

target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-10-24T17:40:36.240  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4116537797576266368  
 2Mass ID (if available) : 17400136-2313524

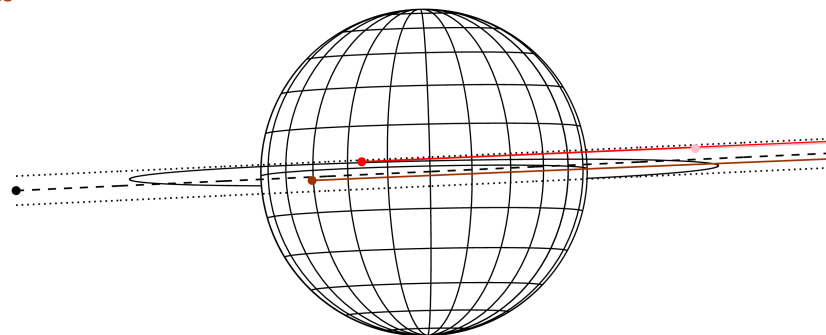
Jupiter 2031-10-24T17:40:36 K7.85 G14.16 Pgt

ICRS Star Coord at Epoch: 17h 40m 01.35448s -23:13:52.54646s  
 RUWE (>1.4 is poor) : 0.87  
 K magnitude : 7.851  
 G magnitude : 14.159  
 RP magnitude : 12.596  
 BP magnitude : 17.756  
 DUPflag : 0  
 Distance (au) : 5.745  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 30.39  
 Sun-Target sep (deg) : 54.74  
 Sun-Moon sep (deg) : 54.14  
 B (ring opening deg) : -2.24  
 PA of pole (deg) : 1.31  
 Pole direction: RA (deg): 268.05681  
 Dec (deg): 64.49652  
 C/A sky separation (") : 0.065  
 C/A sky separation (km) : 269.7  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk  
 URKALLvl.spk  
 naif0012.tls  
 nep097.bsp  
 nep101.bsp  
 sat4401.bsp



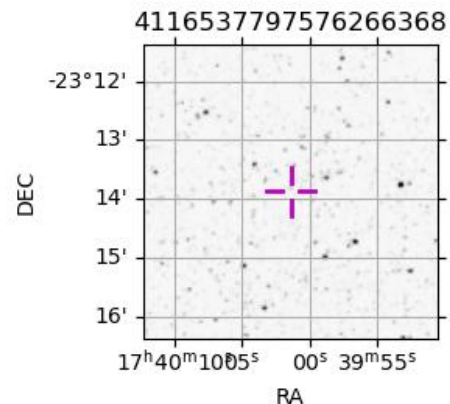
2031-10-24T17:40:36.2400 ex: 17 40 01.3545 s: -23 13 52.546 C/A 0.057" PA 182.75 deg v\_sky +30.39 km/s D 05.75 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PIC  
 TEN  
 SAAO



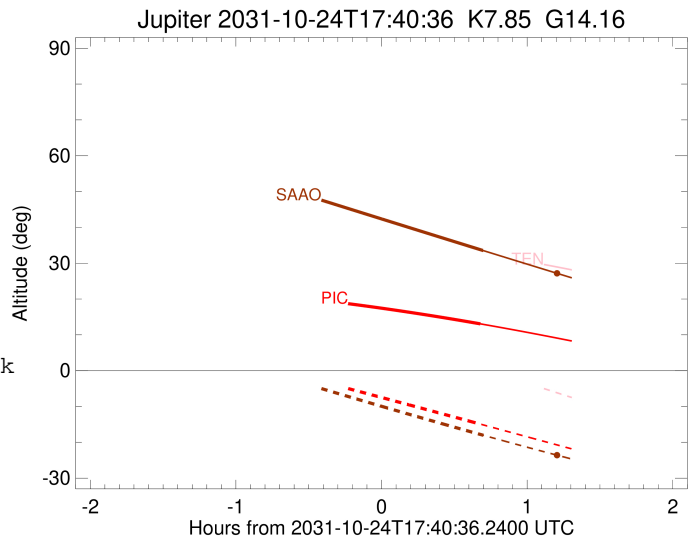
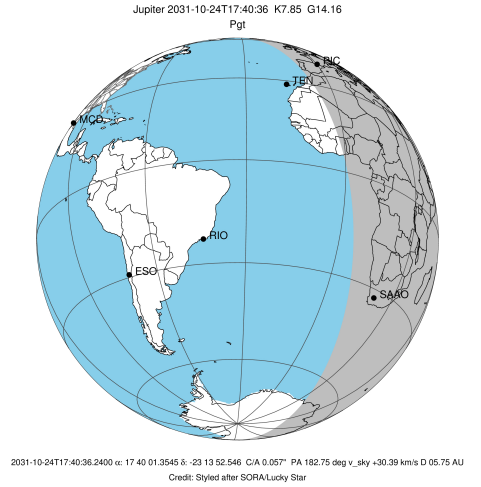
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+	OCT 24 18:21 - OCT 24 18:21	Pne
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			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	+	OCT 24 18:22 - OCT 24 18:22	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-24T17:41:52.820
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PIC
Location           : Pic du Midi
Latitude (deg)     : 42.93656
E. Longitude (deg) : 0.14231
Altitude (km)     : 2.890
Gaia source ID     : 4116537797576266368
2Mass ID (if available) : 17400136-2313524
ICRS Star Coord at Epoch: 17h 40m 01.35448s -23:13:52.54646s
RUWE (>1.4 is poor) : 0.87
K magnitude        : 7.851
G magnitude        : 14.159
RP magnitude       : 12.596
BP magnitude       : 17.756
DUPflag           : 0
Distance (au)     : 5.745
f0 (km)           : 0.00
g0 (km)           : 0.00
skyplane vel. (km/s) : 30.39
Sun-Target sep (deg) : 54.74
Sun-Moon sep (deg) : 54.12
B (ring opening deg) : -2.24
PA of pole (deg)   : 1.31
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (") : 1.414
C/A sky separation (km) : 5894.1
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
    
```

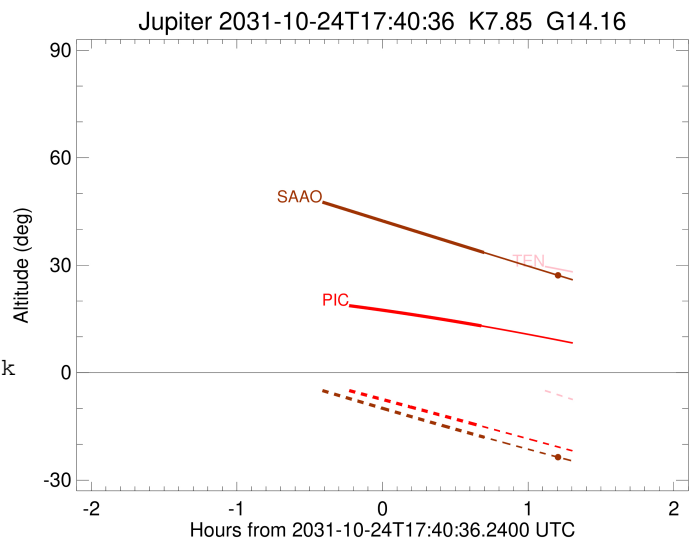
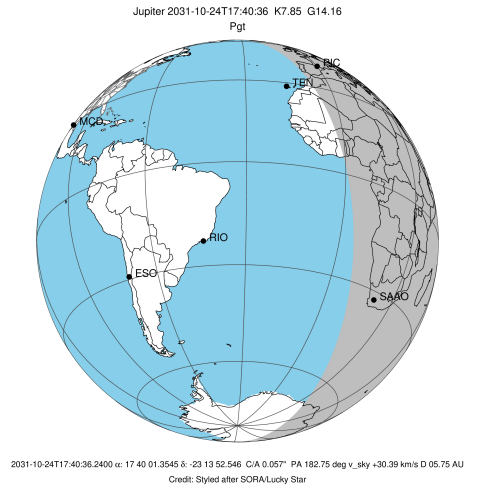


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-24T17:02:24.474	20.64	-0.63x	71492.0	3.51	4.01
Jupiter	E	2031-10-24T18:21:17.813	13.07	-14.91	71491.9	5.90	6.74

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-24T17:43:02.130
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      : 4116537797576266368
2Mass ID (if available) : 17400136-2313524
ICRS Star Coord at Epoch: 17h 40m 01.35448s -23:13:52.54646s
RUWE (>1.4 is poor) : 0.87
K magnitude          : 7.851
G magnitude          : 14.159
RP magnitude         : 12.596
BP magnitude         : 17.756
DUPflag             : 0
Distance (au)       : 5.745
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 30.39
Sun-Target sep (deg) : 54.74
Sun-Moon sep (deg)  : 54.30
B (ring opening deg) : -2.24
PA of pole (deg)    : 1.31
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation ("): 0.339
C/A sky separation (km): 1414.0
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	2031-10-24T17:03:29.507	50.22	-2.49x	71492.0	-2.24	-2.57
Jupiter	E	2031-10-24T18:22:29.600	33.53	-18.02	71492.0	-0.06	-0.06