

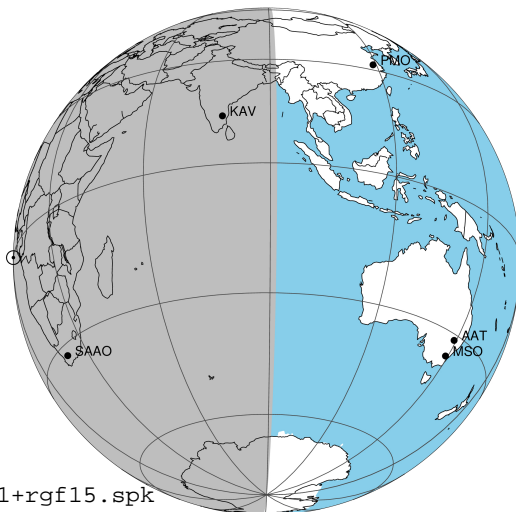
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-03-21T00:01:25.540  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4068878847502378624  
 2Mass ID (if available) : 17492127-2252281

Jupiter 2031-03-21T00:01:25 K7.60 G14.11 Pgt

ICRS Star Coord at Epoch: 17h 49m 21.25624s -22:52:28.19879s

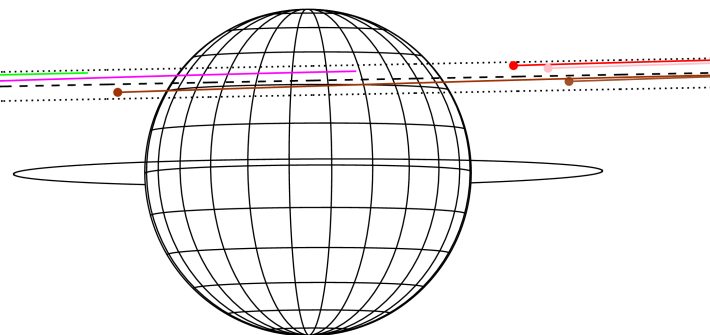
RUWE (>1.4 is poor) : 0.95  
 K magnitude : 7.598  
 G magnitude : 14.107  
 RP magnitude : 12.563  
 BP magnitude : 17.585  
 DUPflag : 0  
 Distance (au) : 5.177  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 12.01  
 Sun-Target sep (deg) : 92.20  
 Sun-Moon sep (deg) : 64.55  
 B (ring opening deg) : -2.63  
 PA of pole (deg) : 0.31  
 Pole direction: RA (deg): 268.05699  
 Dec (deg): 64.49651  
 C/A sky separation (") : 10.720  
 C/A sky separation (km) : 40251.3  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2031-03-21T00:01:25 K7.60 G14.11  
 Pgt



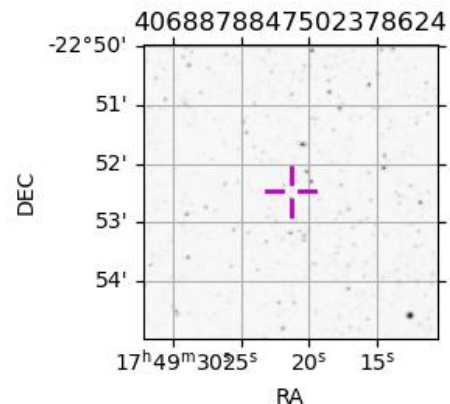
2031-03-21T00:01:25.5400 a: 17 49 21.2562 s: -22 52 28.199 C/A \*\*\*\*\* PA 181.10 deg v\_sky +12.01 km/s D 05.18 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PIC  
 PMO  
 TEN  
 KAV  
 RIO  
 SAAO



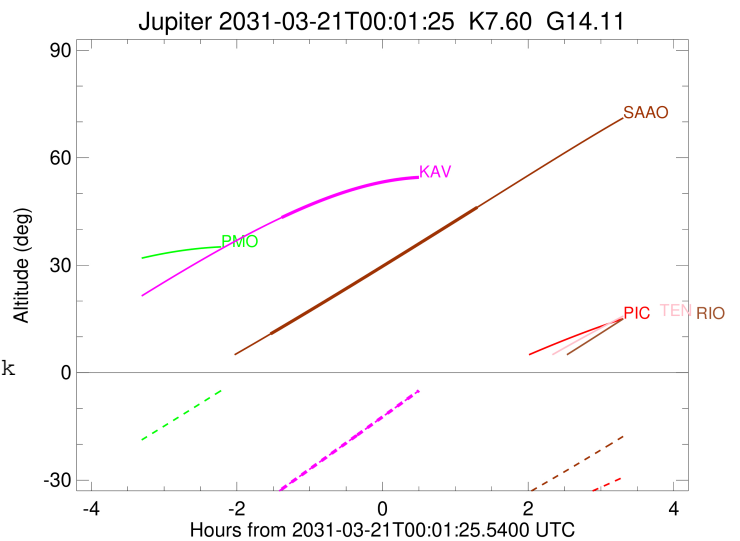
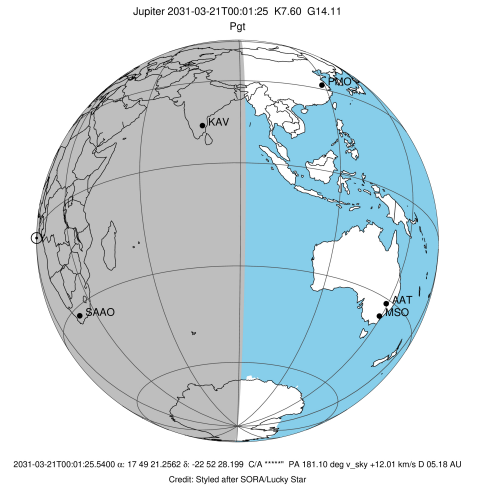
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
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 20 22:38 - MAR 20 22:38	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	+ +	MAR 20 22:29 - MAR 21 01:19	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-20T23:59:31.100
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        : 4068878847502378624
2Mass ID (if available) : 17492127-2252281
ICRS Star Coord at Epoch: 17h 49m 21.25624s -22:52:28.19879s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 7.598
G magnitude           : 14.107
RP magnitude          : 12.563
BP magnitude          : 17.585
DUPflag              : 0
Distance (au)         : 5.177
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 12.01
Sun-Target sep (deg)  : 92.20
Sun-Moon sep (deg)    : 65.31
B (ring opening deg) : -2.63
PA of pole (deg)      : 0.31
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 11.687
C/A sky separation (km) : 43882.2
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
    
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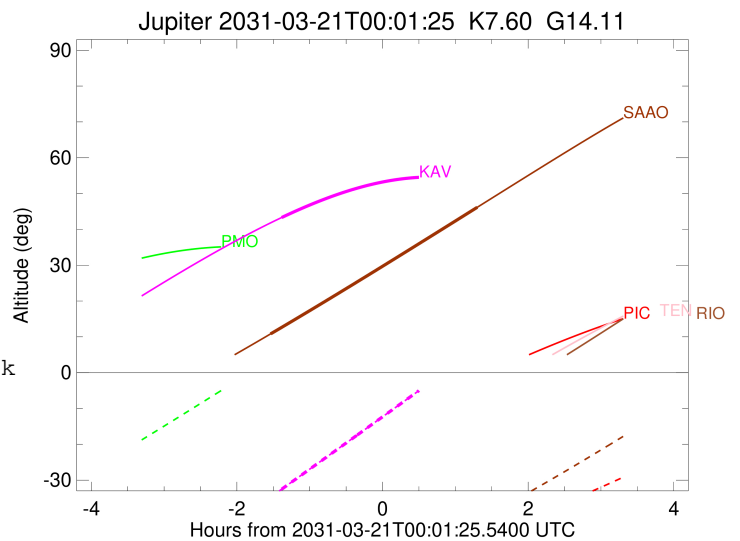
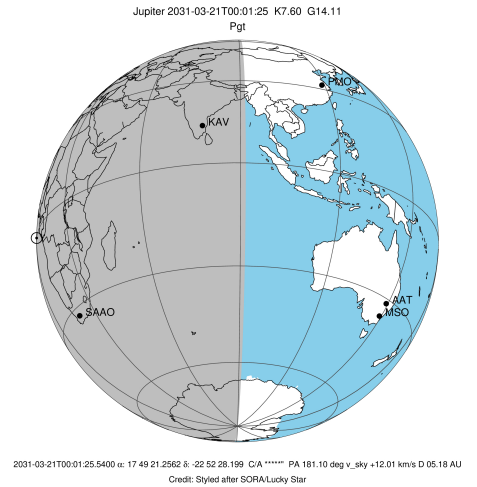


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-20T22:38:17.308	43.30	-32.54	71488.6	36.69	40.34
Jupiter	E	2031-03-21T01:21:10.963	53.37	7.14x	71488.3	38.65	42.34

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-20T23:53:47.500
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      : 4068878847502378624
2Mass ID (if available) : 17492127-2252281
ICRS Star Coord at Epoch: 17h 49m 21.25624s -22:52:28.19879s
RUWE (>1.4 is poor) : 0.95
K magnitude         : 7.598
G magnitude         : 14.107
RP magnitude        : 12.563
BP magnitude        : 17.585
DUPflag            : 0
Distance (au)      : 5.177
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 12.01
Sun-Target sep (deg) : 92.20
Sun-Moon sep (deg)  : 65.32
B (ring opening deg) : -2.63
PA of pole (deg)    : 0.31
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 10.055
C/A sky separation (km) : 37753.6
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	2031-03-20T22:29:13.264	10.82	-57.65	71489.6	30.33	33.72
Jupiter	E	2031-03-21T01:19:35.525	46.17	-41.27	71489.2	33.27	36.81