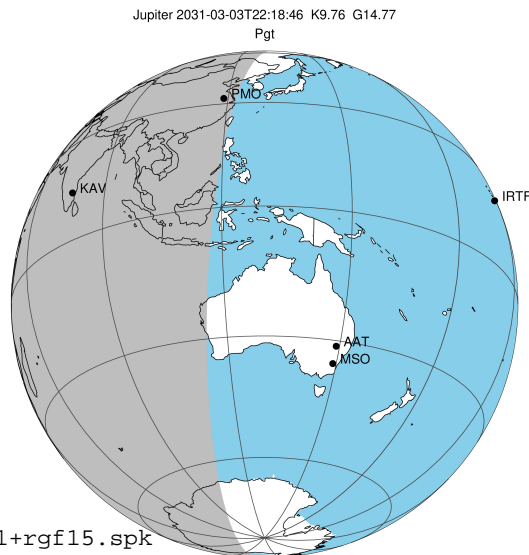


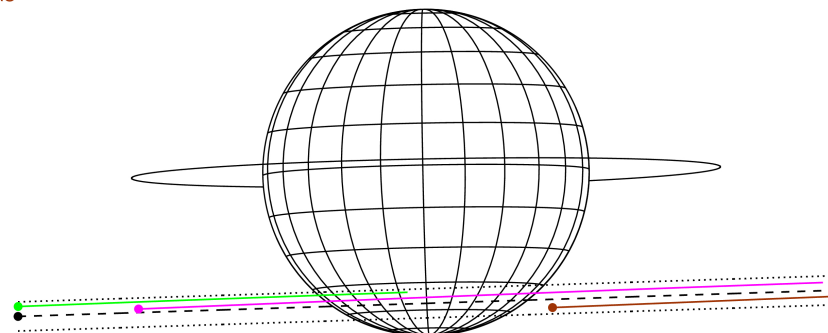
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-03-03T22:18:46.130  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4116926814090968448  
 2Mass ID (if available) : 17415924-2250179

Jupiter 2031-03-03T22:18:46 K9.76 G14.77 Pgt

ICRS Star Coord at Epoch: 17h 41m 59.25026s -22:50:18.05413s  
 RUWE (>1.4 is poor) : 1.03  
 K magnitude : 9.761  
 G magnitude : 14.772  
 RP magnitude : 13.495  
 BP magnitude : 16.628  
 DUPflag : 0  
 Distance (au) : 5.452  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 19.90  
 Sun-Target sep (deg) : 76.86  
 Sun-Moon sep (deg) : 163.05  
 B (ring opening deg) : -2.64  
 PA of pole (deg) : 1.10  
 Pole direction: RA (deg): 268.05701  
 Dec (deg): 64.49651  
 C/A sky separation (") : 14.492  
 C/A sky separation (km) : 57300.7  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk  
 URKALLv1.spk  
 naif0012.tls  
 nep097.bsp  
 nep101.bsp  
 sat4401.bsp



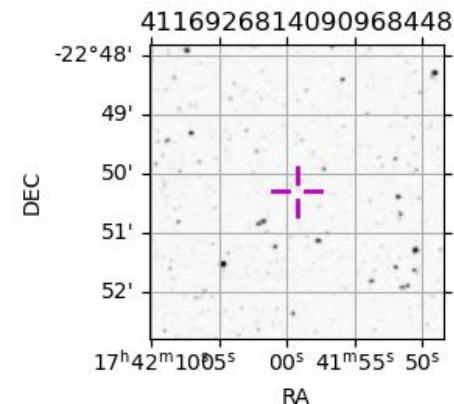
Earth  
 PMO  
 KAV  
 SAAO



2031-03-03T22:18:46.1300 α: 17 41 59.2503 δ: -22 50 18.054 C/A \*\*\*\*\* PA 1.83 deg v\_sky +19.90 km/s D 05.45 AU  
 Credit: Styled after SORA/Lucky Star

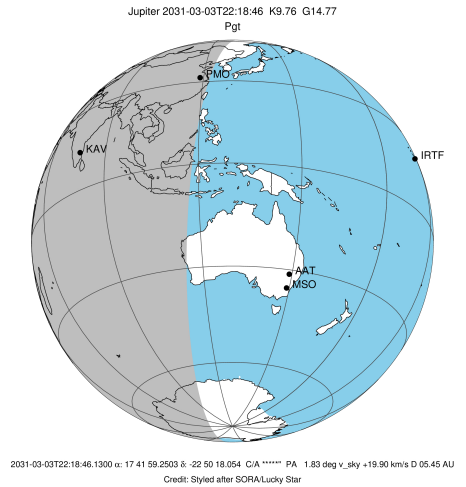
Observable events with sun below -5 deg and altitude above 5 deg

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	+	MAR 03 21:36 - MAR 03 21:36	Pin
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 03 21:35 - MAR 03 22:54	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			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

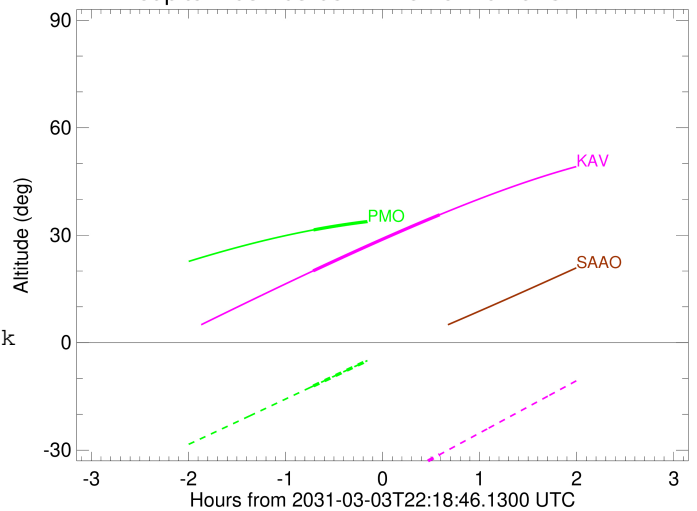


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-03T22:17:51.440
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PMO
Location              : Purple Mtn Obs. Nanking
Latitude (deg)        : 32.06667
E. Longitude (deg)    : 118.82089
Altitude (km)         : 0.364
Gaia source ID        : 4116926814090968448
2Mass ID (if available) : 17415924-2250179
ICRS Star Coord at Epoch: 17h 41m 59.25026s -22:50:18.05413s
RUWE (>1.4 is poor)  : 1.03
K magnitude           : 9.761
G magnitude           : 14.772
RP magnitude          : 13.495
BP magnitude          : 16.628
DUPflag              : 0
Distance (au)         : 5.452
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 19.90
Sun-Target sep (deg)  : 76.86
Sun-Moon sep (deg)    : 163.22
B (ring opening deg) : -2.64
PA of pole (deg)      : 1.10
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 13.194
C/A sky separation (km) : 52169.2
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 2031-03-03T22:18:46 K9.76 G14.77

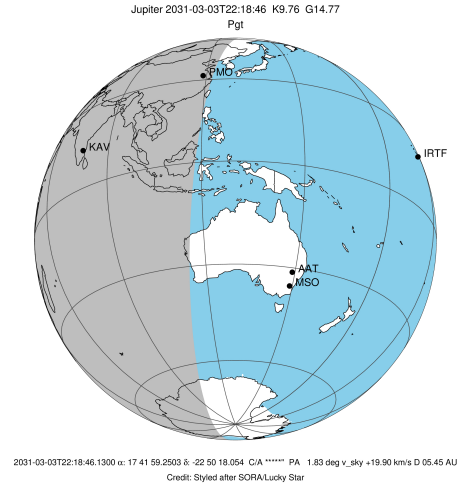


x: target alt < 5.0 deg or sun > -5.0 deg

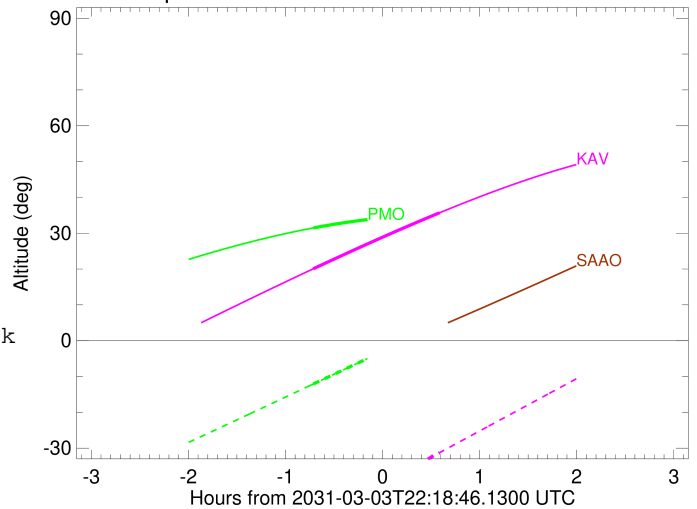
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-03T21:36:10.849	31.48	-12.06	71486.8	-47.69	-51.34
Jupiter	E	2031-03-03T22:59:35.738	35.26	5.54x	71487.0	-45.99	-49.68

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-03T22:14:56.530
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        : 4116926814090968448
2Mass ID (if available) : 17415924-2250179
ICRS Star Coord at Epoch: 17h 41m 59.25026s -22:50:18.05413s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 9.761
G magnitude           : 14.772
RP magnitude          : 13.495
BP magnitude          : 16.628
DUPflag              : 0
Distance (au)         : 5.452
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 19.90
Sun-Target sep (deg) : 76.86
Sun-Moon sep (deg)   : 163.77
B (ring opening deg) : -2.64
PA of pole (deg)     : 1.10
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 13.829
C/A sky separation (km) : 54680.6
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 2031-03-03T22:18:46 K9.76 G14.77



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	2031-03-03T21:35:55.987	20.05	-50.31	71486.2	-51.00	-54.56
Jupiter	E	2031-03-03T22:54:05.883	35.71	-31.25	71486.6	-48.70	-52.32