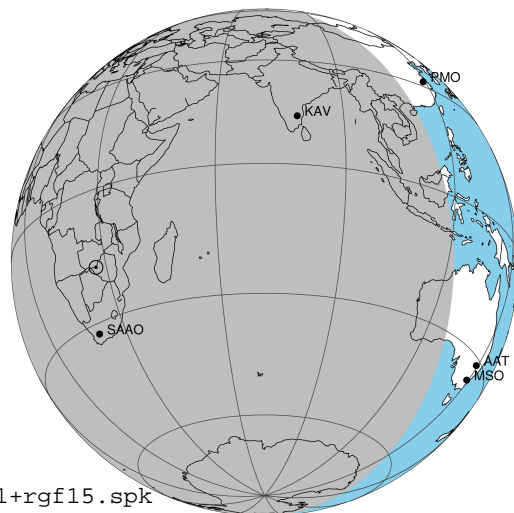


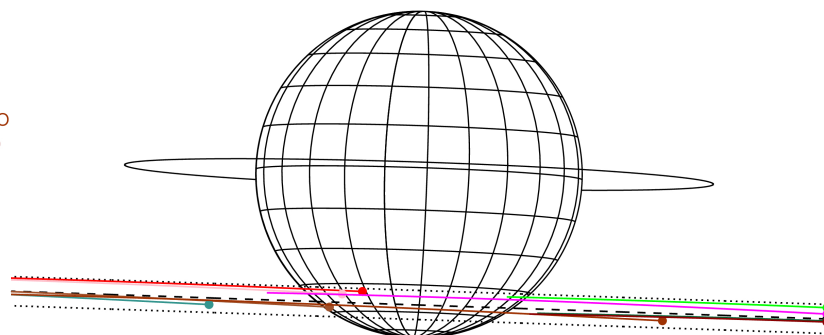
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-05-11T22:08:56.120  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4066539292907953280  
 2Mass ID (if available) : 18094750-2300424

Jupiter 2043-05-11T22:08:56 K9.78 G14.02 Pgt

ICRS Star Coord at Epoch: 18h 09m 47.51635s -23:00:42.56379s  
 RUWE (>1.4 is poor) : 1.07  
 K magnitude : 9.783  
 G magnitude : 14.023  
 RP magnitude : 12.908  
 BP magnitude : 15.293  
 DUPflag : 0  
 Distance (au) : 4.483  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -8.93  
 Sun-Target sep (deg) : 138.27  
 Sun-Moon sep (deg) : 173.96  
 B (ring opening deg) : -2.42  
 PA of pole (deg) : -1.89  
 Pole direction: RA (deg): 268.05666  
 Dec (deg): 64.49732  
 C/A sky separation (") : 17.576  
 C/A sky separation (km) : 57150.1  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



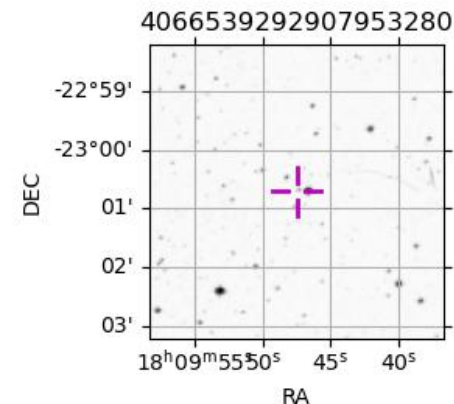
Earth  
 PIC  
 PMO  
 TEN  
 KAV  
 RIO  
 ESO  
 AAT  
 SAAO  
 MSO



2043-05-11T22:08:56.1200 α: 18 09 47.5163 δ: -23 00 42.564 C/A \*\*\*\*\* PA 358.05 deg v\_sky - 8.93 km/s D 04.48 AU  
 Credit: Styled after SORA/Lucky Star

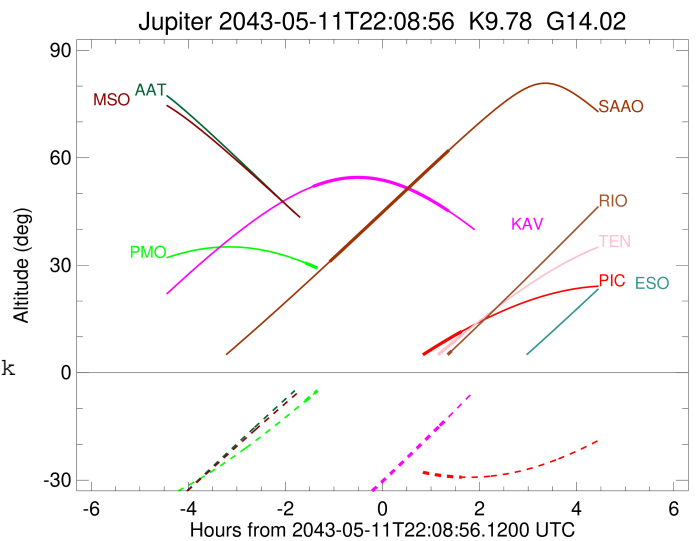
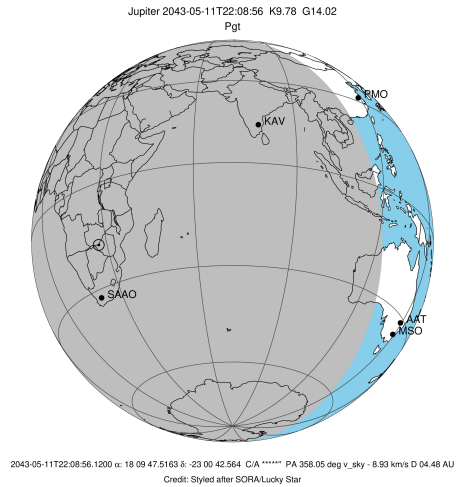
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+	MAY 11 23:46 - MAY 11 23:46	Pne
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	MAY 11 20:33 - MAY 11 20:33	Pin
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 11 23:47 - MAY 11 23:47	Pne
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	MAY 11 20:42 - MAY 11 23:30	Pie
RIO	Rio de Janeiro	-22.9	316.8	+ +	MAY 11 23:34 - MAY 11 23:34	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 11 21:03 - MAY 11 23:31	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-11T22:18:01.640
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       : 4066539292907953280
2Mass ID (if available) : 18094750-2300424
ICRS Star Coord at Epoch: 18h 09m 47.51635s -23:00:42.56379s
RUWE (>1.4 is poor) : 1.07
K magnitude           : 9.783
G magnitude           : 14.023
RP magnitude          : 12.908
BP magnitude          : 15.293
DUPflag              : 0
Distance (au)         : 4.483
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -8.93
Sun-Target sep (deg) : 138.27
Sun-Moon sep (deg)   : 174.28
B (ring opening deg) : -2.42
PA of pole (deg)     : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 16.100
C/A sky separation (km): 52349.1
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
    
```

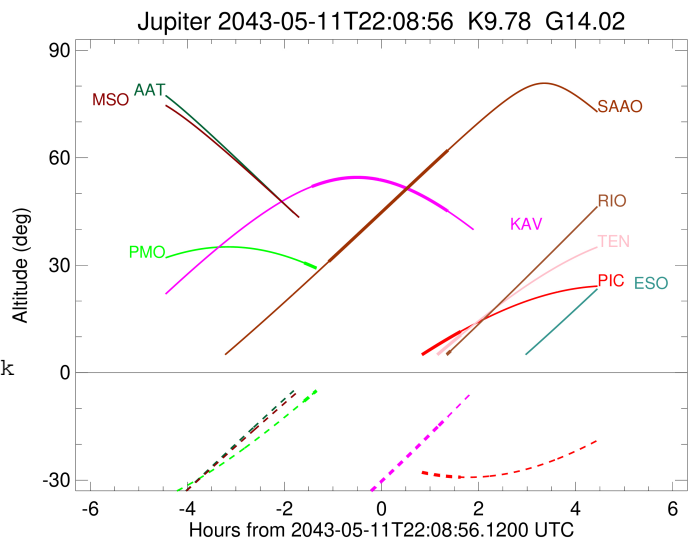
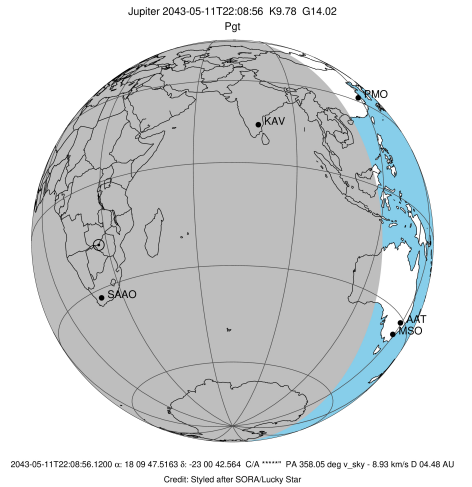


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-11T20:47:49.402	-16.40x	-15.45	71487.6	-47.90	-51.55
Jupiter	E	2043-05-11T23:46:45.778	11.50	-29.17	71487.8	-46.31	-49.99

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-11T22:00:08.250
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       : 4066539292907953280
2Mass ID (if available) : 18094750-2300424
ICRS Star Coord at Epoch: 18h 09m 47.51635s -23:00:42.56379s
RUWE (>1.4 is poor) : 1.07
K magnitude           : 9.783
G magnitude           : 14.023
RP magnitude          : 12.908
BP magnitude          : 15.293
DUPflag              : 0
Distance (au)        : 4.483
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.93
Sun-Target sep (deg) : 138.27
Sun-Moon sep (deg)   : 174.88
B (ring opening deg) : -2.42
PA of pole (deg)     : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 16.214
C/A sky separation (km): 52721.8
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
    
```

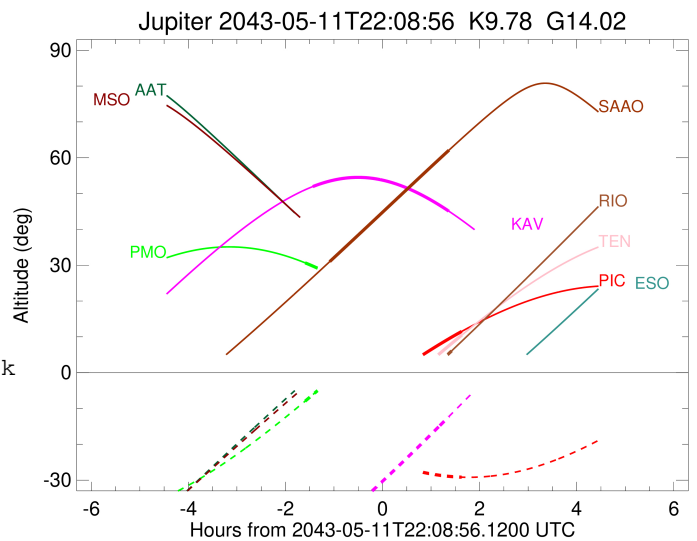
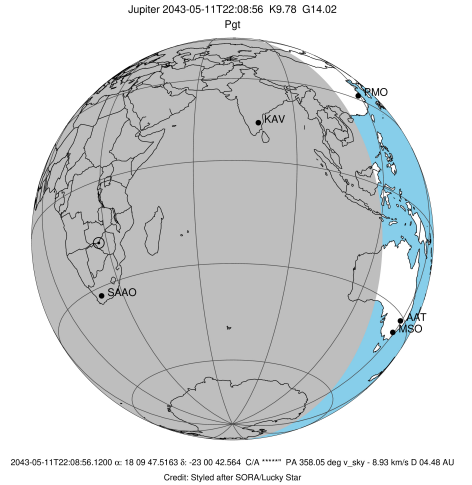


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-11T20:33:14.974	30.66	-7.96	71487.7	-46.91	-50.58
Jupiter	E	2043-05-11T23:27:54.278	5.42	27.54x	71487.5	-48.25	-51.89

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-11T22:20:56.160
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      : 4066539292907953280
2Mass ID (if available) : 18094750-2300424
ICRS Star Coord at Epoch: 18h 09m 47.51635s -23:00:42.56379s
RUWE (>1.4 is poor) : 1.07
K magnitude          : 9.783
G magnitude          : 14.023
RP magnitude         : 12.908
BP magnitude         : 15.293
DUPflag             : 0
Distance (au)       : 4.483
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.93
Sun-Target sep (deg) : 138.27
Sun-Moon sep (deg)  : 173.94
B (ring opening deg) : -2.42
PA of pole (deg)    : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 16.600
C/A sky separation (km): 53976.2
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
    
```

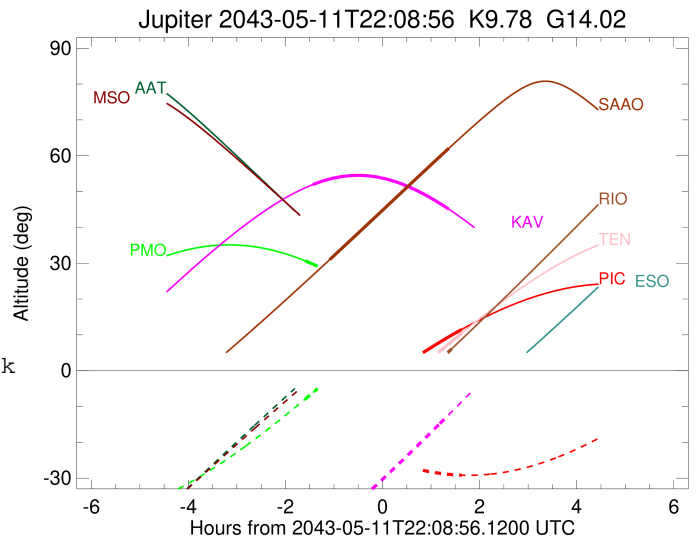
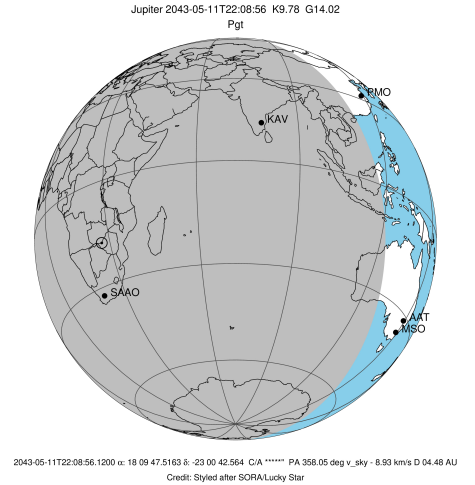


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-11T20:53:05.074	-24.74x	-14.11	71487.3	-50.06	-53.64
Jupiter	E	2043-05-11T23:47:01.768	10.50	-40.35	71487.5	-47.97	-51.62

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-11T22:06:49.750
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        : 4066539292907953280
2Mass ID (if available) : 18094750-2300424
ICRS Star Coord at Epoch: 18h 09m 47.51635s -23:00:42.56379s
RUWE (>1.4 is poor) : 1.07
K magnitude           : 9.783
G magnitude           : 14.023
RP magnitude          : 12.908
BP magnitude          : 15.293
DUPflag              : 0
Distance (au)         : 4.483
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -8.93
Sun-Target sep (deg) : 138.27
Sun-Moon sep (deg)   : 174.62
B (ring opening deg) : -2.42
PA of pole (deg)     : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 16.453
C/A sky separation (km): 53497.8
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
    
```

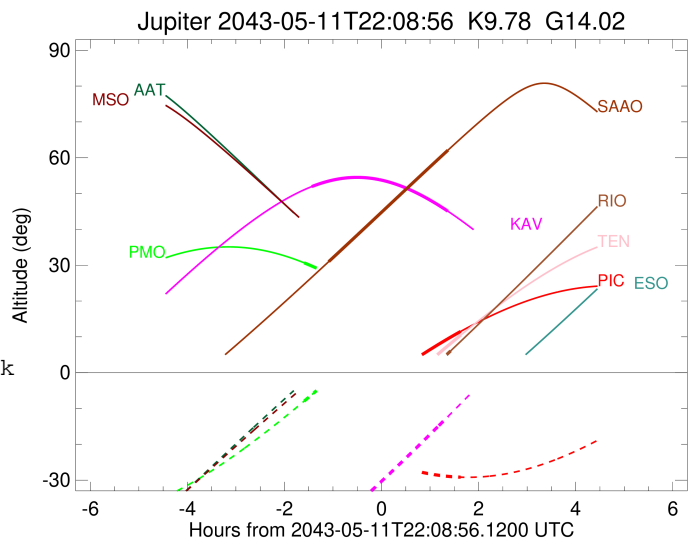
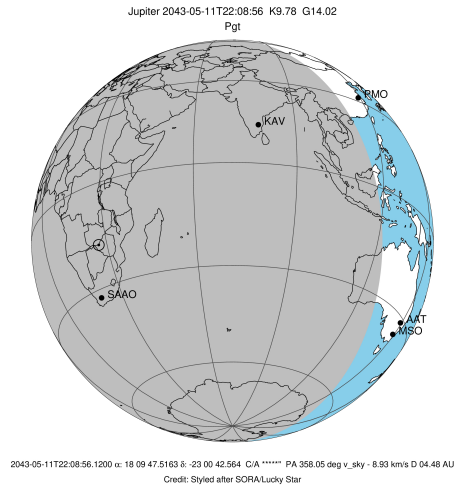


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-11T20:42:48.648	51.95	-47.18	71487.5	-48.41	-52.04
Jupiter	E	2043-05-11T23:30:53.450	45.08	-12.28	71487.4	-48.76	-52.38

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-11T22:21:26.180
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       : 4066539292907953280
2Mass ID (if available) : 18094750-2300424
ICRS Star Coord at Epoch: 18h 09m 47.51635s -23:00:42.56379s
RUWE (>1.4 is poor) : 1.07
K magnitude           : 9.783
G magnitude           : 14.023
RP magnitude         : 12.908
BP magnitude         : 15.293
DUPflag              : 0
Distance (au)        : 4.483
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.93
Sun-Target sep (deg) : 138.27
Sun-Moon sep (deg)   : 173.13
B (ring opening deg) : -2.42
PA of pole (deg)     : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 18.469
C/A sky separation (km): 60052.8
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
    
```

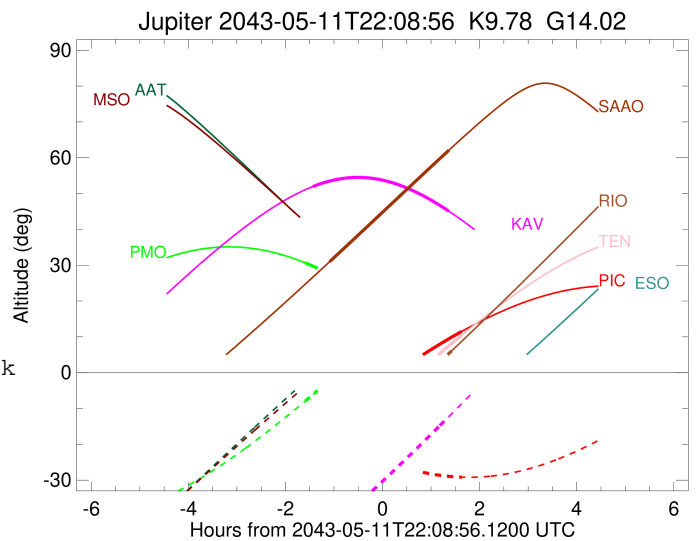
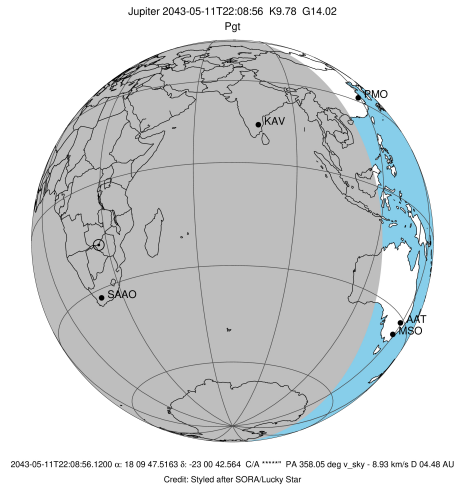


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-11T21:07:08.114	-23.22x	-10.85	71486.2	-58.12	-61.31
Jupiter	E	2043-05-11T23:34:26.580	6.09	-44.31	71486.5	-55.93	-59.25

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-11T22:17:48.310
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        : 4066539292907953280
2Mass ID (if available) : 18094750-2300424
ICRS Star Coord at Epoch: 18h 09m 47.51635s -23:00:42.56379s
RUWE (>1.4 is poor) : 1.07
K magnitude           : 9.783
G magnitude           : 14.023
RP magnitude          : 12.908
BP magnitude          : 15.293
DUPflag              : 0
Distance (au)         : 4.483
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -8.93
Sun-Target sep (deg)  : 138.27
Sun-Moon sep (deg)    : 173.52
B (ring opening deg) : -2.42
PA of pole (deg)     : -1.89
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (") : 18.059
C/A sky separation (km) : 58720.1
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	2043-05-11T21:03:38.849	30.99	-65.37	71486.5	-55.97	-59.29
Jupiter	E	2043-05-11T23:31:03.159	62.09	-70.75	71486.6	-54.57	-57.96