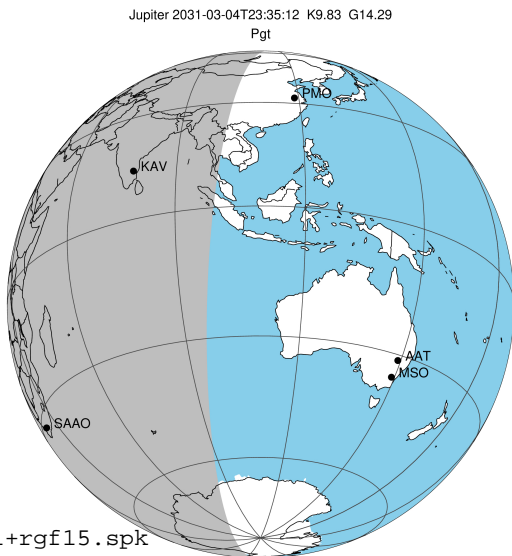


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-03-04T23:35:12.490
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116885174478177792
 2Mass ID (if available) : 17423205-2250172

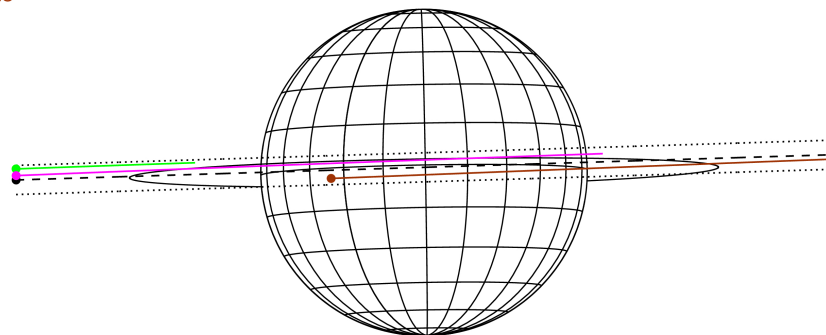
Jupiter 2031-03-04T23:35:12 K9.83 G14.29 Pgt

ICRS Star Coord at Epoch: 17h 42m 32.05223s -22:50:17.23195s
 RUWE (>1.4 is poor) : 1.04
 K magnitude : 9.834
 G magnitude : 14.295
 RP magnitude : 13.139
 BP magnitude : 15.699
 DUPflag : 0
 Distance (au) : 5.435
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 19.43
 Sun-Target sep (deg) : 77.79
 Sun-Moon sep (deg) : 150.61
 B (ring opening deg) : -2.65
 PA of pole (deg) : 1.04
 Pole direction: RA (deg): 268.05701
 Dec (deg): 64.49651
 C/A sky separation (") : 0.573
 C/A sky separation (km) : 2257.6
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp



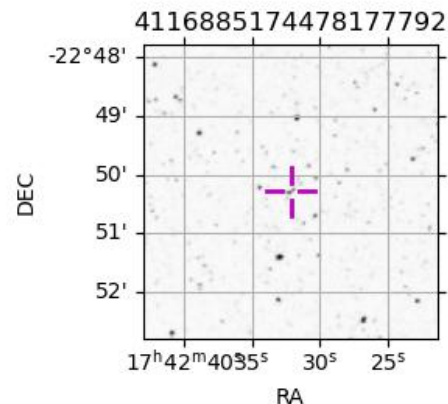
2031-03-04T23:35:12.4900 cc: 17 42 32.0522 s: -22 50 17.232 C/A 0.563° PA 181.77 deg v_sky +19.43 km/s D 05.43 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PMO
 KAV
 SAAO



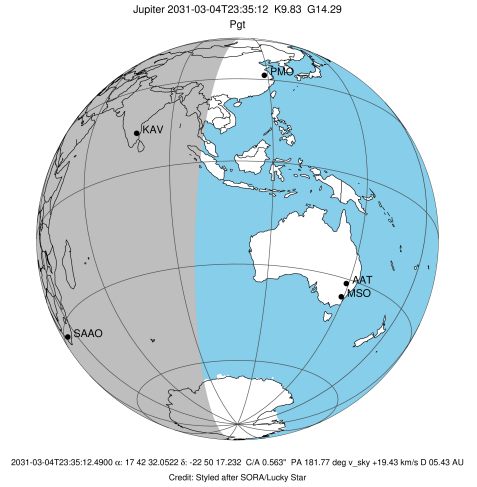
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	MAR 04 22:30 - MAR 05 00:34	Pie
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	+	MAR 05 00:32 - MAR 05 00:32	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

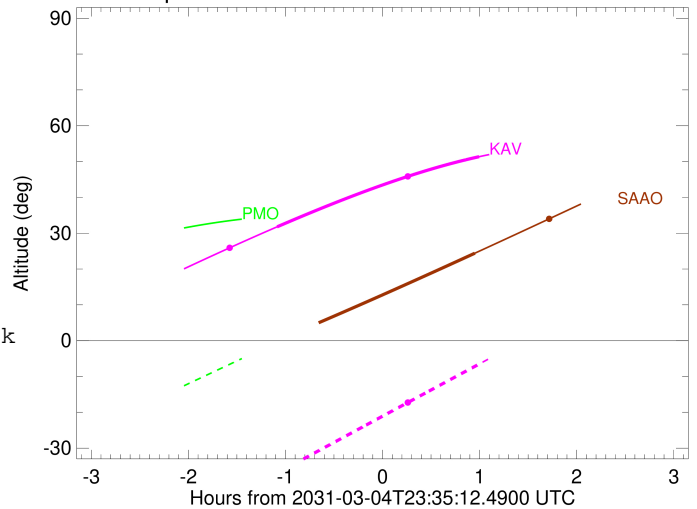


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-04T23:32:18.030
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       : 4116885174478177792
2Mass ID (if available) : 17423205-2250172
ICRS Star Coord at Epoch: 17h 42m 32.05223s -22:50:17.23195s
RUWE (>1.4 is poor) : 1.04
K magnitude          : 9.834
G magnitude          : 14.295
RP magnitude         : 13.139
BP magnitude         : 15.699
DUPflag             : 0
Distance (au)        : 5.435
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 19.43
Sun-Target sep (deg) : 77.79
Sun-Moon sep (deg)   : 151.27
B (ring opening deg) : -2.65
PA of pole (deg)     : 1.04
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 1.394
C/A sky separation (km) : 5495.7
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
    
```



Jupiter 2031-03-04T23:35:12 K9.83 G14.29

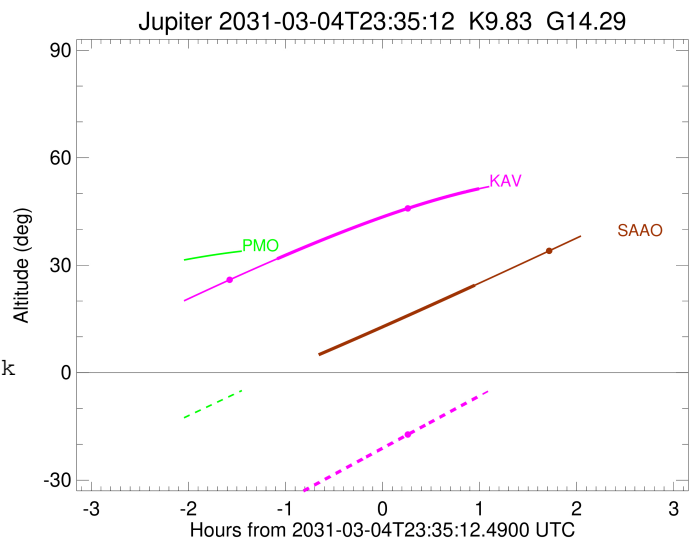
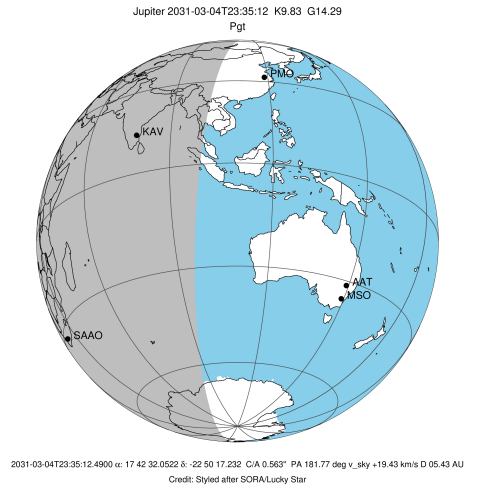


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-04T22:30:04.654	31.78	-36.98	71492.0	3.31	3.79
Jupiter	E	2031-03-05T00:34:48.709	51.34	-6.56	71491.9	5.38	6.14

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-04T23:30:39.870
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        : 4116885174478177792
2Mass ID (if available) : 17423205-2250172
ICRS Star Coord at Epoch: 17h 42m 32.05223s -22:50:17.23195s
RUWE (>1.4 is poor) : 1.04
K magnitude           : 9.834
G magnitude           : 14.295
RP magnitude          : 13.139
BP magnitude          : 15.699
DUPflag              : 0
Distance (au)         : 5.435
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 19.43
Sun-Target sep (deg)  : 77.79
Sun-Moon sep (deg)    : 151.42
B (ring opening deg) : -2.65
PA of pole (deg)      : 1.04
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 0.260
C/A sky separation (km) : 1024.1
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	2031-03-04T22:29:33.612	-0.01x	-51.30	71492.0	-1.99	-2.27
Jupiter	E	2031-03-05T00:32:10.041	24.39	-44.33	71492.0	0.36	0.41