

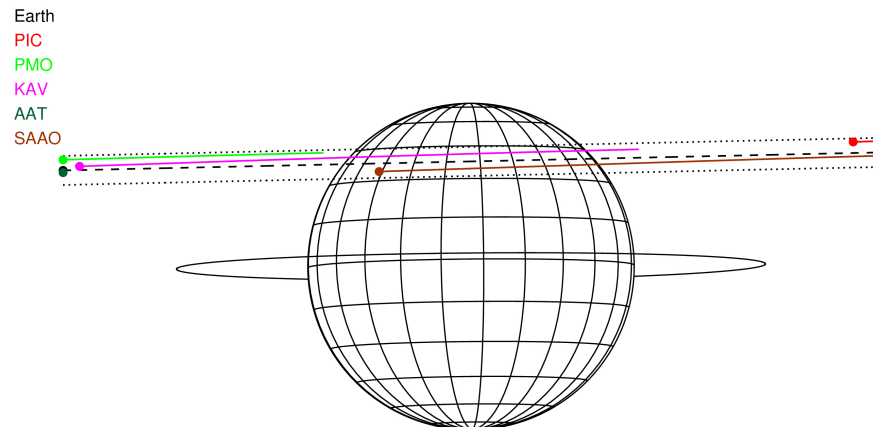
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-03-15T23:09:04.260  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4068935193131233408  
 2Mass ID (if available) : 17473145-2251551

Jupiter 2031-03-15T23:09:04 K7.98 G13.47 Pgt

ICRS Star Coord at Epoch: 17h 47m 31.44417s -22:51:55.45672s  
 RUWE (>1.4 is poor) : 0.94  
 K magnitude : 7.983  
 G magnitude : 13.471  
 RP magnitude : 12.083  
 BP magnitude : 15.902  
 DUPflag : 0  
 Distance (au) : 5.259  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 14.39  
 Sun-Target sep (deg) : 87.61  
 Sun-Moon sep (deg) : 6.58  
 B (ring opening deg) : -2.63  
 PA of pole (deg) : 0.51  
 Pole direction: RA (deg): 268.05700  
 Dec (deg): 64.49651  
 C/A sky separation (") : 12.067  
 C/A sky separation (km) : 46022.6  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

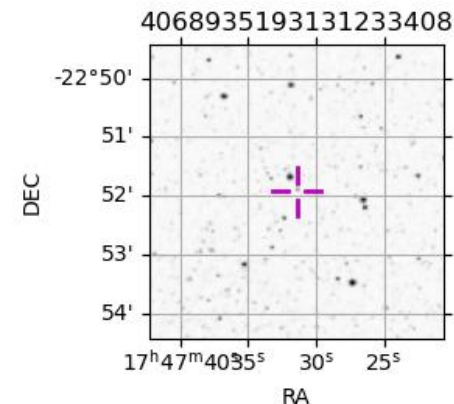


2031-03-15T23:09:04.2600 α: 17 47 31.4442 δ: -22 51 55.457 C/A \*\*\*\*\* PA 181.26 deg v\_sky +14.39 km/s D 05.26 AU  
 Credit: Styled after SORA/Lucky Star



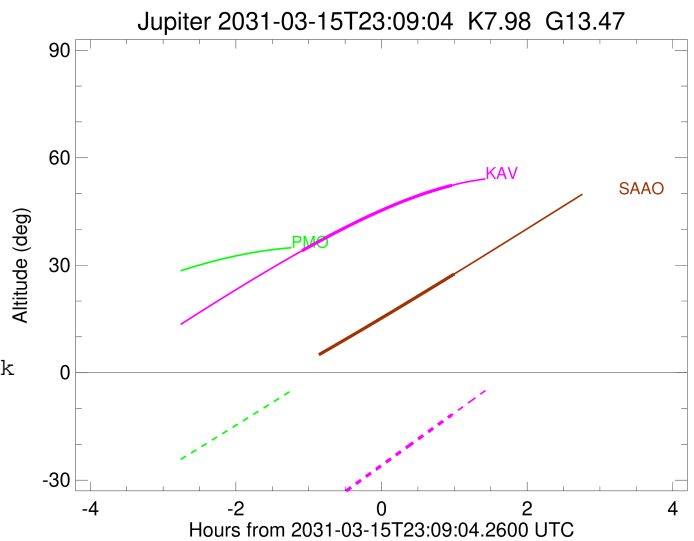
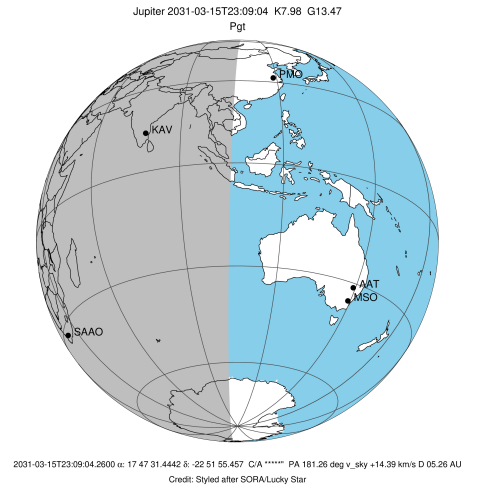
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	MAR 15 22:03 - MAR 16 00:06	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 16 00:08 - MAR 16 00:08	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-15T23:05:08.250
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      : 4068935193131233408
2Mass ID (if available) : 17473145-2251551
ICRS Star Coord at Epoch: 17h 47m 31.44417s -22:51:55.45671s
RUWE (>1.4 is poor) : 0.94
K magnitude          : 7.983
G magnitude          : 13.471
RP magnitude         : 12.083
BP magnitude         : 15.902
DUPflag             : 0
Distance (au)       : 5.259
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 14.39
Sun-Target sep (deg) : 87.61
Sun-Moon sep (deg)  : 6.12
B (ring opening deg) : -2.63
PA of pole (deg)    : 0.51
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation (") : 12.942
C/A sky separation (km) : 49357.3
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
    
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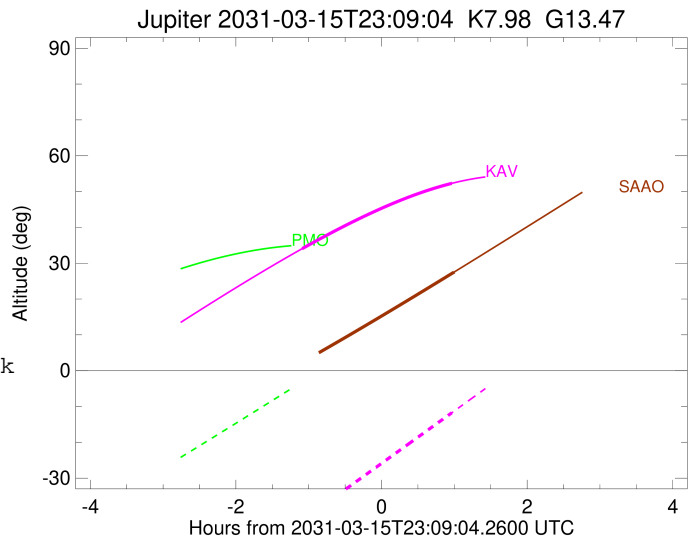
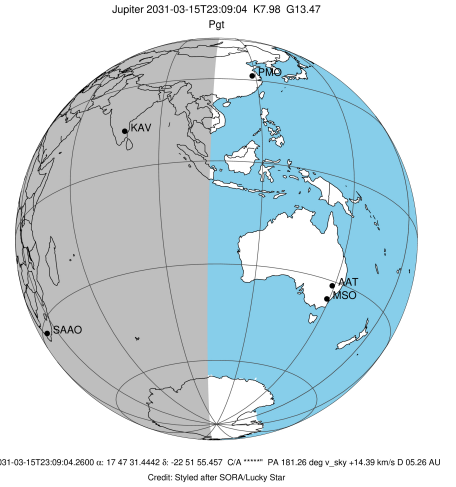


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-15T22:03:41.584	34.05	-41.76	71487.7	42.40	46.11
Jupiter	E	2031-03-16T00:06:57.081	52.28	-11.77	71487.3	44.65	48.36

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-15T23:02:22.270
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        : 4068935193131233408
2Mass ID (if available) : 17473145-2251551
ICRS Star Coord at Epoch: 17h 47m 31.44417s -22:51:55.45671s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 7.983
G magnitude           : 13.471
RP magnitude          : 12.083
BP magnitude          : 15.902
DUPflag              : 0
Distance (au)         : 5.259
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 14.39
Sun-Target sep (deg) : 87.61
Sun-Moon sep (deg)   : 5.93
B (ring opening deg) : -2.63
PA of pole (deg)     : 0.51
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation (") : 11.244
C/A sky separation (km) : 42882.7
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	2031-03-15T21:56:24.930	0.97x	-53.93	71488.8	35.46	39.07
Jupiter	E	2031-03-16T00:08:58.261	27.53	-50.59	71488.4	38.17	41.85