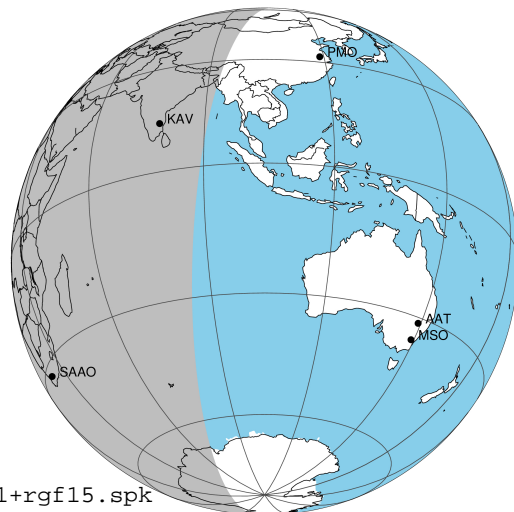


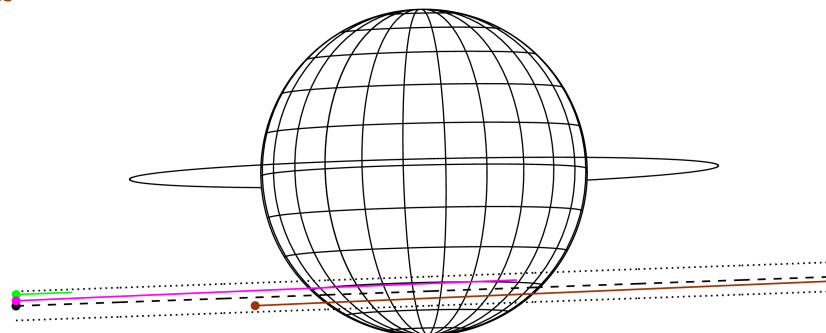
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-02-28T00:15:22.520
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116568480827537536
 2Mass ID (if available) : 17395143-2249165

Jupiter 2031-02-28T00:15:22 K9.00 G14.60 Pgt

ICRS Star Coord at Epoch: 17h 39m 51.40962s -22:49:16.82611s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 9.001
 G magnitude : 14.595
 RP magnitude : 13.221
 BP magnitude : 16.893
 DUPflag : 0
 Distance (au) : 5.513
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 21.63
 Sun-Target sep (deg) : 73.41
 Sun-Moon sep (deg) : 150.71
 B (ring opening deg) : -2.65
 PA of pole (deg) : 1.33
 Pole direction: RA (deg): 268.05701
 Dec (deg): 64.49651
 C/A sky separation (") : 13.014
 C/A sky separation (km) : 52037.5
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



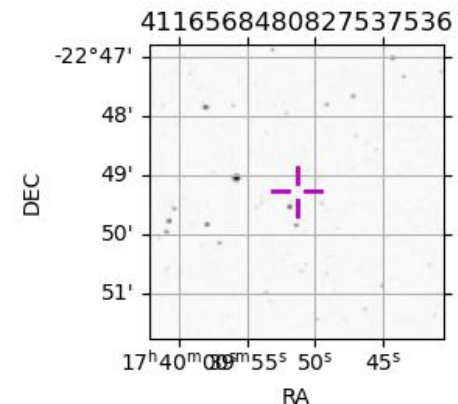
Earth
 PMO
 KAV
 SAAO



2031-02-28T00:15:22.5200 α: 17 39 51.4096 δ: -22 49 16.826 C/A ***** PA 2.05 deg v_sky +21.63 km/s D 05.51 AU
 Credit: Styled after SORA/Lucky Star

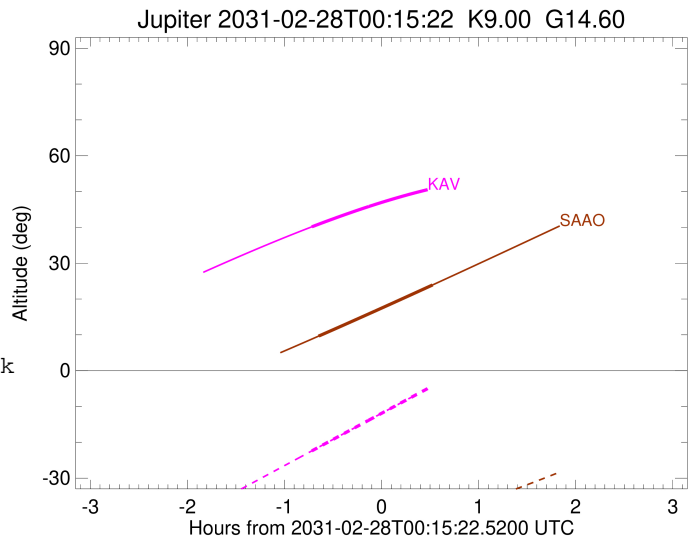
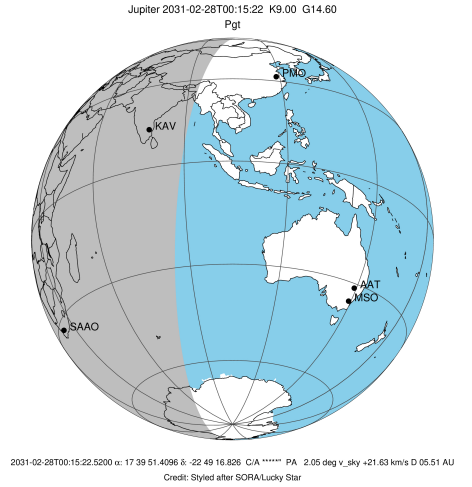
Observable events with sun below -5 deg and altitude above 5 deg

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			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			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+	FEB 27 23:32 - FEB 27 23:32	Pin
RIO	Rio de Janeiro	-22.9	316.8			Pnn
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	+ +	FEB 27 23:36 - FEB 28 00:46	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-28T00:13:22.390
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       : 4116568480827537536
2Mass ID (if available) : 17395143-2249165
ICRS Star Coord at Epoch: 17h 39m 51.40962s -22:49:16.82611s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 9.001
G magnitude           : 14.595
RP magnitude         : 13.221
BP magnitude         : 16.893
DUPflag              : 0
Distance (au)        : 5.513
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 21.63
Sun-Target sep (deg) : 73.41
Sun-Moon sep (deg)   : 150.71
B (ring opening deg) : -2.65
PA of pole (deg)     : 1.33
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation ("): 12.174
C/A sky separation (km): 48676.7
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
    
```

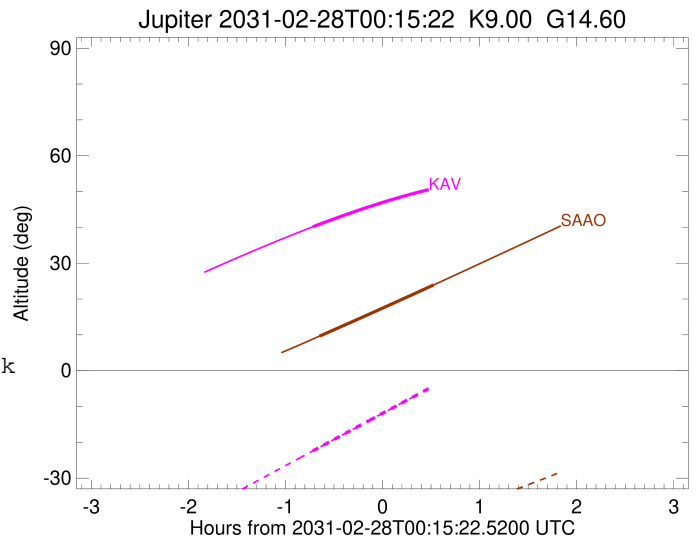
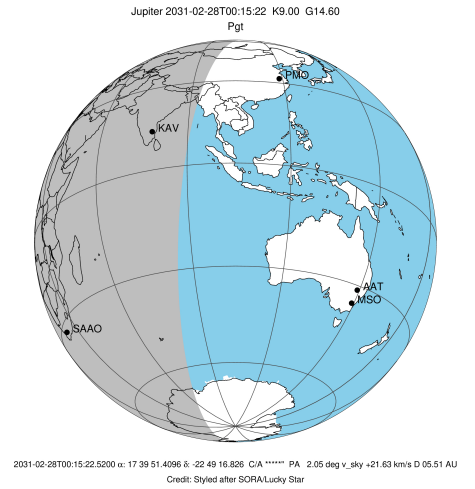


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-27T23:32:20.500	40.16	-22.38	71487.4	-43.85	-47.56
Jupiter	E	2031-02-28T00:54:30.034	51.62	-2.43x	71487.7	-41.94	-45.66

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-28T00:11:37.100
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      : 4116568480827537536
2Mass ID (if available) : 17395143-2249165
ICRS Star Coord at Epoch: 17h 39m 51.40962s -22:49:16.82611s
RUWE (>1.4 is poor) : 1.00
K magnitude          : 9.001
G magnitude          : 14.595
RP magnitude         : 13.221
BP magnitude         : 16.893
DUPflag             : 0
Distance (au)       : 5.513
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 21.63
Sun-Target sep (deg) : 73.41
Sun-Moon sep (deg)  : 150.18
B (ring opening deg) : -2.65
PA of pole (deg)    : 1.33
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 13.787
C/A sky separation (km) : 55126.6
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	2031-02-27T23:36:33.399	9.65	-48.13	71486.1	-51.50	-55.03
Jupiter	E	2031-02-28T00:46:47.720	23.89	-40.92	71486.5	-49.27	-52.88