

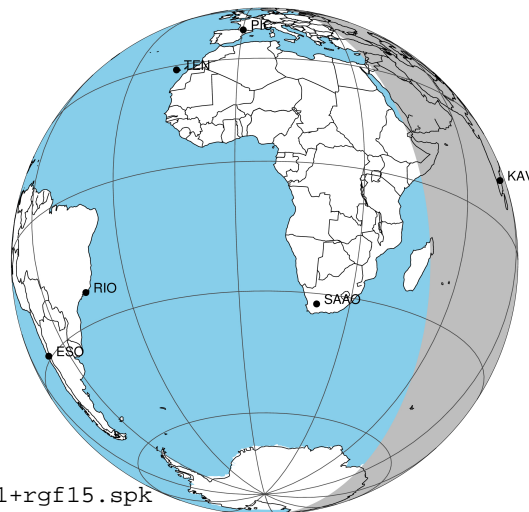
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-10-31T14:41:28.430
 Event type : Pt
 : Jupiter occs: topocentric, not geocentric
 : Not a ringed target
 Gaia source ID : 4068803767122847872
 2Mass ID (if available) : 17452525-2317115

Jupiter 2031-10-31T14:41:28 K9.41 G12.69 Pt

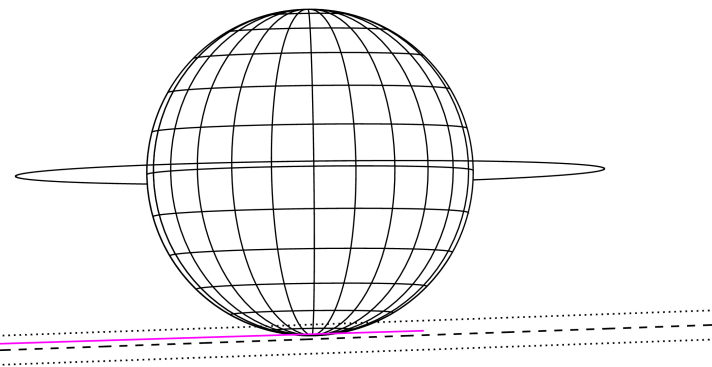
ICRS Star Coord at Epoch: 17h 45m 25.25546s -23:17:11.57080s

RUWE (>1.4 is poor) : 0.78
 K magnitude : 9.408
 G magnitude : 12.689
 RP magnitude : 11.746
 BP magnitude : 13.606
 DUPflag : 0
 Distance (au) : 5.828
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 32.71
 Sun-Target sep (deg) : 49.12
 Sun-Moon sep (deg) : 146.42
 B (ring opening deg) : -2.21
 PA of pole (deg) : 0.73
 Pole direction: RA (deg): 268.05681
 Dec (deg): 64.49652
 C/A sky separation (") : 17.268
 C/A sky separation (km) : 72985.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-10-31T14:41:28 K9.41 G12.69 Pt



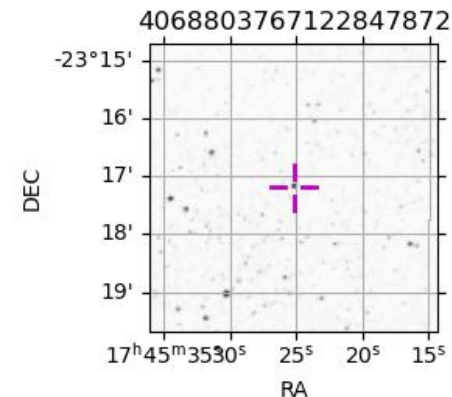
Earth
KAV



2031-10-31T14:41:28.4300 α: 17 45 25.2555 δ: -23 17 11.571 C/A ***** PA 2.03 deg v_sky +32.71 km/s D 05.83 AU
 Credit: Styled after SORA/Lucky Star

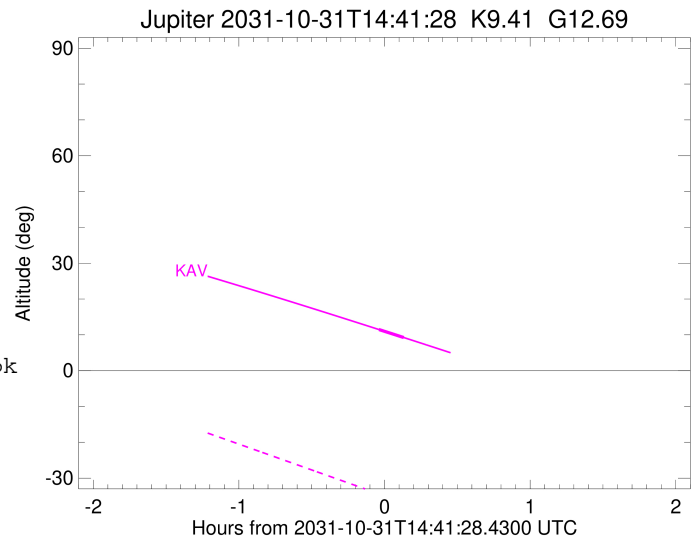
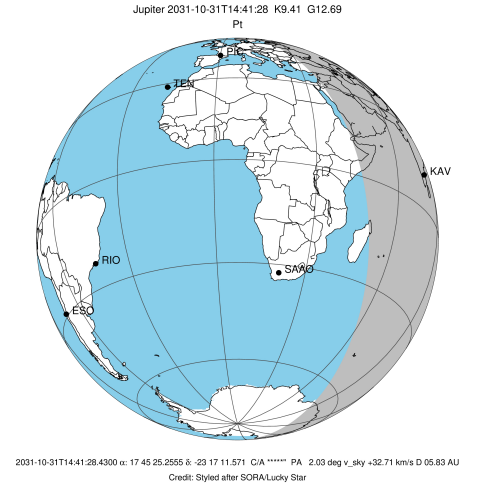
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	OCT 31 14:39 - OCT 31 14:49	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              : 2031-10-31T14:44:17.080
Event type             : Pt
: Jupiter occs: topocentric, not geocentric
: 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        : 4068803767122847872
2Mass ID (if available) : 17452525-2317115
ICRS Star Coord at Epoch: 17h 45m 25.25546s -23:17:11.57080s
RUWE (>1.4 is poor)  : 0.78
K magnitude            : 9.408
G magnitude            : 12.689
RP magnitude           : 11.746
BP magnitude           : 13.606
DUPflag               : 0
Distance (au)         : 5.828
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 32.71
Sun-Target sep (deg)  : 49.12
Sun-Moon sep (deg)    : 147.24
B (ring opening deg)  : -2.21
PA of pole (deg)      : 0.73
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (") : 16.751
C/A sky separation (km) : 70800.2
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
    
```



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	2031-10-31T14:39:13.964	11.47	-34.40	71485.4	-82.72	-83.58
Jupiter	E	2031-10-31T14:49:20.120	9.26	-36.84	71485.5	-80.79	-81.87