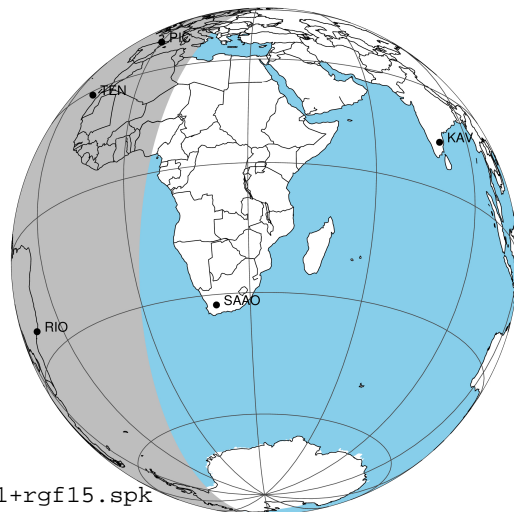


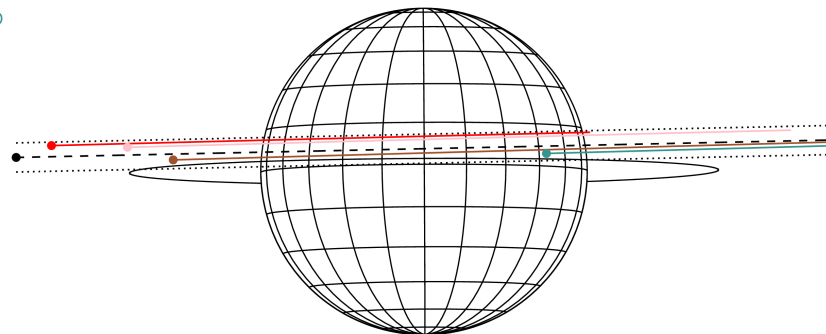
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-02-17T05:48:07.400
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068877266954015104
 2Mass ID (if available) : 17491799-2257203

Jupiter 2043-02-17T05:48:07 K7.61 G13.52 Pgt

ICRS Star Coord at Epoch: 17h 49m 18.00344s -22:57:20.35550s
 RUWE (>1.4 is poor) : 0.89
 K magnitude : 7.611
 G magnitude : 13.516
 RP magnitude : 12.067
 BP magnitude : 16.269
 DUPflag : 0
 Distance (au) : 5.727
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 27.93
 Sun-Target sep (deg) : 60.32
 Sun-Moon sep (deg) : 156.79
 B (ring opening deg) : -2.55
 PA of pole (deg) : 0.32
 Pole direction: RA (deg): 268.05662
 Dec (deg): 64.49732
 C/A sky separation (") : 2.402
 C/A sky separation (km) : 9976.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



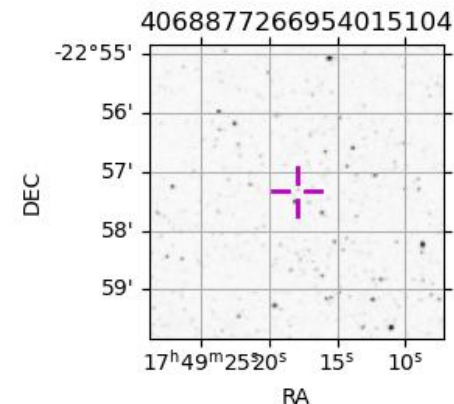
Earth
 PIC
 TEN
 RIO
 ESO



2043-02-17T05:48:07.4000 cc: 17 49 18.0034 s: -22 57 20.3555 C/A 2.392° PA 181.23 deg v_sky +27.93 km/s D 05.73 AU
 Credit: Styled after SORA/Lucky Star

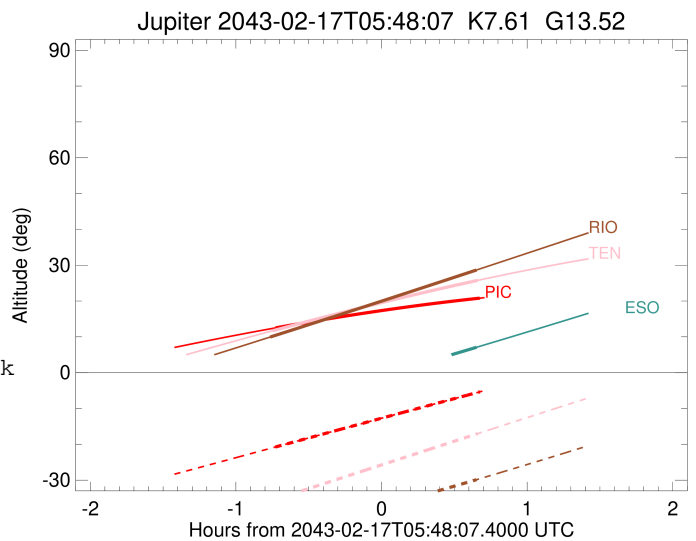
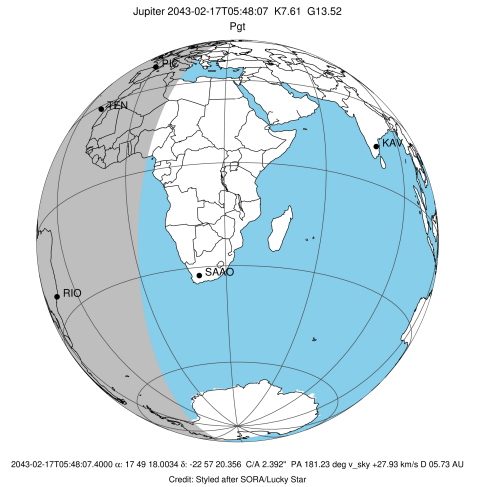
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1	+ +	FEB 17 05:04 - FEB 17 06:28	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	+ +	FEB 17 05:03 - FEB 17 06:27	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8	+ +	FEB 17 05:02 - FEB 17 06:27	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	FEB 17 06:27 - FEB 17 06:27	Pne
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-02-17T05:46:28.640
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       : 4068877266954015104
2Mass ID (if available) : 17491799-2257203
ICRS Star Coord at Epoch: 17h 49m 18.00344s -22:57:20.35550s
RUWE (>1.4 is poor) : 0.89
K magnitude           : 7.611
G magnitude           : 13.516
RP magnitude         : 12.067
BP magnitude         : 16.269
DUPflag              : 0
Distance (au)        : 5.727
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 27.93
Sun-Target sep (deg) : 60.32
Sun-Moon sep (deg)   : 156.68
B (ring opening deg) : -2.55
PA of pole (deg)     : 0.32
Pole direction: RA (deg): 268.05662
Dec (deg): 64.49732
C/A sky separation (") : 3.714
C/A sky separation (km) : 15425.1
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
    
```

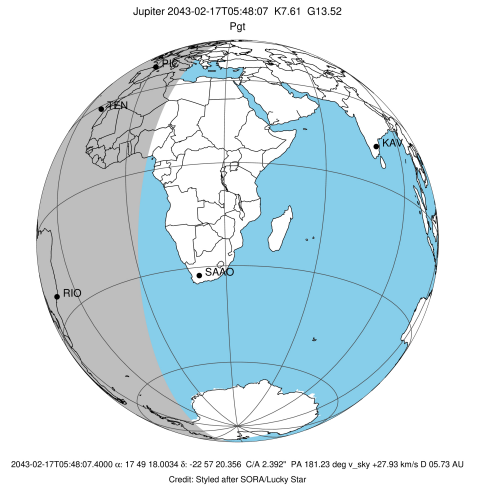


x: target alt < 5.0 deg or sun > -5.0 deg

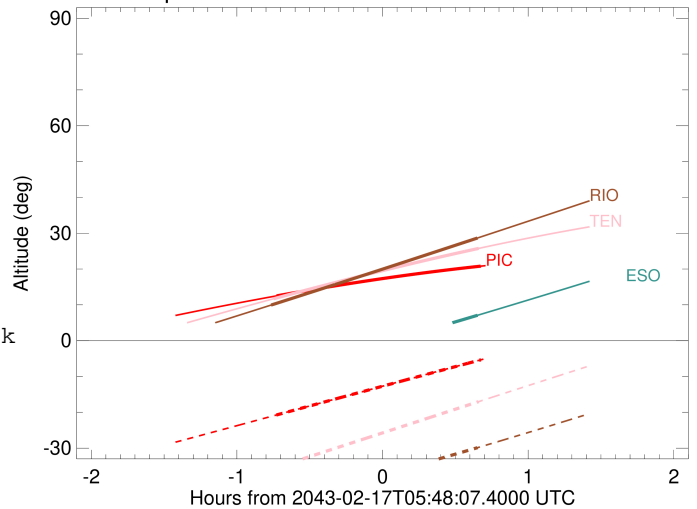
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-17T05:04:26.460	12.50	-20.74	71491.7	11.35	12.93
Jupiter	E	2043-02-17T06:28:35.288	20.80	-5.36	71491.5	13.50	15.34

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-02-17T05:45:26.190
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        : 4068877266954015104
2Mass ID (if available) : 17491799-2257203
ICRS Star Coord at Epoch: 17h 49m 18.00344s -22:57:20.35550s
RUWE (>1.4 is poor) : 0.89
K magnitude           : 7.611
G magnitude           : 13.516
RP magnitude          : 12.067
BP magnitude          : 16.269
DUPflag              : 0
Distance (au)         : 5.727
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 27.93
Sun-Target sep (deg)  : 60.32
Sun-Moon sep (deg)   : 156.43
B (ring opening deg) : -2.55
PA of pole (deg)     : 0.32
Pole direction: RA (deg): 268.05662
Dec (deg): 64.49732
C/A sky separation (") : 3.383
C/A sky separation (km) : 14051.4
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
    
```



Jupiter 2043-02-17T05:48:07 K7.61 G13.52

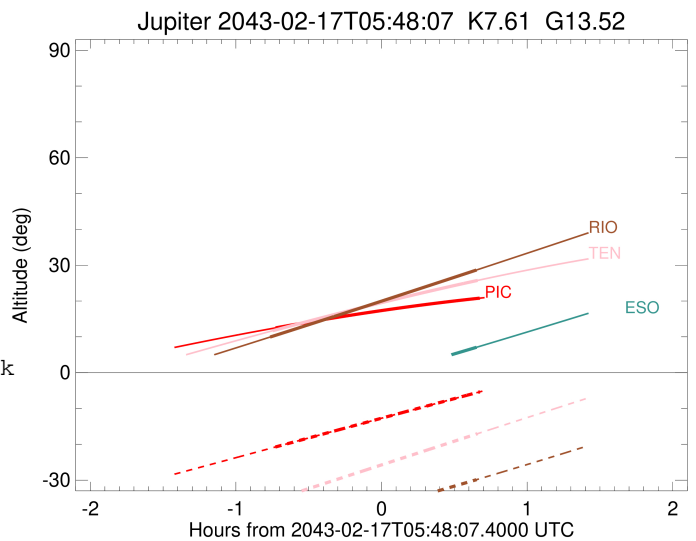
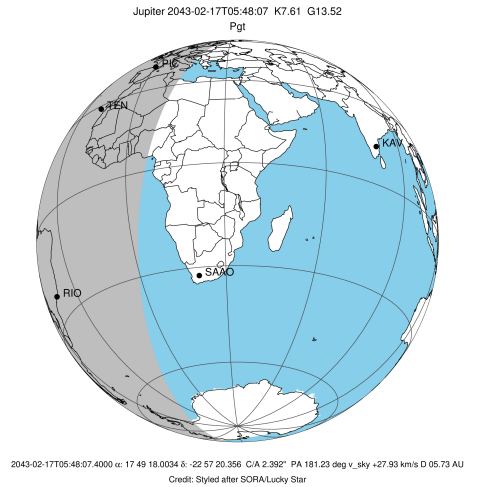


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-17T05:03:17.014	11.70	-35.62	71491.7	10.13	11.55
Jupiter	E	2043-02-17T06:27:42.005	25.75	-17.03	71491.6	12.48	14.20

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-02-17T05:44:41.020
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     : 4068877266954015104
2Mass ID (if available) : 17491799-2257203
ICRS Star Coord at Epoch: 17h 49m 18.00344s -22:57:20.35550s
RUWE (>1.4 is poor) : 0.89
K magnitude         : 7.611
G magnitude         : 13.516
RP magnitude        : 12.067
BP magnitude        : 16.269
DUPflag            : 0
Distance (au)      : 5.727
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 27.93
Sun-Target sep (deg) : 60.32
Sun-Moon sep (deg)  : 156.09
B (ring opening deg) : -2.55
PA of pole (deg)   : 0.32
Pole direction: RA (deg): 268.05662
Dec (deg): 64.49732
C/A sky separation (") : 1.948
C/A sky separation (km) : 8090.3
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
    
```

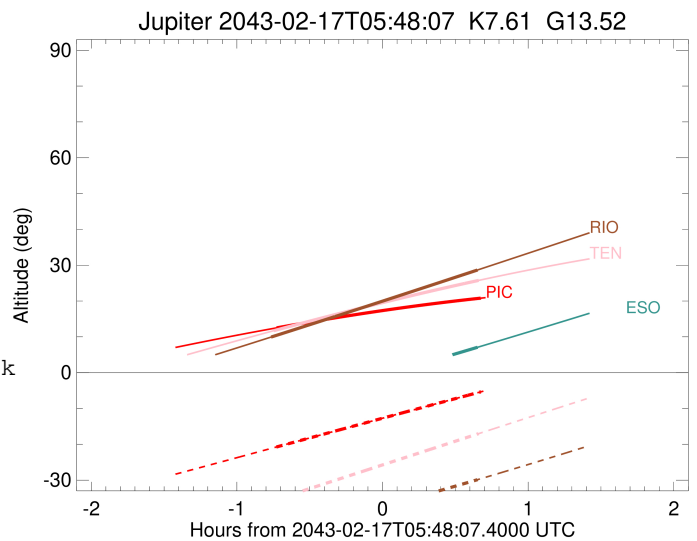
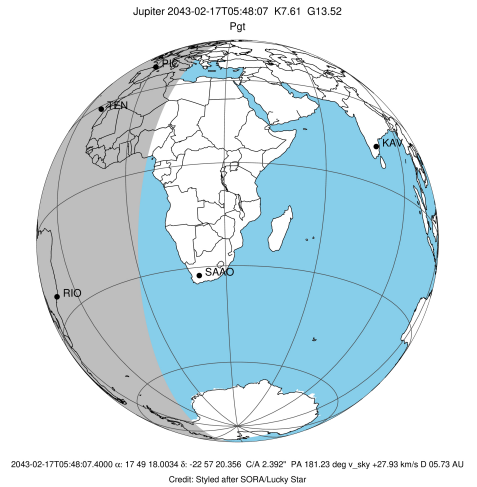


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-17T05:02:14.565	9.94	-45.18	71491.9	5.24	5.99
Jupiter	E	2043-02-17T06:27:15.853	28.65	-29.87	71491.8	7.73	8.82

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-02-17T05:44:55.940
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      : 4068877266954015104
2Mass ID (if available) : 17491799-2257203
ICRS Star Coord at Epoch: 17h 49m 18.00344s -22:57:20.35550s
RUWE (>1.4 is poor) : 0.89
K magnitude          : 7.611
G magnitude          : 13.516
RP magnitude         : 12.067
BP magnitude         : 16.269
DUPflag             : 0
Distance (au)       : 5.727
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 27.93
Sun-Target sep (deg) : 60.32
Sun-Moon sep (deg)   : 155.95
B (ring opening deg) : -2.55
PA of pole (deg)     : 0.32
Pole direction: RA (deg): 268.05662
Dec (deg): 64.49732
C/A sky separation (") : 1.554
C/A sky separation (km) : 6456.6
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	2043-02-17T05:02:41.091	-9.33x	-48.86	71492.0	3.97	4.54
Jupiter	E	2043-02-17T06:27:18.538	7.09	-43.46	71491.9	6.40	7.31