

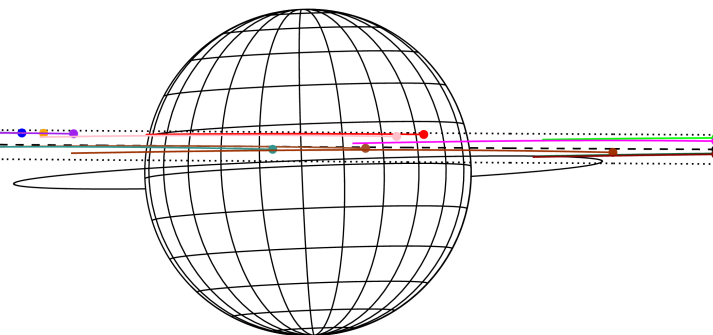
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-08-04T21:45:23.140
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4117424278738112000
 2Mass ID (if available) : 17315141-2303016

Jupiter 2043-08-04T21:45:23 K9.55 G14.39 Pgt

ICRS Star Coord at Epoch: 17h 31m 51.42722s -23°03'01.74522s
 RUWE (>1.4 is poor) : 0.92
 K magnitude : 9.546
 G magnitude : 14.394
 RP magnitude : 13.174
 BP magnitude : 16.057
 DUPflag : 0
 Distance (au) : 4.521
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -6.67
 Sun-Target sep (deg) : 131.71
 Sun-Moon sep (deg) : 134.05
 B (ring opening deg) : -2.36
 PA of pole (deg) : 2.19
 Pole direction: RA (deg): 268.05671
 Dec (deg): 64.49731
 C/A sky separation (") : 3.428
 C/A sky separation (km) : 11238.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



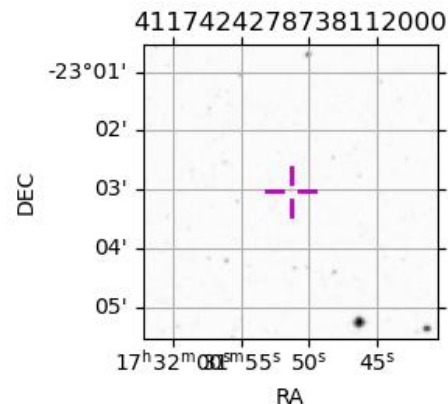
Earth
 PIC
 PAL
 PMO
 KPNO
 MCD
 TEN
 IRTF
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



2043-08-04T21:45:23.1400 a: 17 31 51.42722 s: -23 03 01.745 C/A 3.418" PA 179.61 deg v_sky - 6.67 km/s D 04.52 AU
 Credit: Styled after SORA/Lucky Star

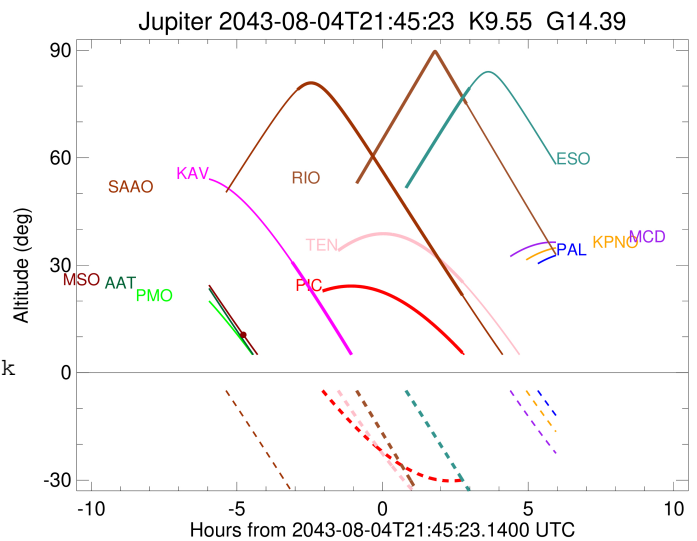
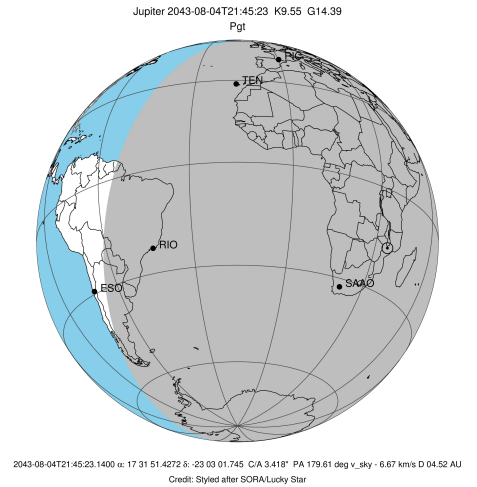
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1	+	AUG 05 00:29 - AUG 05 00:29	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	+	AUG 05 00:30 - AUG 05 00:30	Pne
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+	AUG 04 18:39 - AUG 04 18:39	Pin
RIO	Rio de Janeiro	-22.9	316.8	+	AUG 05 00:38 - AUG 05 00:38	Pne
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	AUG 05 00:45 - AUG 05 00:45	Pne
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	AUG 04 18:50 - AUG 05 00:30	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-08-04T21:42:20.450
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        : 4117424278738112000
2Mass ID (if available) : 17315141-2303016
ICRS Star Coord at Epoch: 17h 31m 51.42722s -23:03:01.74522s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 9.546
G magnitude           : 14.394
RP magnitude          : 13.174
BP magnitude          : 16.057
DUPflag              : 0
Distance (au)         : 4.521
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -6.67
Sun-Target sep (deg)  : 131.71
Sun-Moon sep (deg)    : 134.26
B (ring opening deg) : -2.36
PA of pole (deg)      : 2.19
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 5.176
C/A sky separation (km) : 16970.0
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
    
```

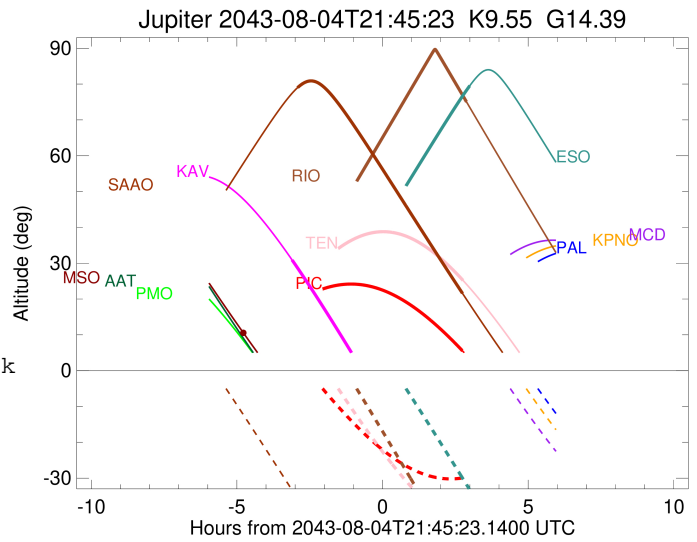
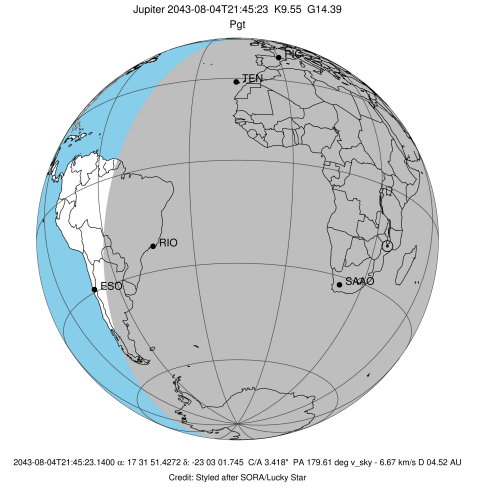


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-04T18:57:14.171	19.97	2.43x	71491.7	11.08	12.62
Jupiter	E	2043-08-05T00:29:58.809	5.56	-29.95	71491.4	15.64	17.74

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-04T21:45:21.830
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       : 4117424278738112000
2Mass ID (if available) : 17315141-2303016
ICRS Star Coord at Epoch: 17h 31m 51.42722s -23:03:01.74522s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.546
G magnitude          : 14.394
RP magnitude         : 13.174
BP magnitude         : 16.057
DUPflag             : 0
Distance (au)        : 4.521
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -6.67
Sun-Target sep (deg) : 131.71
Sun-Moon sep (deg)  : 134.56
B (ring opening deg) : -2.36
PA of pole (deg)    : 2.19
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (" ) : 4.944
C/A sky separation (km) : 16208.2
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
    
```

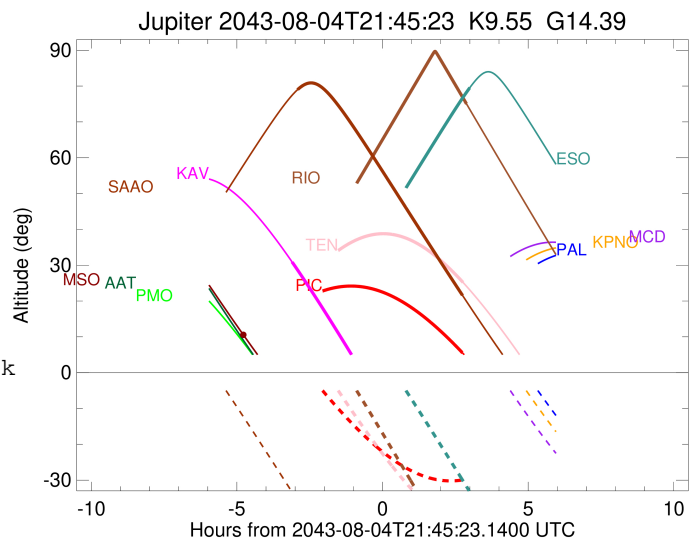
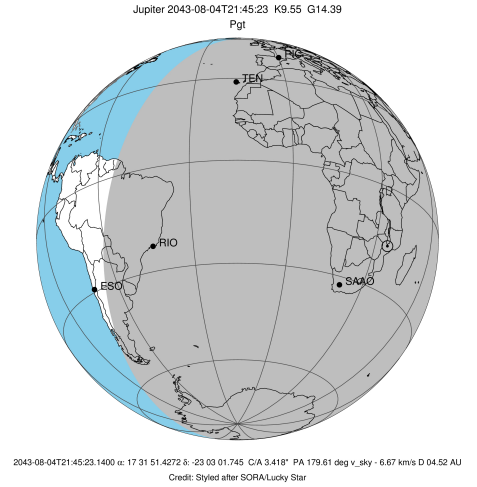


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-04T19:00:46.741	24.91	10.37x	71491.8	10.10	11.51
Jupiter	E	2043-08-05T00:30:55.872	25.24	-43.75	71491.5	15.20	17.25

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-08-04T21:30:37.340
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        : 4117424278738112000
2Mass ID (if available) : 17315141-2303016
ICRS Star Coord at Epoch: 17h 31m 51.42722s -23:03:01.74522s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 9.546
G magnitude           : 14.394
RP magnitude          : 13.174
BP magnitude          : 16.057
DUPflag              : 0
Distance (au)         : 4.520
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -6.67
Sun-Target sep (deg) : 131.71
Sun-Moon sep (deg)   : 133.31
B (ring opening deg) : -2.36
PA of pole (deg)     : 2.19
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 3.779
C/A sky separation (km) : 12388.8
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
    
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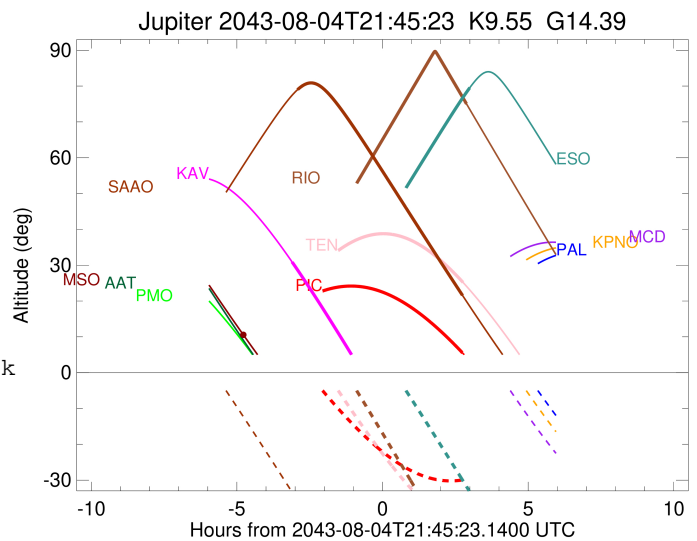
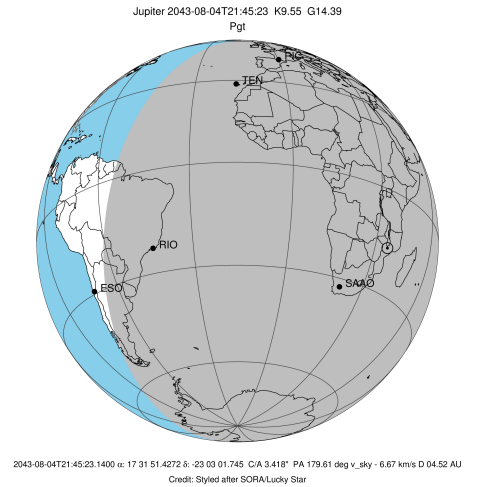


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-04T18:39:09.440	30.89	-60.26	71491.8	8.78	10.01
Jupiter	E	2043-08-05T00:31:57.280	-47.59x	-0.74x	71491.7	11.18	12.73

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-04T21:51:28.390
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      : 4117424278738112000
2Mass ID (if available) : 17315141-2303016
ICRS Star Coord at Epoch: 17h 31m 51.42722s -23:03:01.74522s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.546
G magnitude          : 14.394
RP magnitude         : 13.174
BP magnitude         : 16.057
DUPflag             : 0
Distance (au)       : 4.521
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -6.67
Sun-Target sep (deg) : 131.71
Sun-Moon sep (deg)  : 134.96
B (ring opening deg) : -2.36
PA of pole (deg)    : 2.19
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 3.379
C/A sky separation (km) : 11077.7
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
    
```

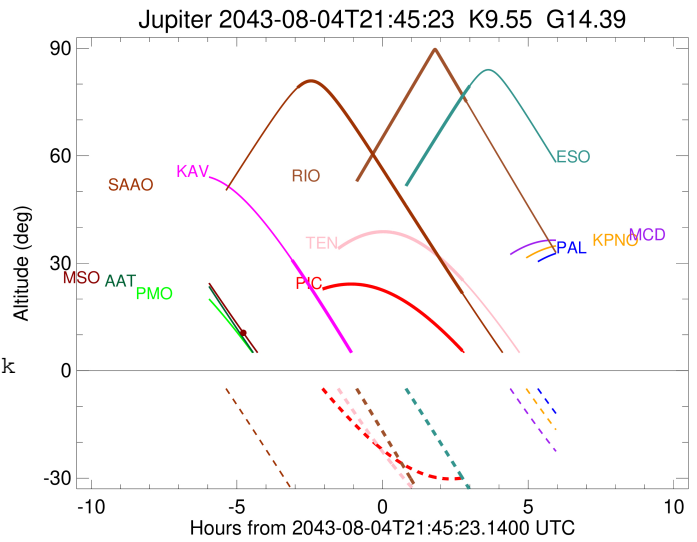
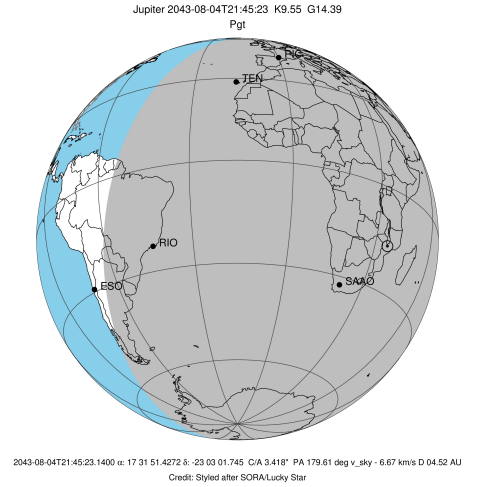


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-04T19:02:34.147	28.05	18.35x	71491.9	5.38	6.14
Jupiter	E	2043-08-05T00:38:21.981	75.04	-56.55	71491.7	11.57	13.17

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-04T21:55:58.030
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       : 4117424278738112000
2Mass ID (if available) : 17315141-2303016
ICRS Star Coord at Epoch: 17h 31m 51.42722s -23:03:01.74522s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 9.546
G magnitude           : 14.394
RP magnitude          : 13.174
BP magnitude          : 16.057
DUPflag              : 0
Distance (au)         : 4.521
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -6.67
Sun-Target sep (deg) : 131.71
Sun-Moon sep (deg)   : 134.97
B (ring opening deg) : -2.36
PA of pole (deg)     : 2.19
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 2.984
C/A sky separation (km) : 9783.2
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
    
```

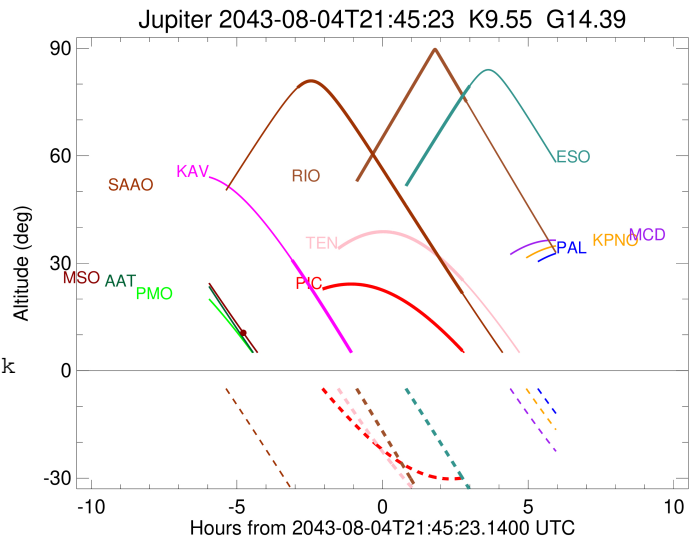
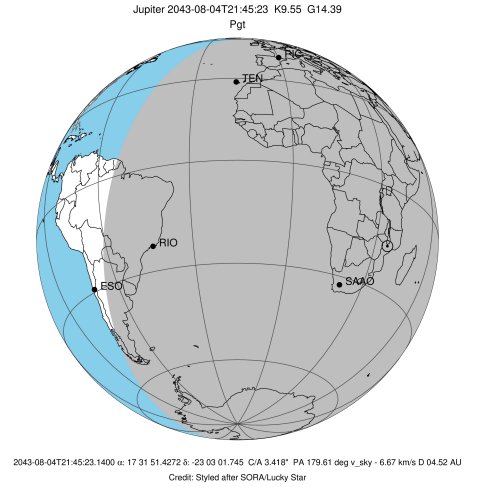


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-04T19:02:19.741	6.51	33.69x	71492.0	4.04	4.62
Jupiter	E	2043-08-05T00:45:05.593	79.51	-33.23	71491.7	11.07	12.61

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-04T21:38:00.450
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      : 4117424278738112000
2Mass ID (if available) : 17315141-2303016
ICRS Star Coord at Epoch: 17h 31m 51.42722s -23:03:01.74522s
RUWE (>1.4 is poor) : 0.92
K magnitude         : 9.546
G magnitude         : 14.394
RP magnitude        : 13.174
BP magnitude        : 16.057
DUPflag            : 0
Distance (au)       : 4.521
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -6.67
Sun-Target sep (deg) : 131.71
Sun-Moon sep (deg)  : 134.27
B (ring opening deg) : -2.36
PA of pole (deg)    : 2.19
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 2.992
C/A sky separation (km) : 9809.7
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	2043-08-04T18:50:44.700	79.04	-35.81	71491.9	5.64	6.44
Jupiter	E	2043-08-05T00:30:13.877	21.57	-61.39	71491.8	9.40	10.72