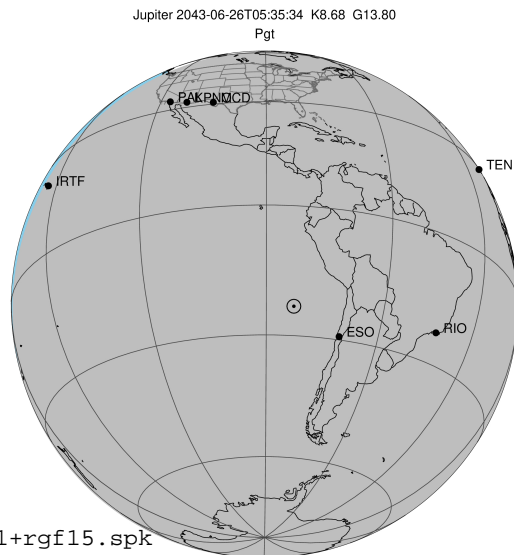


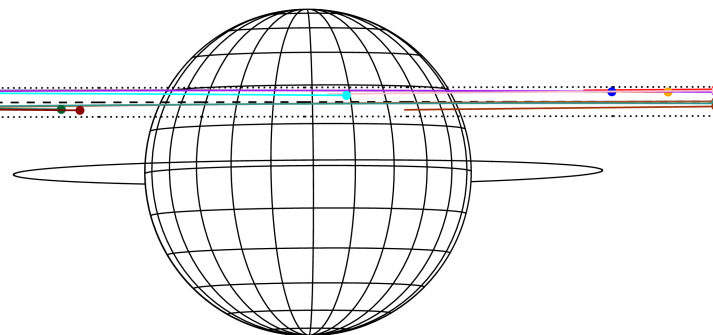
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-06-26T05:35:34.130
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068879843936660480
 2Mass ID (if available) : 17482118-2304322

Jupiter 2043-06-26T05:35:34 K8.68 G13.80 Pgt

ICRS Star Coord at Epoch: 17h 48m 21.17185s -23:04:32.17458s
 RUWE (>1.4 is poor) : 0.84
 K magnitude : 8.684
 G magnitude : 13.797
 RP magnitude : 12.491
 BP magnitude : 15.780
 DUPflag : 0
 Distance (au) : 4.253
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.23
 Sun-Target sep (deg) : 173.36
 Sun-Moon sep (deg) : 48.81
 B (ring opening deg) : -2.42
 PA of pole (deg) : 0.42
 Pole direction: RA (deg): 268.05669
 Dec (deg): 64.49732
 C/A sky separation (") : 10.006
 C/A sky separation (km) : 30866.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



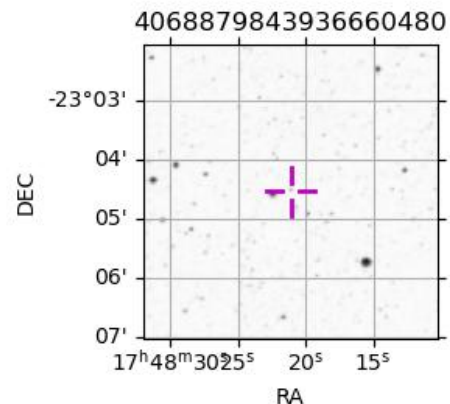
Earth
 PIC
 PAL
 KPNO
 MCD
 TEN
 IRTF
 RIO
 ESO
 AAT
 SAAO
 MSO



2043-06-26T05:35:34.1300 at: 17 48 21.1718 s: -23 04 32.175 C/A 9.994" PA 180.09 deg v_sky -16.23 km/s D 04.25 AU
 Credit: Styled after SORA/Lucky Star

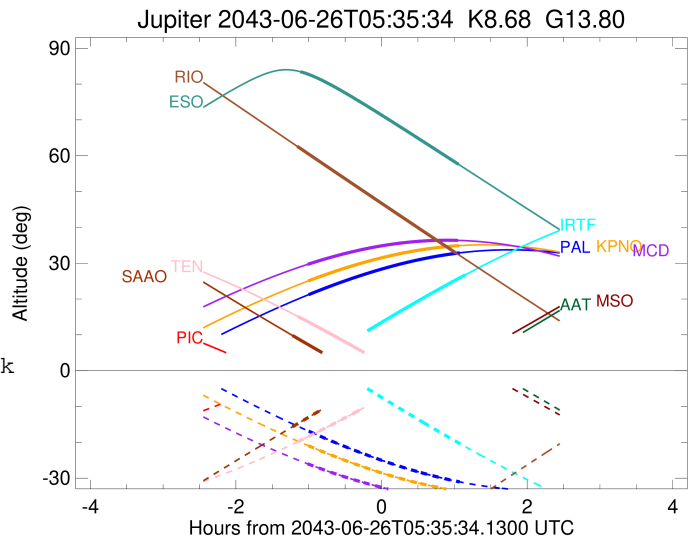
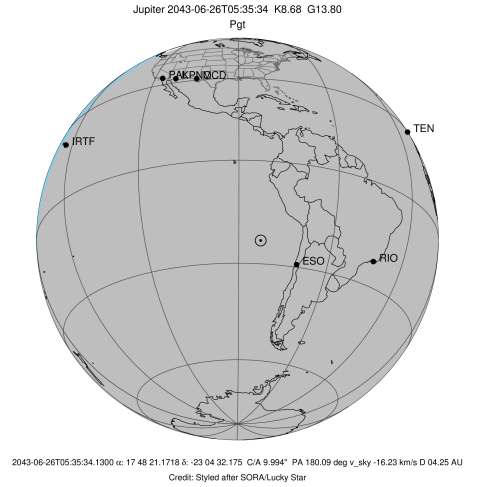
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	JUN 26 04:35 - JUN 26 06:39	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	JUN 26 04:35 - JUN 26 06:39	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	JUN 26 04:34 - JUN 26 06:38	Pie
TEN	Teide Obs./Tenerife	28.3	343.5	+	JUN 26 04:26 - JUN 26 04:26	Pin
IRTF	Mauna Kea/IRTF	19.8	204.5	+	JUN 26 06:44 - JUN 26 06:44	Pne
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8	+ +	JUN 26 04:26 - JUN 26 06:37	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	JUN 26 04:28 - JUN 26 06:39	Pie
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	JUN 26 04:22 - JUN 26 04:22	Pin
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-26T05:37:47.940
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)       : 1.706
Gaia source ID      : 4068879843936660480
2Mass ID (if available) : 17482118-2304322
ICRS Star Coord at Epoch: 17h 48m 21.17185s -23:04:32.17458s
RUWE (>1.4 is poor) : 0.84
K magnitude          : 8.684
G magnitude          : 13.797
RP magnitude         : 12.491
BP magnitude         : 15.780
DUPflag             : 0
Distance (au)       : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.23
Sun-Target sep (deg) : 173.36
Sun-Moon sep (deg)  : 49.43
B (ring opening deg) : -2.42
PA of pole (deg)    : 0.42
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 11.658
C/A sky separation (km): 35964.2
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
    
```

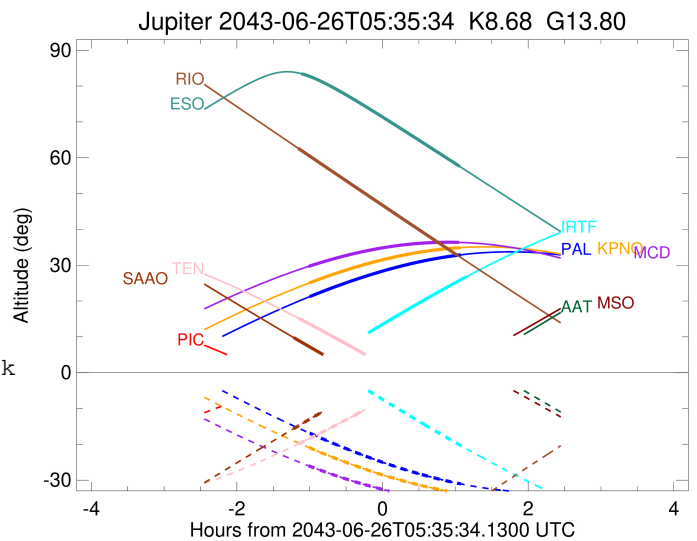
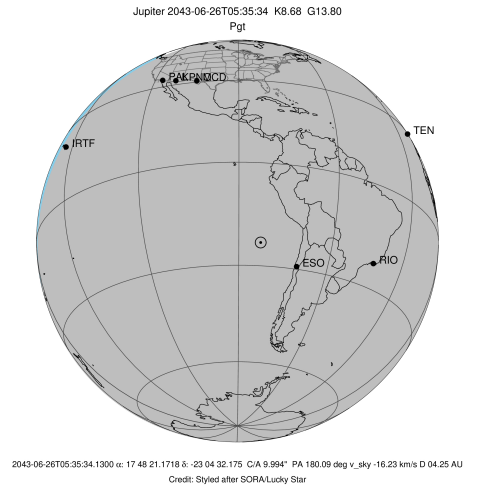


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-26T04:35:32.895	21.22	-16.89	71490.0	29.56	32.90
Jupiter	E	2043-06-26T06:39:53.442	32.87	-31.03	71489.9	30.66	34.07

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-26T05:37:24.160
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : KPNO
Location              : Kitt Peak Natl Obs
Latitude (deg)        : 31.96333
E. Longitude (deg)    : 248.40000
Altitude (km)         : 2.120
Gaia source ID        : 4068879843936660480
2Mass ID (if available) : 17482118-2304322
ICRS Star Coord at Epoch: 17h 48m 21.17185s -23:04:32.17458s
RUWE (>1.4 is poor) : 0.84
K magnitude           : 8.684
G magnitude           : 13.797
RP magnitude          : 12.491
BP magnitude          : 15.780
DUPflag              : 0
Distance (au)         : 4.253
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.23
Sun-Target sep (deg)  : 173.36
Sun-Moon sep (deg)   : 49.42
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.42
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 11.653
C/A sky separation (km) : 35948.7
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
    
```

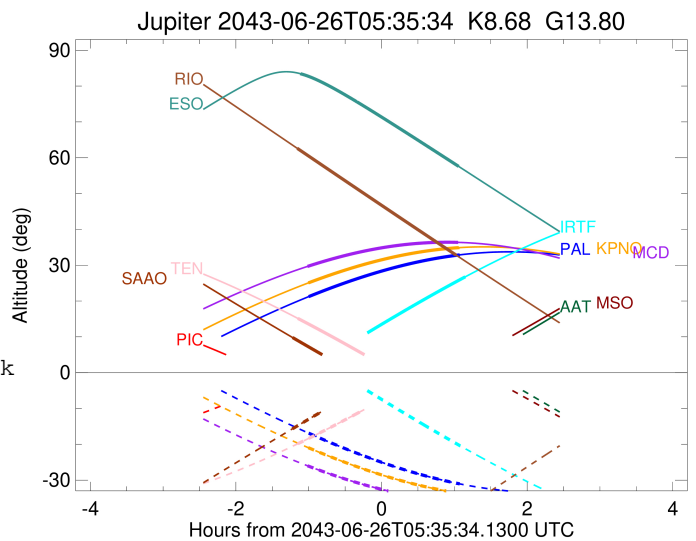
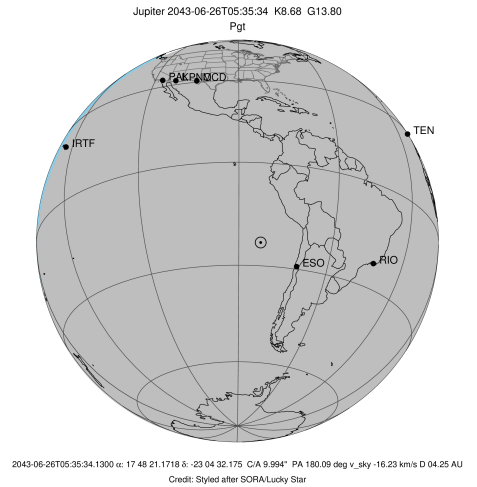


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-26T04:35:13.695	25.05	-20.93	71490.0	29.58	32.92
Jupiter	E	2043-06-26T06:39:26.897	34.89	-33.59	71489.9	30.60	34.01

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-26T05:36:46.410
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : MCD
Location             : McDonald Obs. 2.7m
Latitude (deg)       : 30.67158
E. Longitude (deg)   : 255.97844
Altitude (km)        : 2.075
Gaia source ID       : 4068879843936660480
2Mass ID (if available) : 17482118-2304322
ICRS Star Coord at Epoch: 17h 48m 21.17185s -23:04:32.17458s
RUWE (>1.4 is poor) : 0.84
K magnitude           : 8.684
G magnitude           : 13.797
RP magnitude         : 12.491
BP magnitude         : 15.780
DUPflag              : 0
Distance (au)        : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.23
Sun-Target sep (deg) : 173.36
Sun-Moon sep (deg)   : 49.39
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.42
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 11.651
C/A sky separation (km) : 35942.9
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
    
```

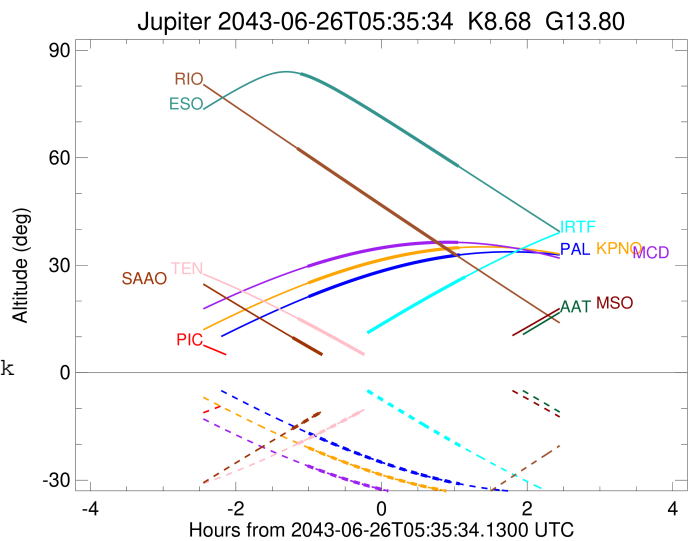
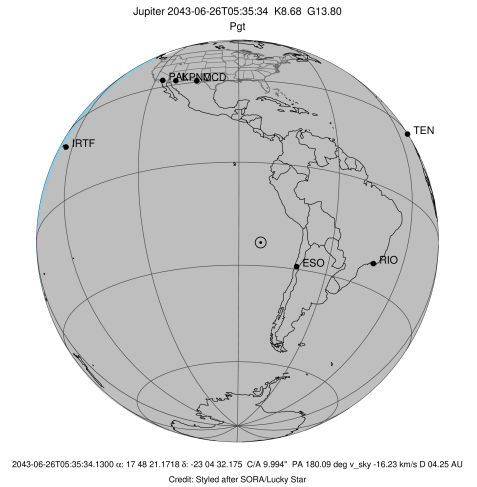


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-26T04:34:41.508	29.67	-26.00	71490.0	29.63	32.98
Jupiter	E	2043-06-26T06:38:46.423	36.36	-35.93	71489.9	30.53	33.93

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-26T05:30:22.720
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      : 4068879843936660480
2Mass ID (if available) : 17482118-2304322
ICRS Star Coord at Epoch: 17h 48m 21.17185s -23:04:32.17458s
RUWE (>1.4 is poor) : 0.84
K magnitude          : 8.684
G magnitude          : 13.797
RP magnitude         : 12.491
BP magnitude         : 15.780
DUPflag             : 0
Distance (au)       : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.23
Sun-Target sep (deg) : 173.36
Sun-Moon sep (deg)  : 48.35
B (ring opening deg) : -2.42
PA of pole (deg)    : 0.42
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (" ) : 11.111
C/A sky separation (km) : 34275.6
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
    
```

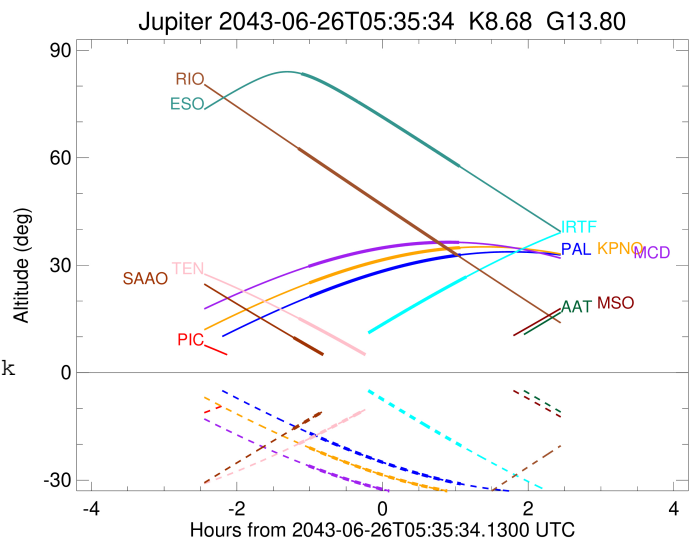
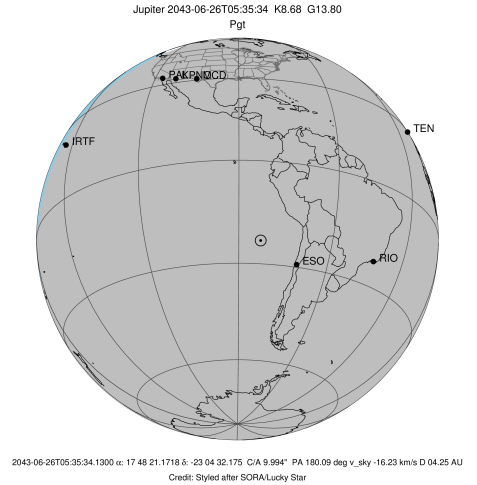


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-26T04:26:37.267	15.15	-19.83	71490.1	28.80	32.10
Jupiter	E	2043-06-26T06:34:33.793	-9.60x	3.81x	71490.2	28.39	31.66

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-26T05:40:46.000
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)       : 19.82622
E. Longitude (deg)   : 204.52800
Altitude (km)        : 4.168
Gaia source ID       : 4068879843936660480
2Mass ID (if available) : 17482118-2304322
ICRS Star Coord at Epoch: 17h 48m 21.17185s -23:04:32.17458s
RUWE (>1.4 is poor) : 0.84
K magnitude           : 8.684
G magnitude           : 13.797
RP magnitude          : 12.491
BP magnitude          : 15.780
DUPflag              : 0
Distance (au)        : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.23
Sun-Target sep (deg) : 173.36
Sun-Moon sep (deg)   : 49.52
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.42
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 10.990
C/A sky separation (km): 33904.6
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
    
```

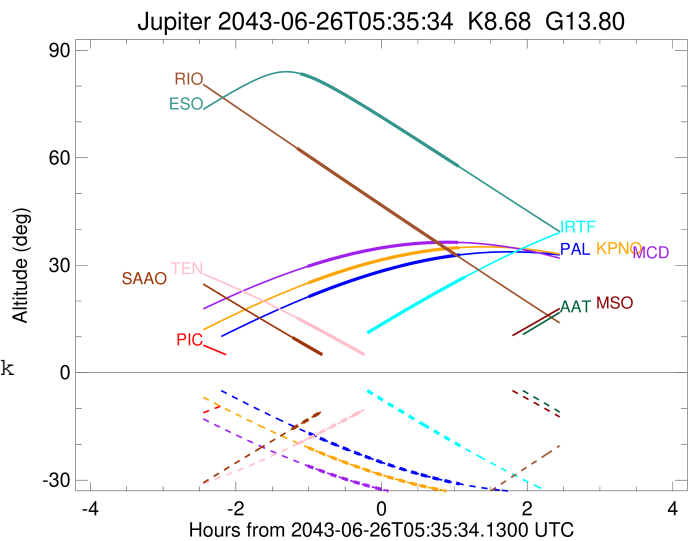
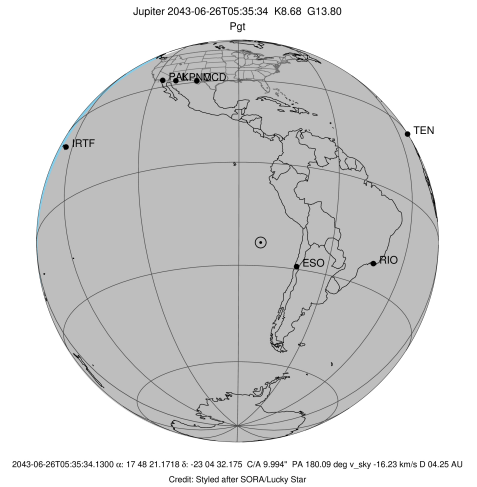


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-26T04:36:39.324	1.18x	5.07x	71490.3	27.39	30.59
Jupiter	E	2043-06-26T06:44:28.291	26.73	-21.19	71490.1	29.10	32.42

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-26T05:31:26.740
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      : 4068879843936660480
2Mass ID (if available) : 17482118-2304322
ICRS Star Coord at Epoch: 17h 48m 21.17185s -23:04:32.17458s
RUWE (>1.4 is poor) : 0.84
K magnitude          : 8.684
G magnitude          : 13.797
RP magnitude         : 12.491
BP magnitude         : 15.780
DUPflag             : 0
Distance (au)       : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.23
Sun-Target sep (deg) : 173.36
Sun-Moon sep (deg)  : 48.90
B (ring opening deg) : -2.42
PA of pole (deg)    : 0.42
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (") : 9.784
C/A sky separation (km) : 30182.6
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
    
```

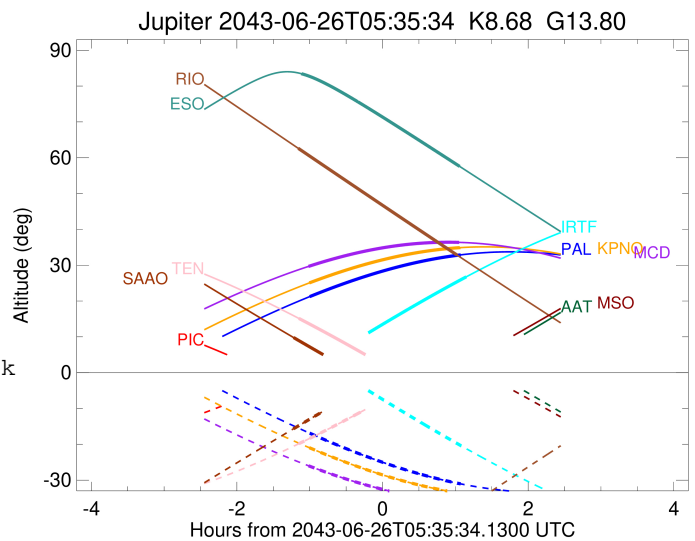
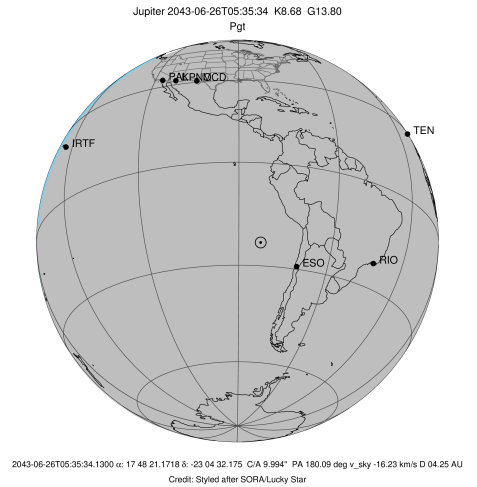


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-26T04:26:12.790	62.60	-69.18	71490.6	24.98	28.01
Jupiter	E	2043-06-26T06:37:01.810	32.82	-39.41	71490.6	24.80	27.81

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-26T05:33:47.180
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       : 4068879843936660480
2Mass ID (if available) : 17482118-2304322
ICRS Star Coord at Epoch: 17h 48m 21.17185s -23:04:32.17458s
RUWE (>1.4 is poor) : 0.84
K magnitude          : 8.684
G magnitude          : 13.797
RP magnitude         : 12.491
BP magnitude         : 15.780
DUPflag             : 0
Distance (au)        : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.23
Sun-Target sep (deg) : 173.36
Sun-Moon sep (deg)   : 49.30
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.42
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 9.748
C/A sky separation (km): 30071.6
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
    
```

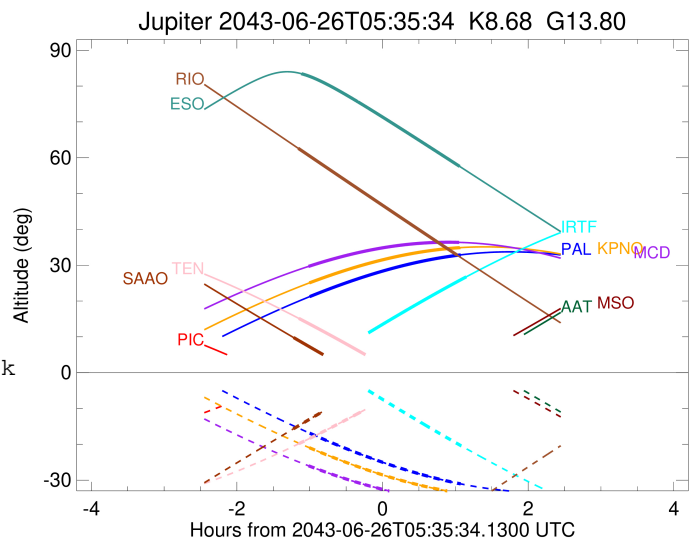
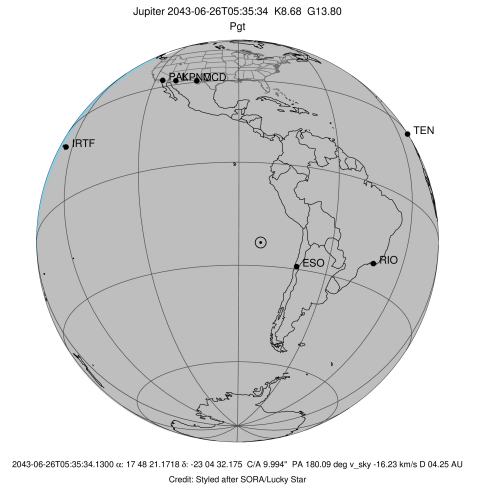


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-26T04:28:43.953	83.45	-83.12	71490.6	24.63	27.63
Jupiter	E	2043-06-26T06:38:59.765	57.60	-64.02	71490.6	24.92	27.94


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-26T05:30:37.490
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      : 4068879843936660480
2Mass ID (if available) : 17482118-2304322
ICRS Star Coord at Epoch: 17h 48m 21.17185s -23:04:32.17458s
RUWE (>1.4 is poor) : 0.84
K magnitude          : 8.684
G magnitude          : 13.797
RP magnitude         : 12.491
BP magnitude         : 15.780
DUPflag             : 0
Distance (au)       : 4.253
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.23
Sun-Target sep (deg) : 173.36
Sun-Moon sep (deg)  : 48.23
B (ring opening deg) : -2.42
PA of pole (deg)    : 0.42
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (" ) : 8.754
C/A sky separation (km) : 27004.3
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	2043-06-26T04:22:19.914	9.80	-15.64	71490.8	22.38	25.18
Jupiter	E	2043-06-26T06:39:23.394	-15.18x	10.17x	71490.9	22.02	24.79