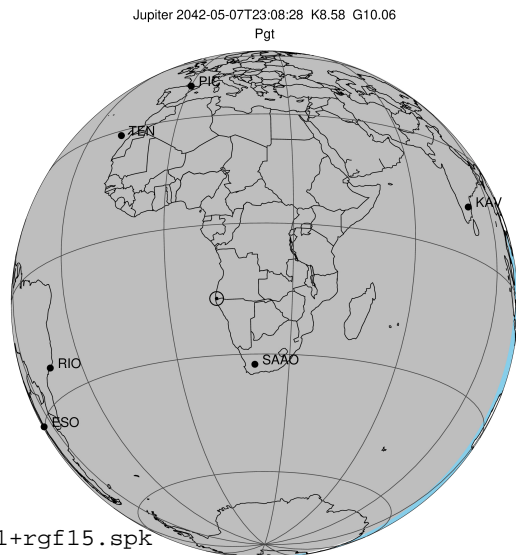


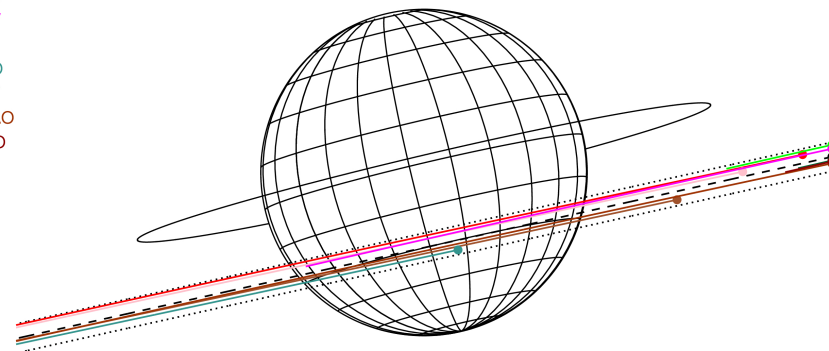
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2042-05-07T23:08:28.300
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 6260108180468331520
 2Mass ID (if available) : 15433027-1835337

Jupiter 2042-05-07T23:08:28 K8.58 G10.06 Pgt

ICRS Star Coord at Epoch: 15h 43m 30.32066s -18:35:34.10680s
 RUWE (>1.4 is poor) : 1.32
 K magnitude : 8.580
 G magnitude : 10.058
 RP magnitude : 9.550
 BP magnitude : 10.392
 DUPflag : 0
 Distance (au) : 4.394
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.28
 Sun-Target sep (deg) : 169.01
 Sun-Moon sep (deg) : 20.32
 B (ring opening deg) : -3.30
 PA of pole (deg) : 13.28
 Pole direction: RA (deg): 268.05646
 Dec (deg): 64.49730
 C/A sky separation (") : 10.087
 C/A sky separation (km) : 32143.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



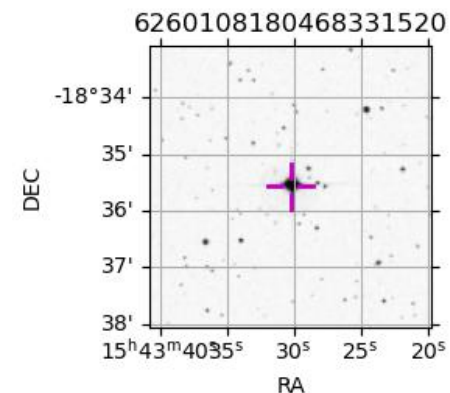
Earth
 PIC
 PMO
 TEN
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



2042-05-07T23:08:28.3000 α: 15 43 30.3207 δ: -18 35 34.107 C/A ***** PA 12.56 deg v_sky -16.28 km/s D 04.39 AU
 Credit: Styled after SORA/Lucky Star

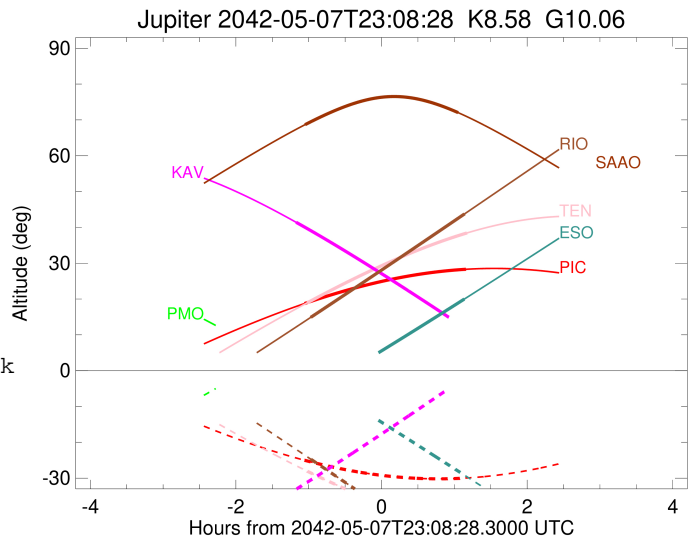
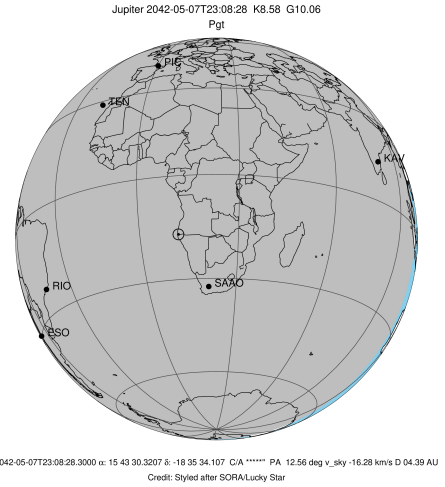
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+ +	MAY 07 22:05 - MAY 08 00:18	Pie
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 07 22:07 - MAY 08 00:18	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+	MAY 07 21:58 - MAY 07 21:58	Pin
RIO	Rio de Janeiro	-22.9	316.8	+ +	MAY 07 22:10 - MAY 08 00:16	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	MAY 08 00:16 - MAY 08 00:16	Pne
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	MAY 07 22:05 - MAY 08 00:11	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2042-05-07T23:11:38.640
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      : 6260108180468331520
2Mass ID (if available) : 15433027-1835337
ICRS Star Coord at Epoch: 15h 43m 30.32066s -18:35:34.10680s
RUWE (>1.4 is poor) : 1.32
K magnitude          : 8.580
G magnitude          : 10.058
RP magnitude         : 9.550
BP magnitude         : 10.392
DUPflag             : 0
Distance (au)       : 4.394
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.28
Sun-Target sep (deg) : 169.01
Sun-Moon sep (deg)  : 21.03
B (ring opening deg) : -3.30
PA of pole (deg)    : 13.28
Pole direction: RA (deg): 268.05646
Dec (deg): 64.49730
C/A sky separation (" ) : 8.526
C/A sky separation (km) : 27170.3
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
    
```

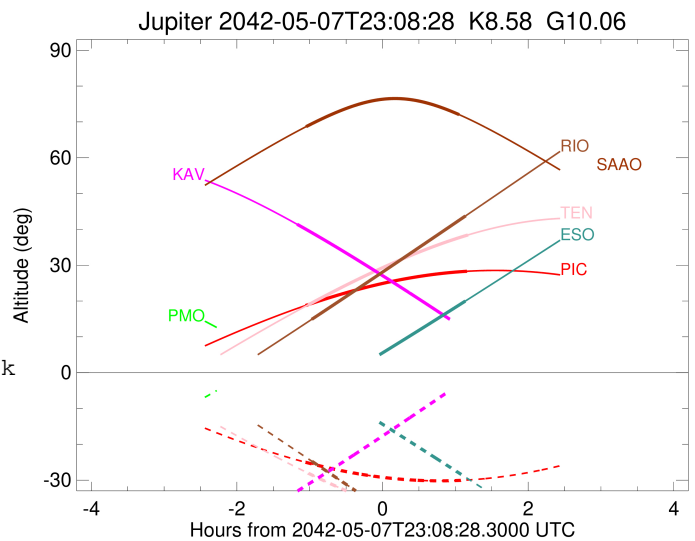
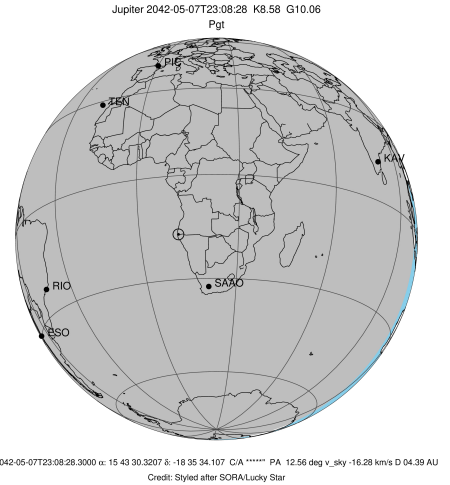


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2042-05-07T22:05:04.180	18.74	-25.00	71489.6	-23.42	-26.32
Jupiter	E	2042-05-08T00:18:01.438	28.30	-29.97	71490.0	-21.25	-23.94

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2042-05-07T23:13:11.200
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       : 6260108180468331520
2Mass ID (if available) : 15433027-1835337
ICRS Star Coord at Epoch: 15h 43m 30.32066s -18:35:34.10680s
RUWE (>1.4 is poor) : 1.32
K magnitude          : 8.580
G magnitude          : 10.058
RP magnitude         : 9.550
BP magnitude         : 10.392
DUPflag             : 0
Distance (au)        : 4.394
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.28
Sun-Target sep (deg) : 169.01
Sun-Moon sep (deg)   : 21.18
B (ring opening deg) : -3.30
PA of pole (deg)     : 13.28
Pole direction: RA (deg): 268.05646
Dec (deg): 64.49730
C/A sky separation (") : 9.019
C/A sky separation (km) : 28740.6
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
    
```

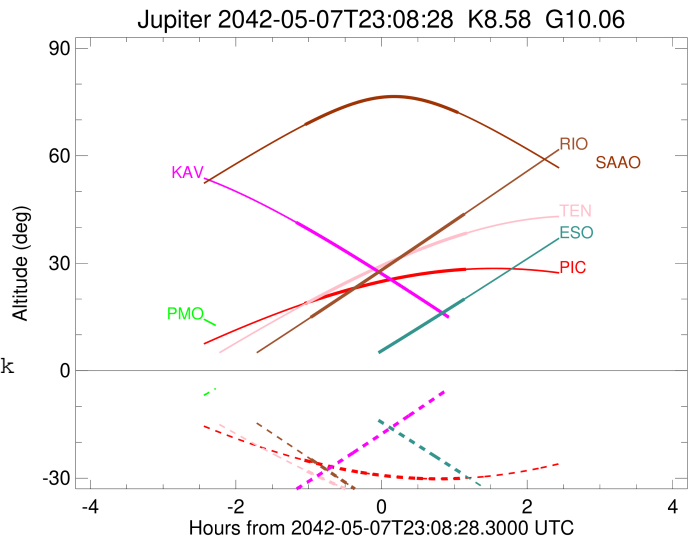
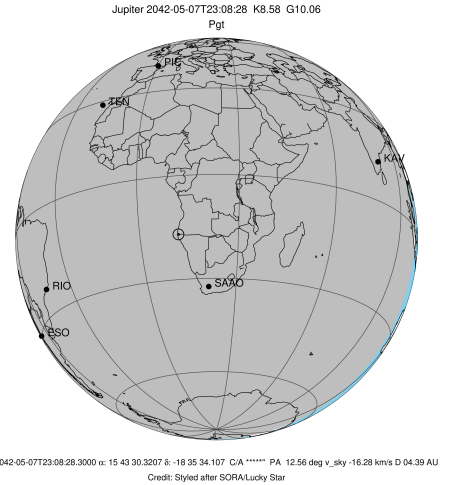


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2042-05-07T22:07:11.631	18.92	-28.05	71489.3	-24.91	-27.93
Jupiter	E	2042-05-08T00:18:50.769	38.43	-43.58	71489.8	-22.46	-25.27

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2042-05-07T23:03:51.310
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       : 6260108180468331520
2Mass ID (if available) : 15433027-1835337
ICRS Star Coord at Epoch: 15h 43m 30.32066s -18:35:34.10680s
RUWE (>1.4 is poor) : 1.32
K magnitude           : 8.580
G magnitude           : 10.058
RP magnitude          : 9.550
BP magnitude          : 10.392
DUPflag              : 0
Distance (au)        : 4.394
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.28
Sun-Target sep (deg) : 169.01
Sun-Moon sep (deg)   : 20.01
B (ring opening deg) : -3.30
PA of pole (deg)     : 13.28
Pole direction: RA (deg): 268.05646
Dec (deg): 64.49730
C/A sky separation ("): 8.989
C/A sky separation (km): 28644.9
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
    
```

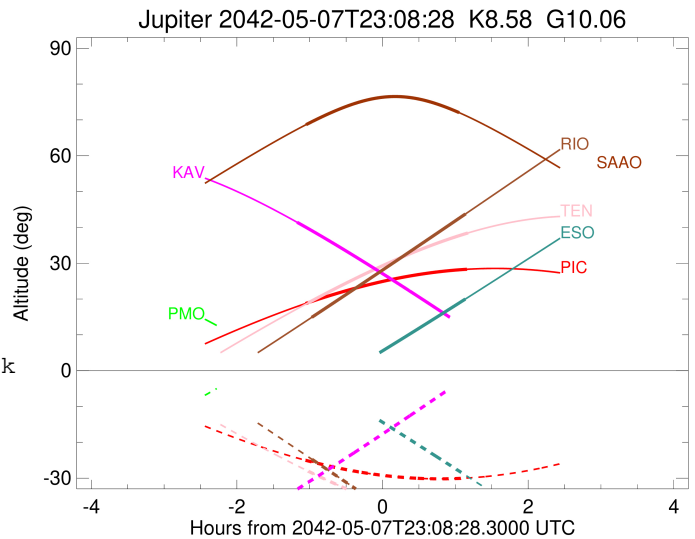
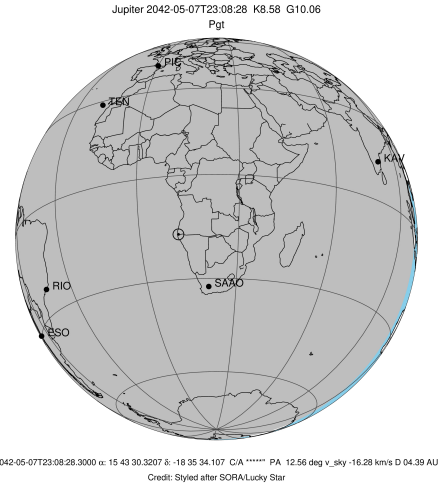


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2042-05-07T21:58:09.421	41.40	-33.08	71489.5	-24.18	-27.14
Jupiter	E	2042-05-08T00:09:55.629	13.55	-3.62x	71489.7	-23.14	-26.01

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2042-05-07T23:13:49.340
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       : 6260108180468331520
2Mass ID (if available) : 15433027-1835337
ICRS Star Coord at Epoch: 15h 43m 30.32066s -18:35:34.10680s
RUWE (>1.4 is poor) : 1.32
K magnitude           : 8.580
G magnitude           : 10.058
RP magnitude         : 9.550
BP magnitude         : 10.392
DUPflag              : 0
Distance (au)        : 4.394
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.28
Sun-Target sep (deg) : 169.01
Sun-Moon sep (deg)   : 21.03
B (ring opening deg) : -3.30
PA of pole (deg)     : 13.28
Pole direction: RA (deg): 268.05646
Dec (deg): 64.49730
C/A sky separation (") : 10.920
C/A sky separation (km) : 34798.7
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
    
```

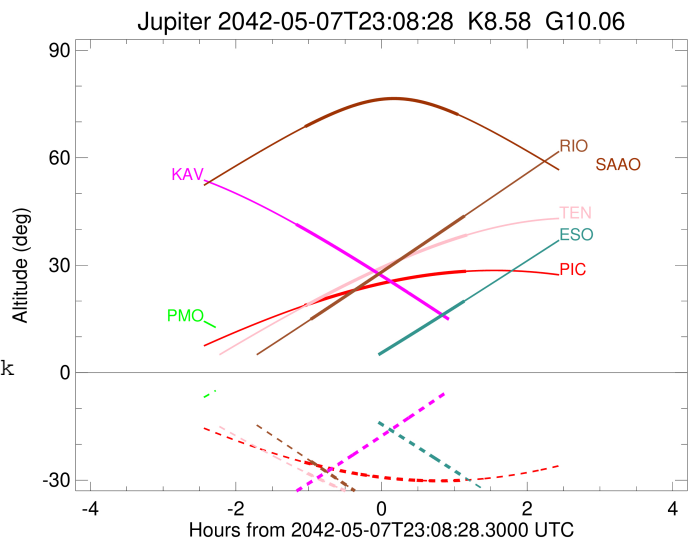
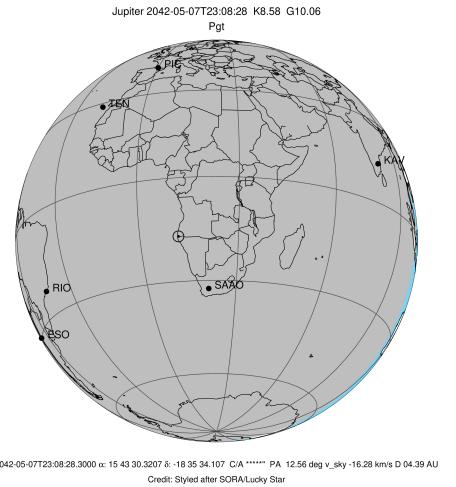


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2042-05-07T22:10:13.930	14.90	-24.72	71488.2	-30.33	-33.72
Jupiter	E	2042-05-08T00:16:58.222	43.77	-53.84	71488.7	-27.80	-31.03

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2042-05-07T23:13:39.300
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       : 6260108180468331520
2Mass ID (if available) : 15433027-1835337
ICRS Star Coord at Epoch: 15h 43m 30.32066s -18:35:34.10680s
RUWE (>1.4 is poor) : 1.32
K magnitude           : 8.580
G magnitude           : 10.058
RP magnitude         : 9.550
BP magnitude         : 10.392
DUPflag              : 0
Distance (au)        : 4.394
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.28
Sun-Target sep (deg) : 169.01
Sun-Moon sep (deg)   : 20.84
B (ring opening deg) : -3.30
PA of pole (deg)     : 13.28
Pole direction: RA (deg): 268.05646
Dec (deg): 64.49730
C/A sky separation (") : 11.388
C/A sky separation (km) : 36289.9
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
    
```

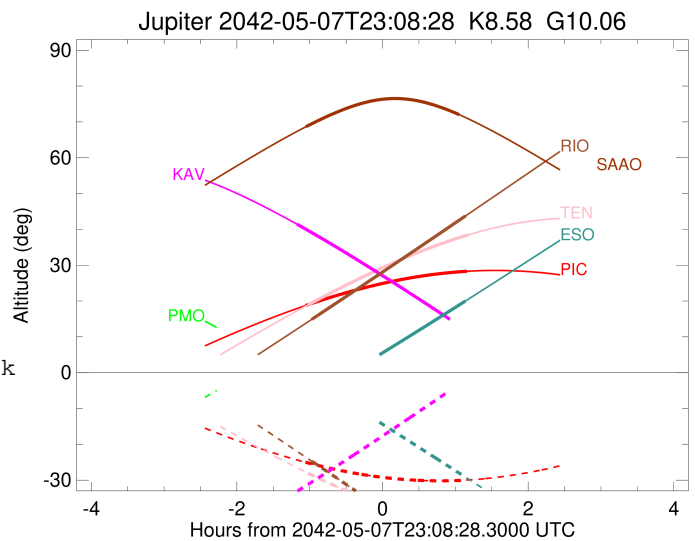
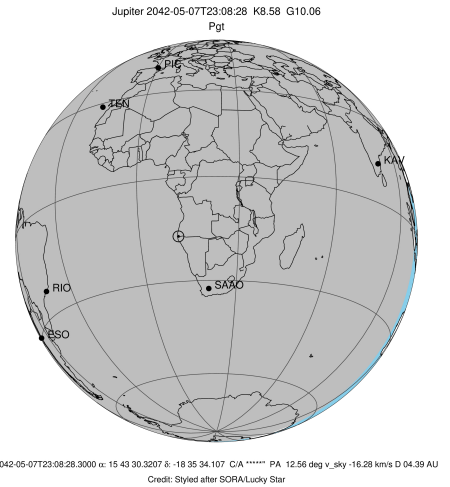


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2042-05-07T22:10:09.745	-6.33x	-2.08x	71487.9	-31.55	-35.01
Jupiter	E	2042-05-08T00:16:42.000	19.98	-29.14	71488.4	-29.26	-32.59

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2042-05-07T23:08:34.460
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      : 6260108180468331520
2Mass ID (if available) : 15433027-1835337
ICRS Star Coord at Epoch: 15h 43m 30.32066s -18:35:34.10680s
RUWE (>1.4 is poor) : 1.32
K magnitude         : 8.580
G magnitude         : 10.058
RP magnitude        : 9.550
BP magnitude        : 10.392
DUPflag            : 0
Distance (au)       : 4.394
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.28
Sun-Target sep (deg) : 169.01
Sun-Moon sep (deg)  : 20.57
B (ring opening deg) : -3.30
PA of pole (deg)    : 13.28
Pole direction: RA (deg): 268.05646
Dec (deg): 64.49730
C/A sky separation (") : 10.559
C/A sky separation (km) : 33648.9
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	2042-05-07T22:05:27.810	68.66	-73.59	71488.5	-29.11	-32.42
Jupiter	E	2042-05-08T00:11:37.201	72.02	-63.11	71488.9	-27.06	-30.25