

target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-10-29T04:55:34.310
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068815208916048640
 2Mass ID (if available) : 17432974-2315450

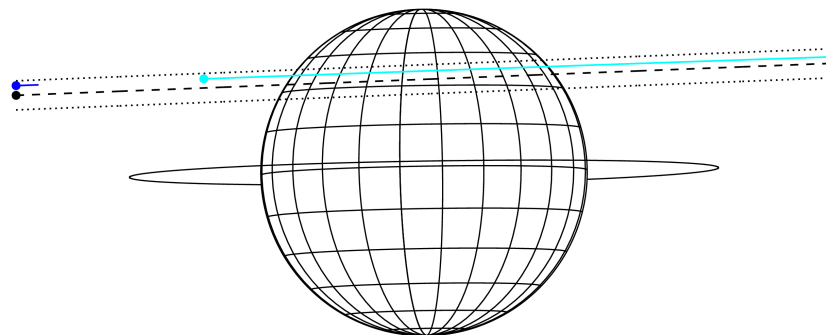
Jupiter 2031-10-29T04:55:34 K9.50 G14.64 Pgt

ICRS Star Coord at Epoch: 17h 43m 29.72445s -23:15:45.09653s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 9.503
 G magnitude : 14.641
 RP magnitude : 13.353
 BP magnitude : 16.544
 DUPflag : 0
 Distance (au) : 5.800
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 31.92
 Sun-Target sep (deg) : 51.08
 Sun-Moon sep (deg) : 115.21
 B (ring opening deg) : -2.22
 PA of pole (deg) : 0.94
 Pole direction: RA (deg): 268.05681
 Dec (deg): 64.49652
 C/A sky separation (") : 9.695
 C/A sky separation (km) : 40781.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



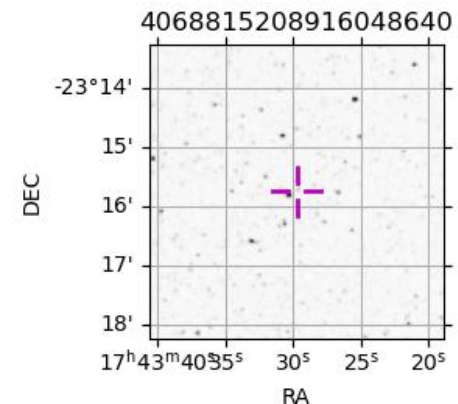
2031-10-29T04:55:34.3100 cc: 17 43 29.7244 s: -23 15 45.097 C/A 9.6877 PA 182.25 deg v_sky +31.92 km/s D 05.80 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PAL
 IRTF



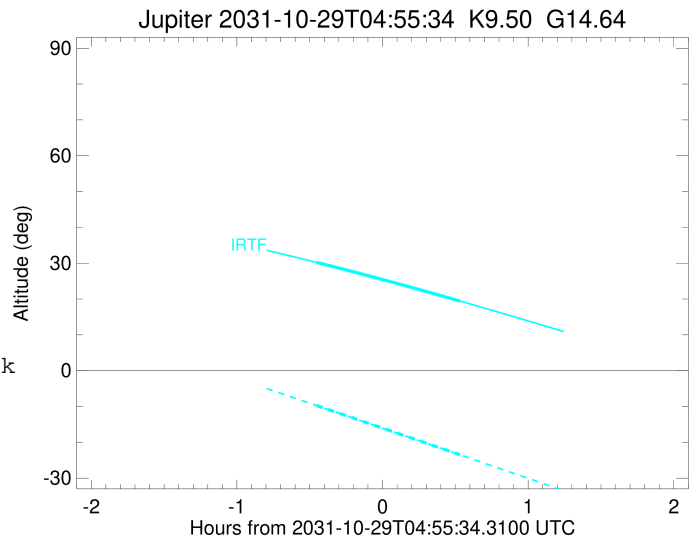
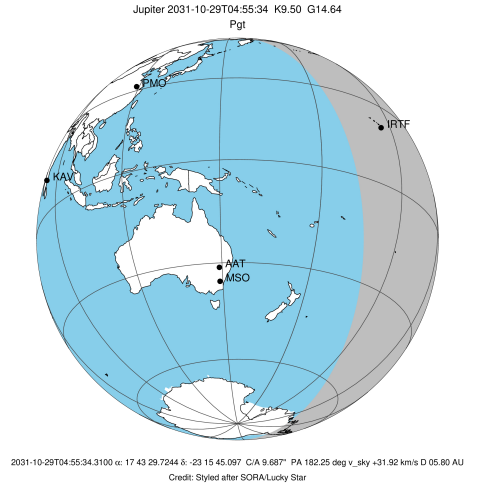
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	OCT 29 04:28 - OCT 29 05:27	Pie
KAV	Kavalur Observatory	12.6	78.8			Pnn
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             : 2031-10-29T04:57:59.820
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)        : 19.82622
E. Longitude (deg)    : 204.52800
Altitude (km)         : 4.168
Gaia source ID        : 4068815208916048640
2Mass ID (if available) : 17432974-2315450
ICRS Star Coord at Epoch: 17h 43m 29.72445s -23:15:45.09653s
RUWE (>1.4 is poor) : 0.93
K magnitude           : 9.503
G magnitude           : 14.641
RP magnitude          : 13.353
BP magnitude          : 16.544
DUPflag              : 0
Distance (au)         : 5.800
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 31.92
Sun-Target sep (deg)  : 51.08
Sun-Moon sep (deg)    : 115.89
B (ring opening deg) : -2.22
PA of pole (deg)     : 0.94
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (") : 10.566
C/A sky separation (km) : 44445.2
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	2031-10-29T04:28:28.295	30.21	-9.74	71489.5	37.31	40.97
Jupiter	E	2031-10-29T05:27:28.460	19.44	-23.47	71489.3	39.48	43.18