

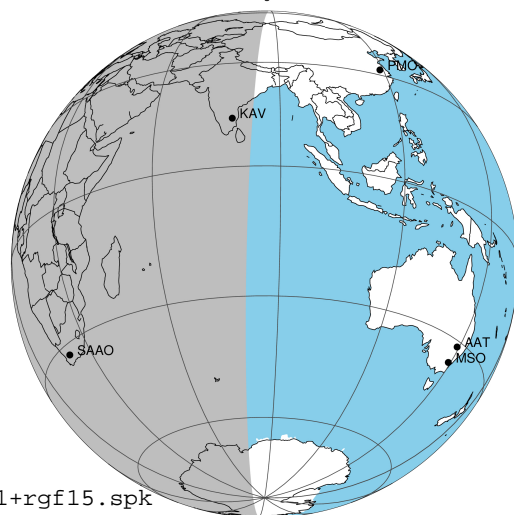
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-03-14T00:37:24.240
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068843624430283392
 2Mass ID (if available) : 17464436-2252087

Jupiter 2031-03-14T00:37:24 K9.28 G13.48 Pgt

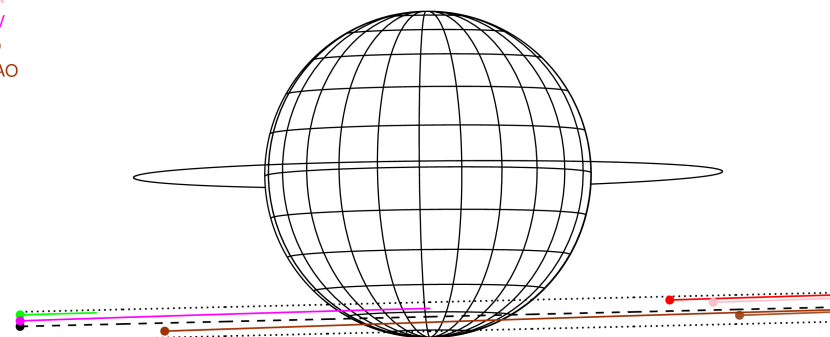
ICRS Star Coord at Epoch: 17h 46m 44.36575s -22:52:08.91730s

RUWE (>1.4 is poor) : 0.91
 K magnitude : 9.282
 G magnitude : 13.479
 RP magnitude : 12.372
 BP magnitude : 14.774
 DUPflag : 0
 Distance (au) : 5.290
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 15.30
 Sun-Target sep (deg) : 85.86
 Sun-Moon sep (deg) : 33.42
 B (ring opening deg) : -2.63
 PA of pole (deg) : 0.59
 Pole direction: RA (deg): 268.05700
 Dec (deg): 64.49651
 C/A sky separation (") : 16.241
 C/A sky separation (km) : 62308.8
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-03-14T00:37:24 K9.28 G13.48
 Pgt



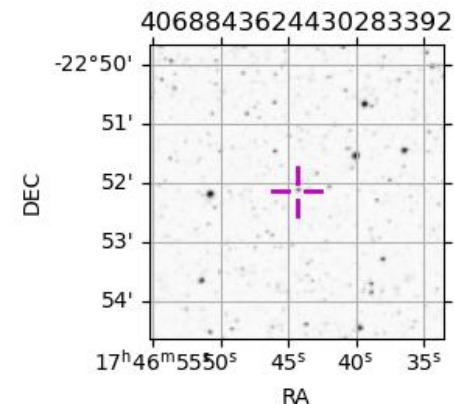
Earth
 PIC
 PMO
 TEN
 KAV
 RIO
 SAAO



2031-03-14T00:37:24.2400 α: 17 46 44.3658 δ: -22 52 08.917 C/A ***** PA 1.35 deg v_sky +15.30 km/s D 05.29 AU
 Credit: Styled after SORA/Lucky Star

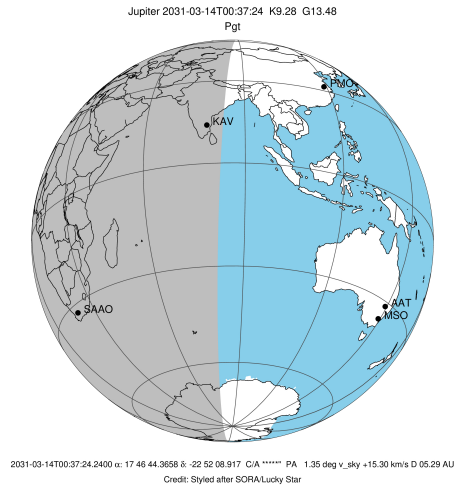
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	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 13 23:50 - MAR 13 23:50	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 13 23:59 - MAR 14 01:06	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

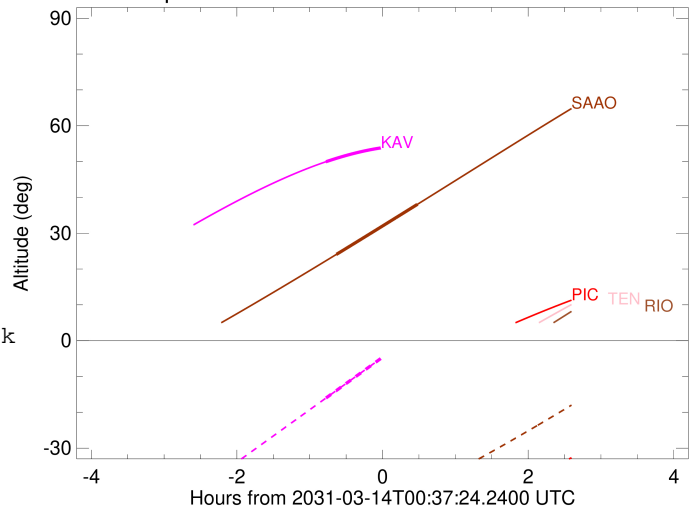


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-14T00:36:33.050
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : KAV
Location              : Kavalur Observatory
Latitude (deg)        : 12.57556
E. Longitude (deg)    : 78.83167
Altitude (km)         : 0.722
Gaia source ID        : 4068843624430283392
2Mass ID (if available) : 17464436-2252087
ICRS Star Coord at Epoch: 17h 46m 44.36575s -22:52:08.91730s
RUWE (>1.4 is poor) : 0.91
K magnitude           : 9.282
G magnitude           : 13.479
RP magnitude          : 12.372
BP magnitude          : 14.774
DUPflag              : 0
Distance (au)         : 5.290
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 15.30
Sun-Target sep (deg) : 85.86
Sun-Moon sep (deg)   : 33.77
B (ring opening deg) : -2.63
PA of pole (deg)     : 0.59
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation (") : 15.289
C/A sky separation (km) : 58656.8
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 2031-03-14T00:37:24 K9.28 G13.48

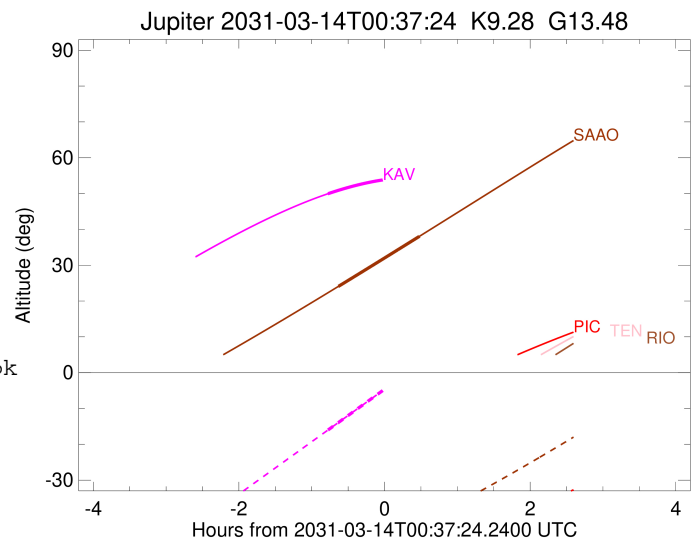
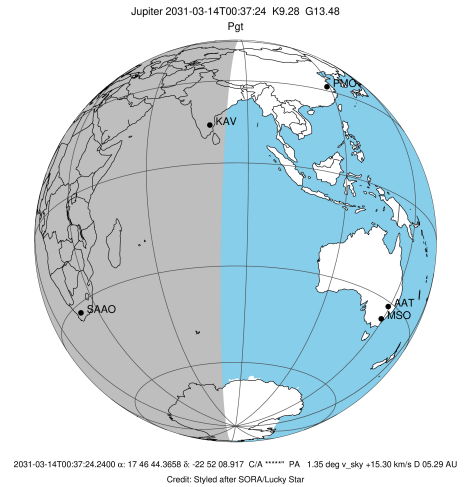


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-13T23:50:49.779	49.95	-16.01	71485.5	-56.01	-59.32
Jupiter	E	2031-03-14T01:22:21.628	54.44	6.32x	71485.8	-54.23	-57.64

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-14T00:32:43.670
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       : 4068843624430283392
2Mass ID (if available) : 17464436-2252087
ICRS Star Coord at Epoch: 17h 46m 44.36575s -22:52:08.91730s
RUWE (>1.4 is poor) : 0.91
K magnitude           : 9.282
G magnitude           : 13.479
RP magnitude          : 12.372
BP magnitude          : 14.774
DUPflag              : 0
Distance (au)        : 5.290
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 15.30
Sun-Target sep (deg) : 85.86
Sun-Moon sep (deg)   : 33.07
B (ring opening deg) : -2.63
PA of pole (deg)     : 0.59
Pole direction: RA (deg): 268.05700
Dec (deg): 64.49651
C/A sky separation (") : 16.867
C/A sky separation (km) : 64713.0
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	2031-03-13T23:59:24.576	24.08	-51.02	71484.1	-66.04	-68.63
Jupiter	E	2031-03-14T01:06:11.095	38.06	-41.86	71484.4	-63.45	-66.25