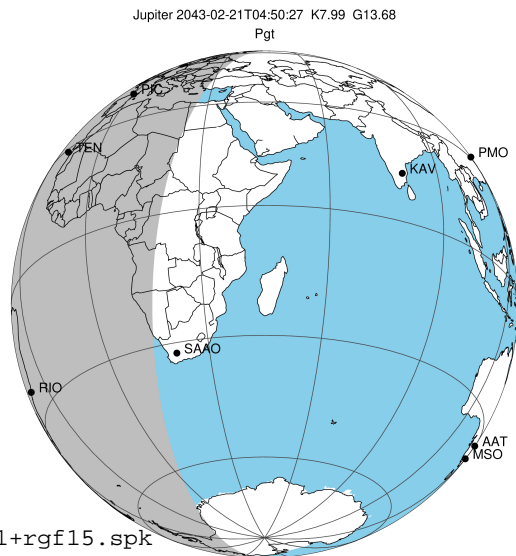


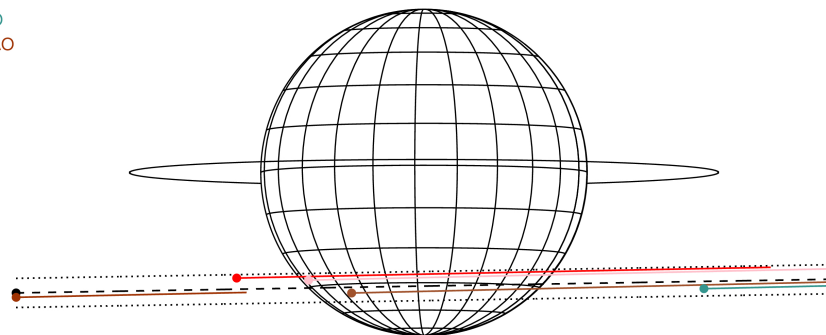
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-02-21T04:50:27.070
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068699828919570560
 2Mass ID (if available) : 17520075-2258176

Jupiter 2043-02-21T04:50:27 K7.99 G13.68 Pgt

ICRS Star Coord at Epoch: 17h 52m 00.74787s -22:58:17.71568s
 RUWE (>1.4 is poor) : 0.90
 K magnitude : 7.988
 G magnitude : 13.684
 RP magnitude : 12.293
 BP magnitude : 16.060
 DUPflag : 0
 Distance (au) : 5.670
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 26.38
 Sun-Target sep (deg) : 63.69
 Sun-Moon sep (deg) : 148.61
 B (ring opening deg) : -2.53
 PA of pole (deg) : 0.02
 Pole direction: RA (deg): 268.05662
 Dec (deg): 64.49732
 C/A sky separation (") : 12.097
 C/A sky separation (km) : 49746.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



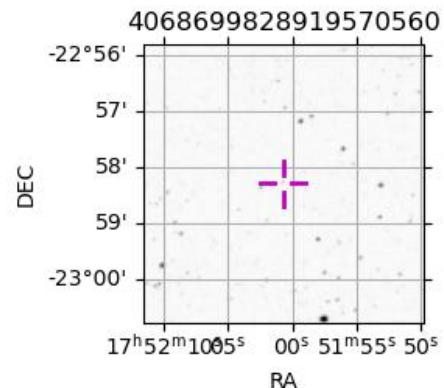
Earth
 PIC
 TEN
 RIO
 ESO
 SAAO



2043-02-21T04:50:27.0700 α: 17 52 00.74787 δ: -22 58 17.716 C/A ***** PA 0.96 deg v_sky +26.38 km/s D 05.67 AU
 Credit: Styled after SORA/Lucky Star

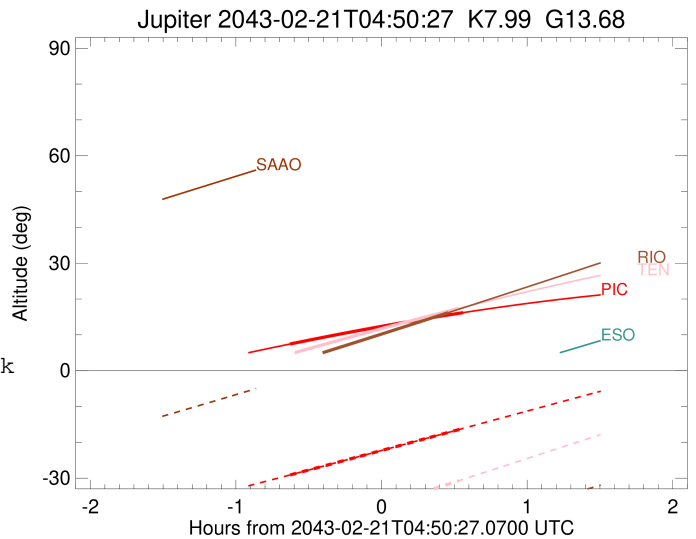
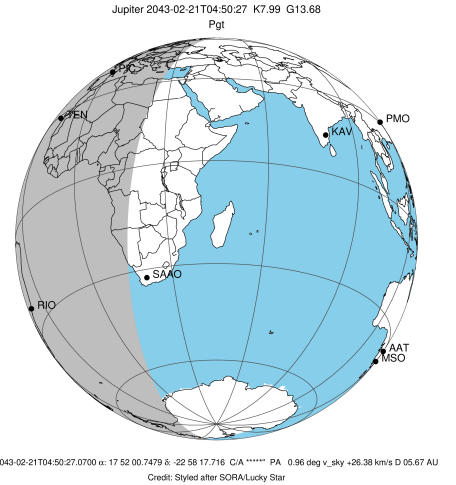
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+ +	FEB 21 04:12 - FEB 21 05:24	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 21 05:22 - FEB 21 05:22	Pne
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 21 05:17 - FEB 21 05:17	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			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-02-21T04:48:24.710
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        : 4068699828919570560
2Mass ID (if available) : 17520075-2258176
ICRS Star Coord at Epoch: 17h 52m 00.74787s -22:58:17.71568s
RUWE (>1.4 is poor)  : 0.90
K magnitude           : 7.988
G magnitude           : 13.684
RP magnitude          : 12.293
BP magnitude          : 16.060
DUPflag              : 0
Distance (au)         : 5.670
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 26.38
Sun-Target sep (deg)  : 63.69
Sun-Moon sep (deg)    : 149.26
B (ring opening deg)  : -2.53
PA of pole (deg)      : 0.02
Pole direction: RA (deg): 268.05662
Dec (deg): 64.49732
C/A sky separation (") : 10.827
C/A sky separation (km) : 44523.5
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
    
```

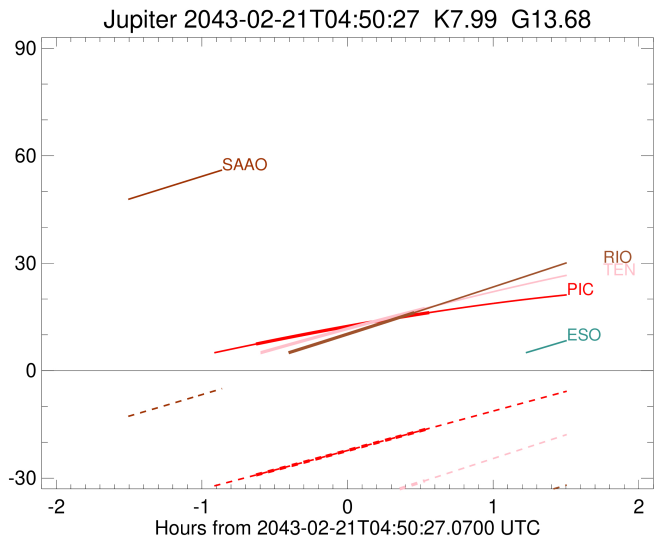
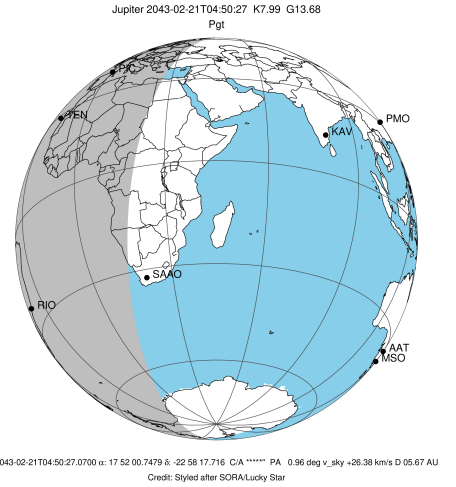


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-21T04:12:48.050	7.44	-29.10	71488.4	-39.64	-43.35
Jupiter	E	2043-02-21T05:24:05.399	16.20	-16.12	71488.8	-37.34	-41.01

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-02-21T04:47:26.290
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       : 4068699828919570560
2Mass ID (if available) : 17520075-2258176
ICRS Star Coord at Epoch: 17h 52m 00.74787s -22:58:17.71568s
RUWE (>1.4 is poor) : 0.90
K magnitude           : 7.988
G magnitude           : 13.684
RP magnitude         : 12.293
BP magnitude         : 16.060
DUPflag              : 0
Distance (au)        : 5.670
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 26.38
Sun-Target sep (deg) : 63.69
Sun-Moon sep (deg)   : 149.43
B (ring opening deg) : -2.53
PA of pole (deg)     : 0.02
Pole direction: RA (deg): 268.05662
Dec (deg): 64.49732
C/A sky separation (") : 11.190
C/A sky separation (km) : 46018.9
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
    
```

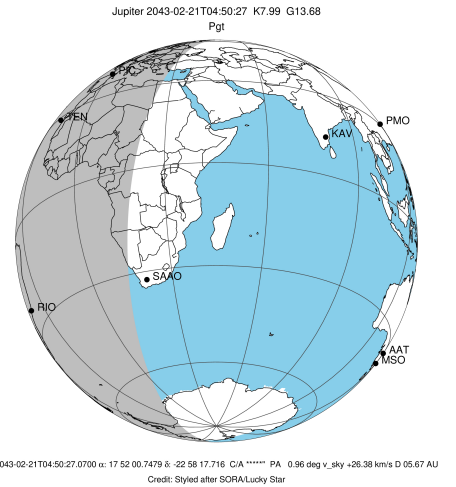


x: target alt < 5.0 deg or sun > -5.0 deg

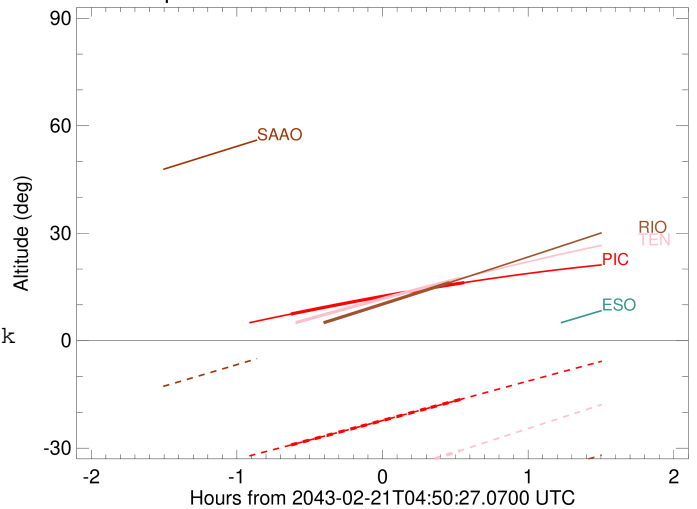
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-21T04:12:40.916	4.63x	-45.87	71488.2	-41.29	-45.00
Jupiter	E	2043-02-21T05:22:16.916	17.37	-30.74	71488.5	-38.78	-42.48

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-02-21T04:46:57.850
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       : 4068699828919570560
2Mass ID (if available) : 17520075-2258176
ICRS Star Coord at Epoch: 17h 52m 00.74787s -22:58:17.71568s
RUWE (>1.4 is poor) : 0.90
K magnitude          : 7.988
G magnitude          : 13.684
RP magnitude         : 12.293
BP magnitude         : 16.060
DUPflag             : 0
Distance (au)        : 5.670
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 26.38
Sun-Target sep (deg) : 63.69
Sun-Moon sep (deg)   : 149.39
B (ring opening deg) : -2.53
PA of pole (deg)     : 0.02
Pole direction: RA (deg): 268.05662
Dec (deg): 64.49732
C/A sky separation (") : 12.658
C/A sky separation (km) : 52053.6
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
    
```



Jupiter 2043-02-21T04:50:27 K7.99 G13.68



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	2043-02-21T04:16:02.801	2.85x	-52.53	71487.2	-47.97	-51.62
Jupiter	E	2043-02-21T05:17:57.634	16.19	-43.64	71487.6	-45.37	-49.07