

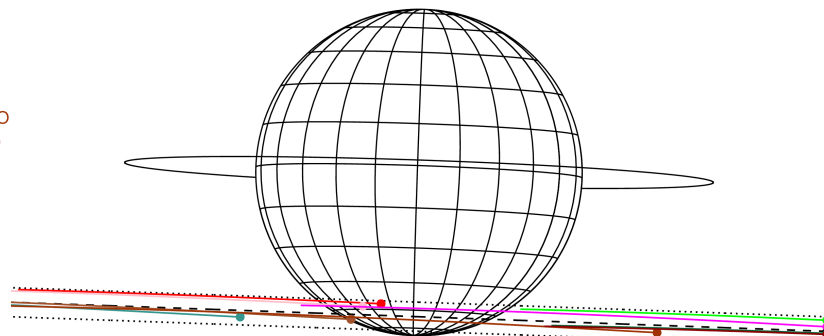
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-05-09T22:30:04.790  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4066632339034362624  
 2Mass ID (if available) : 18102017-2300287

Jupiter 2043-05-09T22:30:04 K9.35 G13.48 Pgt

ICRS Star Coord at Epoch: 18h 10m 20.18334s -23:00:28.67595s  
 RUWE (>1.4 is poor) : 0.99  
 K magnitude : 9.350  
 G magnitude : 13.482  
 RP magnitude : 12.395  
 BP magnitude : 14.700  
 DUPflag : 0  
 Distance (au) : 4.505  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -8.21  
 Sun-Target sep (deg) : 136.22  
 Sun-Moon sep (deg) : 147.34  
 B (ring opening deg) : -2.42  
 PA of pole (deg) : -1.95  
 Pole direction: RA (deg): 268.05666  
 Dec (deg): 64.49732  
 C/A sky separation (") : 19.326  
 C/A sky separation (km) : 63147.4  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



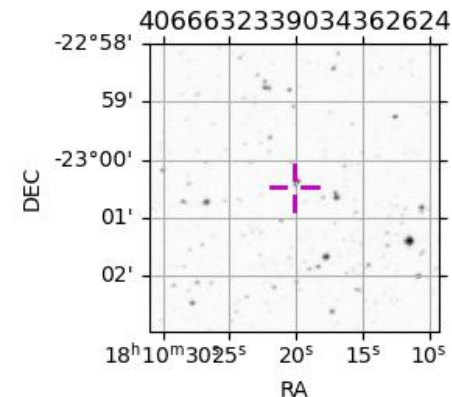
Earth  
 PIC  
 PMO  
 TEN  
 KAV  
 RIO  
 ESO  
 AAT  
 SAAO  
 MSO



2043-05-09T22:30:04.7900 α: 18 10 20.1833 δ: -23 00 28.676 C/A \*\*\*\*\* PA 357.95 deg v\_sky - 8.21 km/s D 04.51 AU  
 Credit: Styled after SORA/Lucky Star

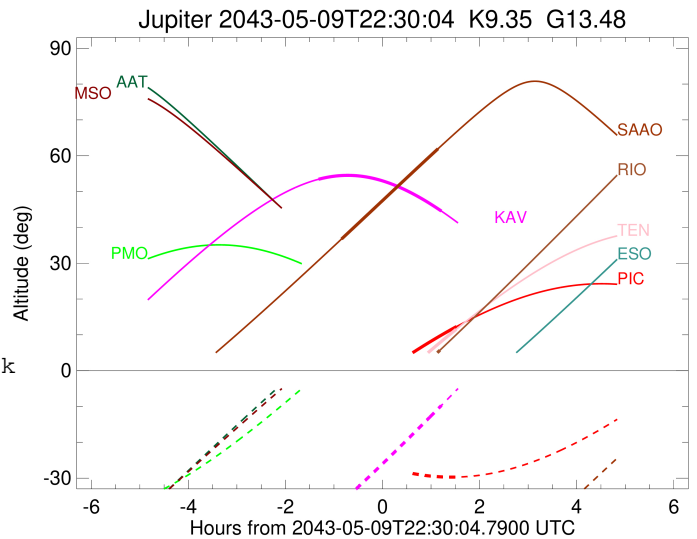
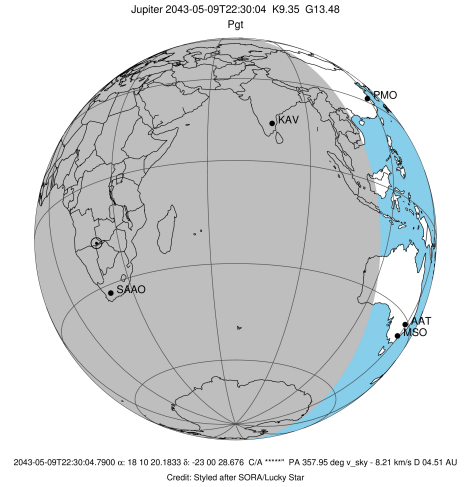
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+	MAY 10 00:01 - MAY 10 00:01	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	+	MAY 10 00:01 - MAY 10 00:01	Pne
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	MAY 09 21:11 - MAY 09 23:42	Pie
RIO	Rio de Janeiro	-22.9	316.8	+ +	MAY 09 23:41 - MAY 09 23:41	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	+ +	MAY 09 21:39 - MAY 09 23:38	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-09T22:39:57.080
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      : 4066632339034362624
2Mass ID (if available) : 18102017-2300287
ICRS Star Coord at Epoch: 18h 10m 20.18334s -23:00:28.67595s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 9.350
G magnitude          : 13.482
RP magnitude         : 12.395
BP magnitude         : 14.700
DUPflag             : 0
Distance (au)       : 4.505
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.21
Sun-Target sep (deg) : 136.22
Sun-Moon sep (deg)  : 146.85
B (ring opening deg) : -2.42
PA of pole (deg)    : -1.95
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 17.826
C/A sky separation (km): 58245.3
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
    
```

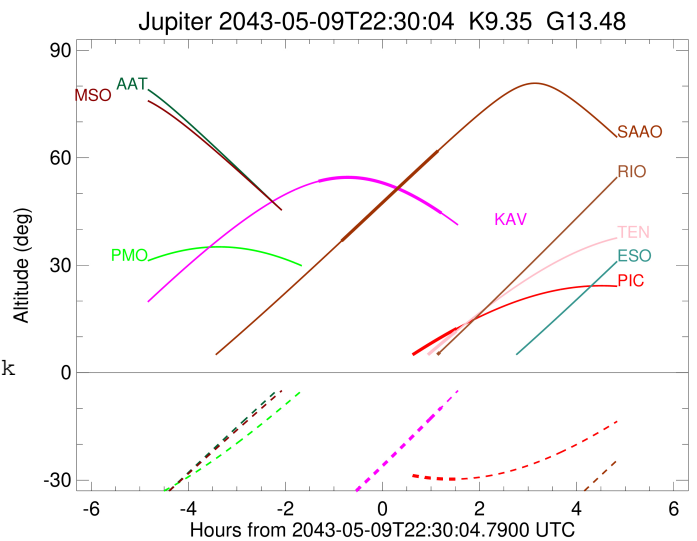
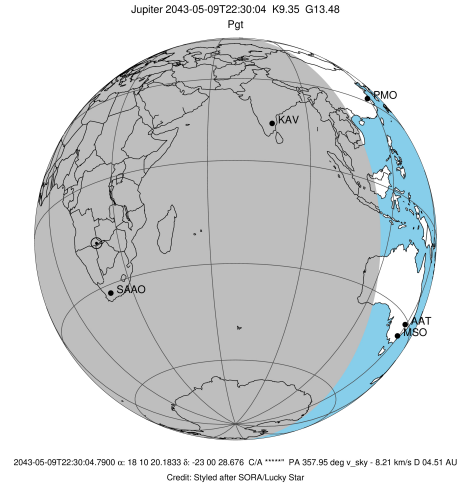


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-09T21:16:49.433	-12.79x	-19.53	71486.5	-55.45	-58.80
Jupiter	E	2043-05-10T00:01:44.315	12.32	-29.70	71486.8	-53.71	-57.15

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-09T22:43:22.250
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      : 4066632339034362624
2Mass ID (if available) : 18102017-2300287
ICRS Star Coord at Epoch: 18h 10m 20.18334s -23:00:28.67595s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 9.350
G magnitude          : 13.482
RP magnitude         : 12.395
BP magnitude         : 14.700
DUPflag             : 0
Distance (au)       : 4.505
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.21
Sun-Target sep (deg) : 136.22
Sun-Moon sep (deg)  : 146.60
B (ring opening deg) : -2.42
PA of pole (deg)    : -1.95
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (" ) : 18.312
C/A sky separation (km) : 59834.7
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
    
```

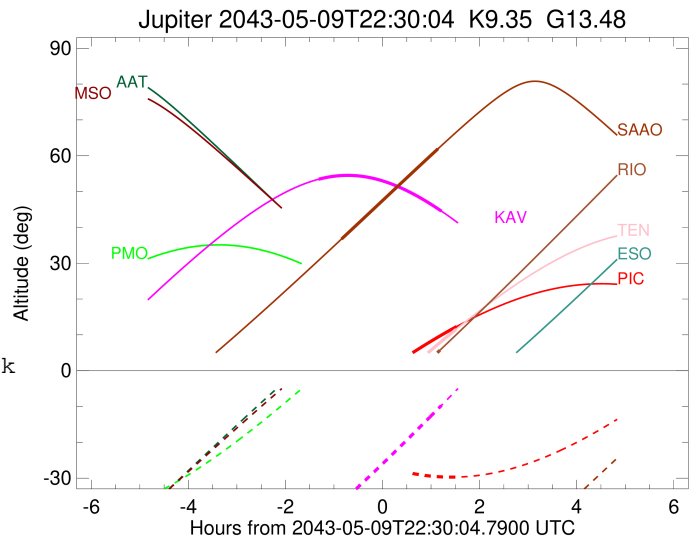
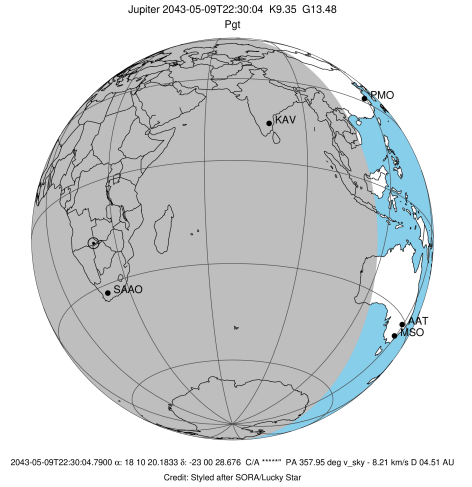


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-09T21:24:00.755	-19.93x	-20.21	71486.2	-57.95	-61.15
Jupiter	E	2043-05-10T00:01:09.872	11.56	-41.99	71486.5	-55.66	-58.99

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-09T22:26:54.900
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       : 4066632339034362624
2Mass ID (if available) : 18102017-2300287
ICRS Star Coord at Epoch: 18h 10m 20.18334s -23:00:28.67595s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 9.350
G magnitude           : 13.482
RP magnitude          : 12.395
BP magnitude          : 14.700
DUPflag              : 0
Distance (au)        : 4.505
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.21
Sun-Target sep (deg) : 136.22
Sun-Moon sep (deg)   : 148.00
B (ring opening deg) : -2.42
PA of pole (deg)     : -1.95
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 18.218
C/A sky separation (km): 59528.6
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
    
```

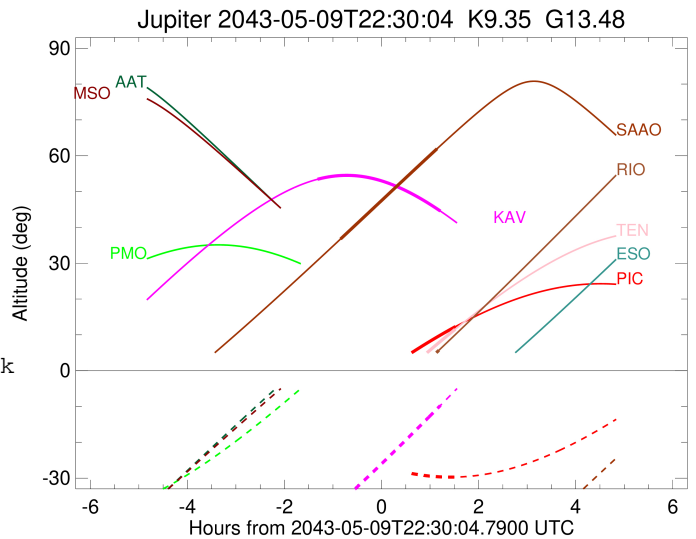
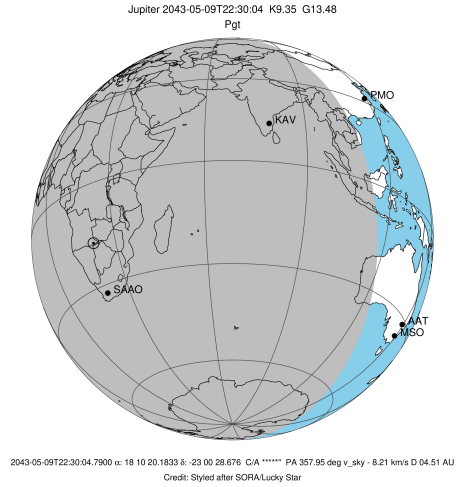


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-09T21:11:04.877	53.43	-42.34	71486.4	-56.27	-59.57
Jupiter	E	2043-05-09T23:42:51.151	44.54	-9.72	71486.4	-56.71	-59.98

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-09T22:44:23.650
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      : 4066632339034362624
2Mass ID (if available) : 18102017-2300287
ICRS Star Coord at Epoch: 18h 10m 20.18334s -23:00:28.67595s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 9.350
G magnitude          : 13.482
RP magnitude         : 12.395
BP magnitude         : 14.700
DUPflag             : 0
Distance (au)       : 4.505
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -8.21
Sun-Target sep (deg) : 136.22
Sun-Moon sep (deg)  : 146.46
B (ring opening deg) : -2.42
PA of pole (deg)    : -1.95
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (" ) : 20.169
C/A sky separation (km) : 65901.6
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
    
```

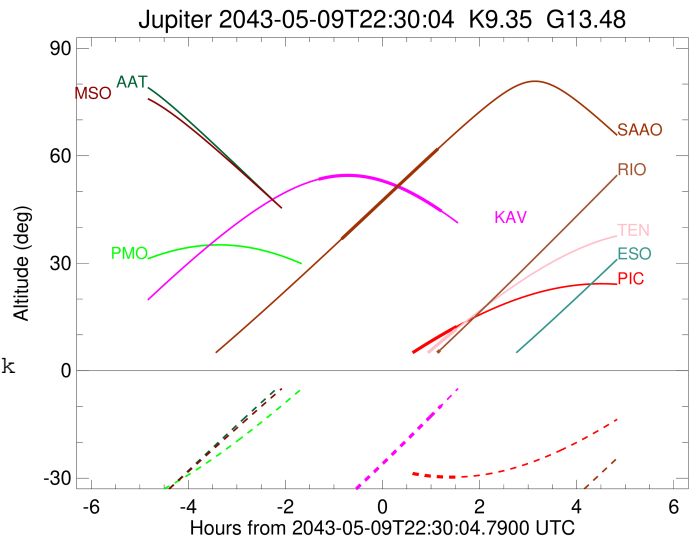
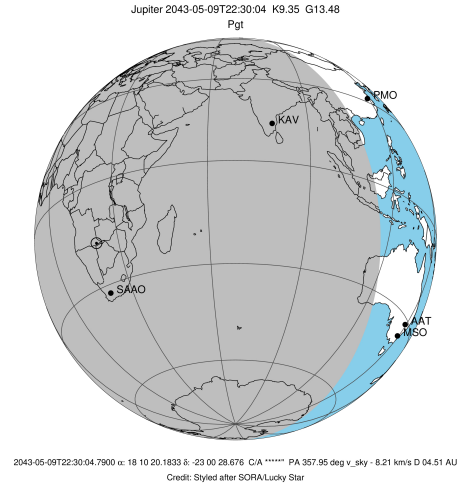


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-09T21:46:52.948	-17.47x	-19.58	71485.0	-68.30	-70.68
Jupiter	E	2043-05-09T23:41:01.844	5.70	-45.69	71485.3	-65.82	-68.42

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-09T22:39:25.890
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      : 4066632339034362624
2Mass ID (if available) : 18102017-2300287
ICRS Star Coord at Epoch: 18h 10m 20.18334s -23:00:28.67595s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 9.350
G magnitude          : 13.482
RP magnitude         : 12.395
BP magnitude         : 14.700
DUPflag             : 0
Distance (au)       : 4.505
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.21
Sun-Target sep (deg) : 136.22
Sun-Moon sep (deg)  : 147.18
B (ring opening deg) : -2.42
PA of pole (deg)    : -1.95
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 19.780
C/A sky separation (km): 64631.8
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	2043-05-09T21:39:26.310	36.74	-70.95	71485.3	-65.45	-68.08
Jupiter	E	2043-05-09T23:38:48.073	61.95	-69.15	71485.5	-63.96	-66.73