.647  
 BP magnitude : 17.129  
 DUPflag : 0  
 Distance (au) : 4.293  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -14.69  
 Sun-Target sep (deg) : 159.96  
 Sun-Moon sep (deg) : 133.61  
 B (ring opening deg) : -2.41  
 PA of pole (deg) : 1.12  
 Pole direction: RA (deg): 268.05670  
 Dec (deg): 64.49732  
 C/A sky separation (") : 21.262  
 C/A sky separation (km) : 66206.6  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



2043-07-08T16:56:19.6400 a: 17 41 47.9484 δ: -23 03 51.638 C/A \*\*\*\*\* PA 180.49 deg v\_sky -14.69 km/s D 04.29 AU  
 Credit: Styled after SORA/Lucky Star

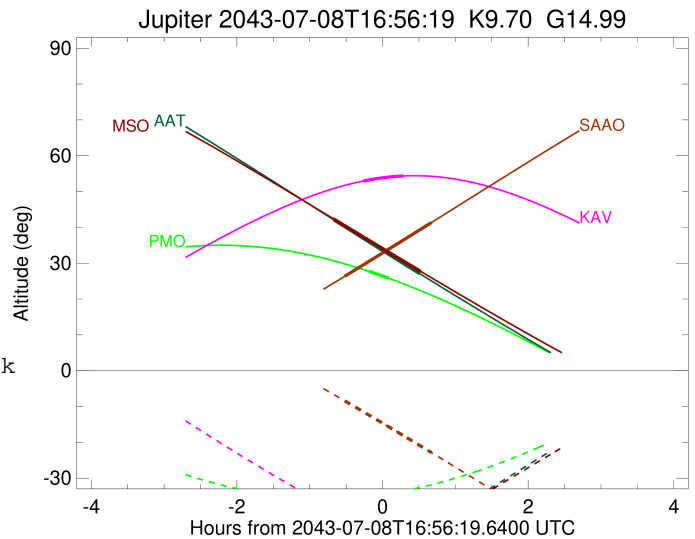
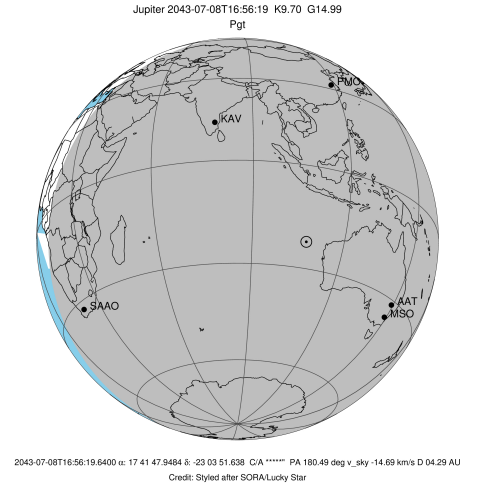
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
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 08 16:45 - JUL 08 17:01	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 08 16:40 - JUL 08 17:13	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 08 16:16 - JUL 08 17:26	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUL 08 16:25 - JUL 08 17:36	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	JUL 08 16:15 - JUL 08 17:27	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-08T16:53:28.750
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      : 4116499898698998144
2Mass ID (if available) : 17414795-2303515
ICRS Star Coord at Epoch: 17h 41m 47.94837s -23:03:51.63812s
RUWE (>1.4 is poor) : 1.05
K magnitude          : 9.701
G magnitude          : 14.990
RP magnitude         : 13.647
BP magnitude         : 17.129
DUPflag             : 0
Distance (au)       : 4.293
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.96
Sun-Moon sep (deg)  : 133.67
B (ring opening deg) : -2.41
PA of pole (deg)    : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation (" ) : 22.834
C/A sky separation (km) : 71103.0
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
    
```

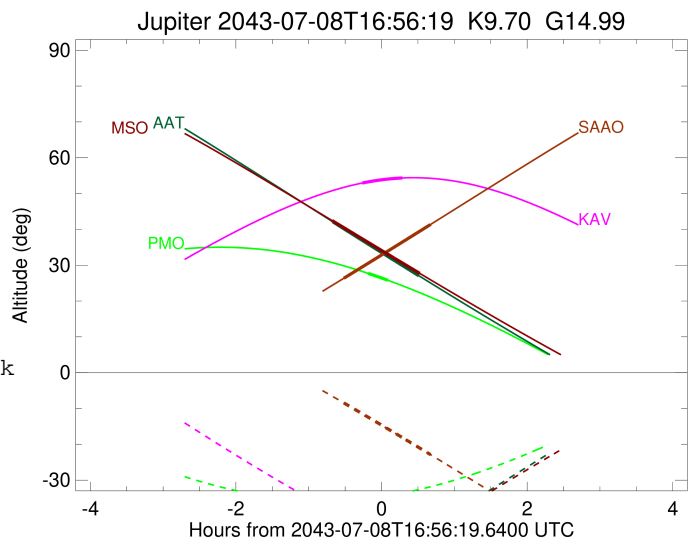
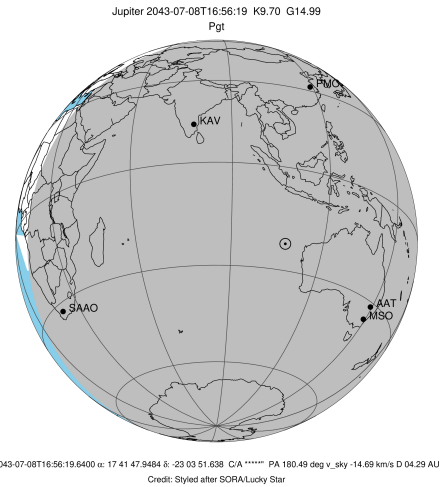


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T16:45:17.316	27.72	-35.03	71484.2	83.31	84.10
Jupiter	E	2043-07-08T17:01:40.449	25.78	-34.29	71484.2	83.89	84.61

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-08T16:57:01.470
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      : 4116499898698998144
2Mass ID (if available) : 17414795-2303515
ICRS Star Coord at Epoch: 17h 41m 47.94837s -23:03:51.63812s
RUWE (>1.4 is poor) : 1.05
K magnitude          : 9.701
G magnitude          : 14.990
RP magnitude         : 13.647
BP magnitude         : 17.129
DUPflag             : 0
Distance (au)       : 4.293
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.96
Sun-Moon sep (deg)  : 134.30
B (ring opening deg) : -2.41
PA of pole (deg)    : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation (" ) : 22.448
C/A sky separation (km) : 69899.1
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
    
```

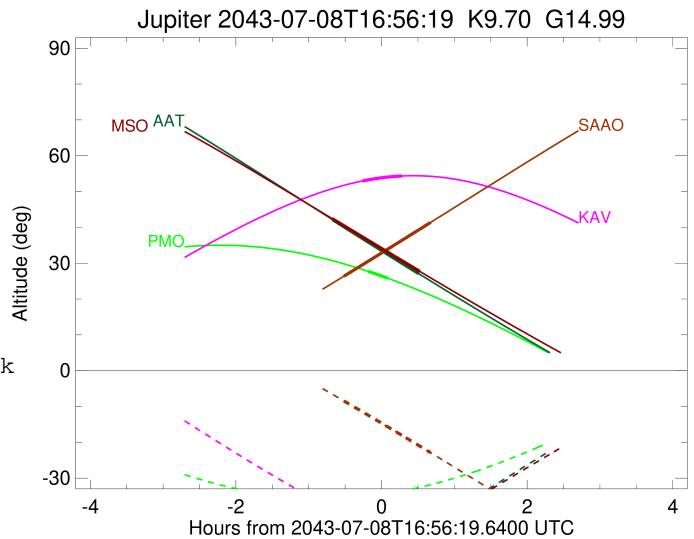
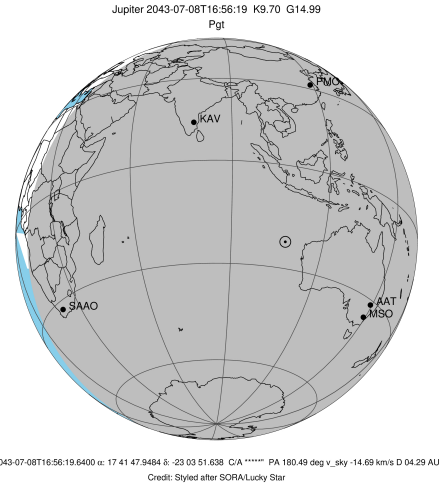


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T16:40:30.467	52.93	-42.86	71484.5	76.95	78.46
Jupiter	E	2043-07-08T17:13:32.345	54.34	-47.87	71484.4	78.35	79.70

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-08T16:51:30.270
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      : 4116499898698998144
2Mass ID (if available) : 17414795-2303515
ICRS Star Coord at Epoch: 17h 41m 47.94837s -23:03:51.63812s
RUWE (>1.4 is poor) : 1.05
K magnitude          : 9.701
G magnitude          : 14.990
RP magnitude         : 13.647
BP magnitude         : 17.129
DUPflag             : 0
Distance (au)       : 4.293
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.96
Sun-Moon sep (deg)  : 133.47
B (ring opening deg) : -2.41
PA of pole (deg)    : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation ("): 20.615
C/A sky separation (km): 64191.3
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
    
```

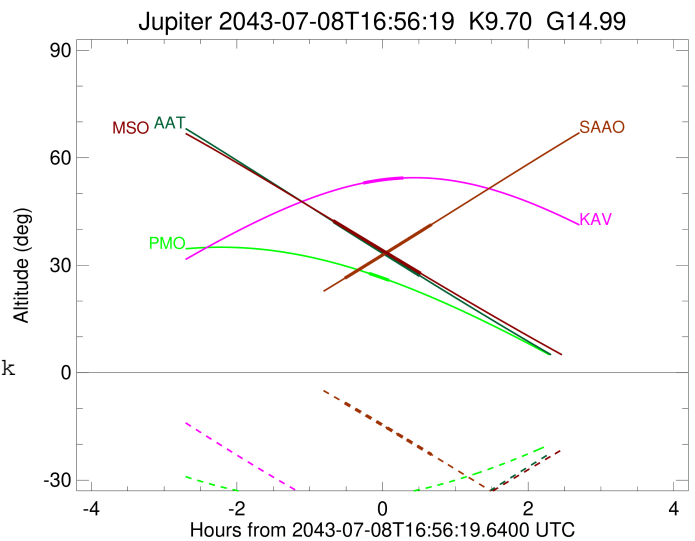
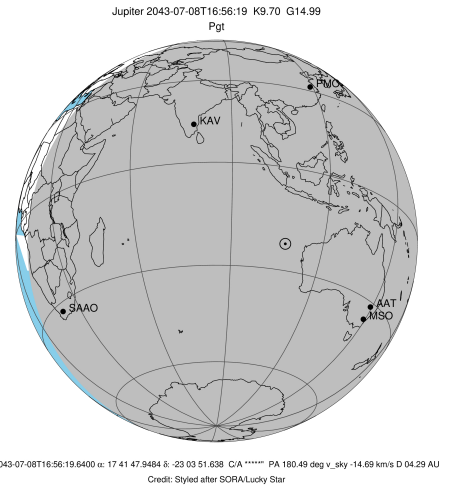


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T16:16:17.312	42.10	-60.38	71485.6	63.66	66.45
Jupiter	E	2043-07-08T17:26:51.220	27.11	-45.32	71485.6	63.87	66.64

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-08T17:01:06.860
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      : 4116499898698998144
2Mass ID (if available) : 17414795-2303515
ICRS Star Coord at Epoch: 17h 41m 47.94837s -23:03:51.63812s
RUWE (>1.4 is poor) : 1.05
K magnitude          : 9.701
G magnitude          : 14.990
RP magnitude         : 13.647
BP magnitude         : 17.129
DUPflag             : 0
Distance (au)       : 4.293
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.96
Sun-Moon sep (deg)  : 134.48
B (ring opening deg) : -2.41
PA of pole (deg)    : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation ("): 20.556
C/A sky separation (km): 64010.0
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
    
```

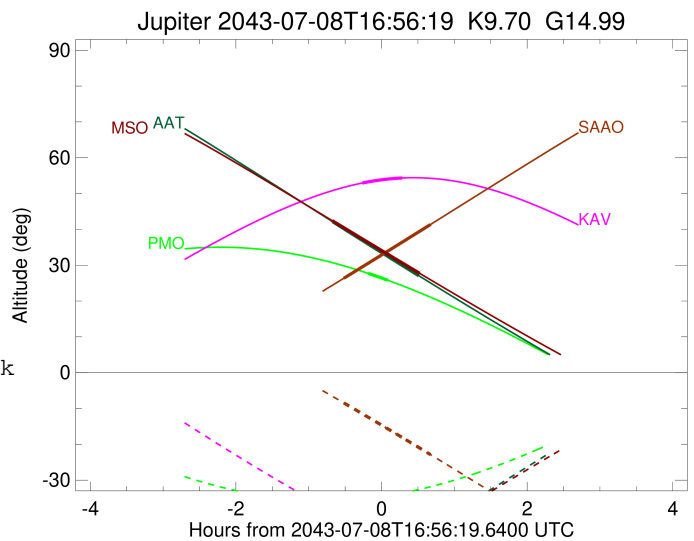
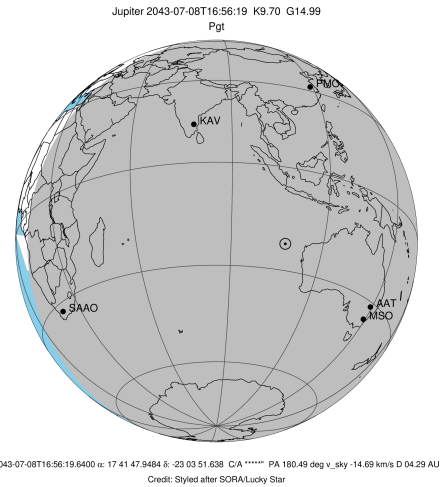


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-08T16:25:20.284	26.36	-8.45	71485.8	62.28	65.18
Jupiter	E	2043-07-08T17:36:46.425	41.37	-22.89	71485.5	64.60	67.31

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-08T16:51:43.000
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       : 4116499898698998144
2Mass ID (if available) : 17414795-2303515
ICRS Star Coord at Epoch: 17h 41m 47.94837s -23:03:51.63812s
RUWE (>1.4 is poor) : 1.05
K magnitude          : 9.701
G magnitude          : 14.990
RP magnitude         : 13.647
BP magnitude         : 17.129
DUPflag             : 0
Distance (au)        : 4.293
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.69
Sun-Target sep (deg) : 159.96
Sun-Moon sep (deg)   : 133.49
B (ring opening deg) : -2.41
PA of pole (deg)     : 1.12
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49732
C/A sky separation ("): 20.489
C/A sky separation (km): 63800.9
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	2043-07-08T16:15:36.159	42.45	-59.68	71485.7	62.94	65.79
Jupiter	E	2043-07-08T17:27:57.912	27.69	-45.09	71485.7	63.19	66.01