

target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-05-22T14:39:23.440
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116890667653349248
 2Mass ID (if available) : 17444753-2252422

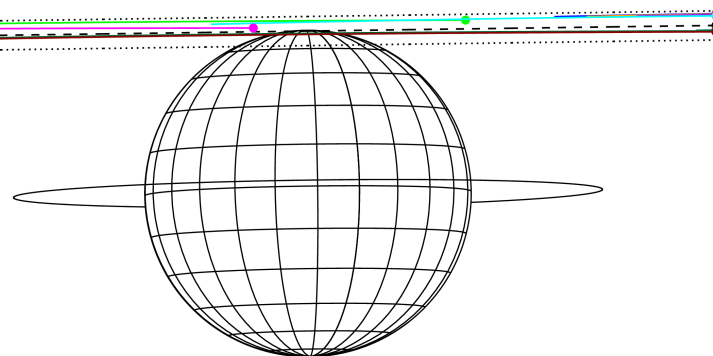
Jupiter 2031-05-22T14:39:23 K8.31 G12.93 Pgt

ICRS Star Coord at Epoch: 17h 44m 47.53623s -22:52:42.46785s
 RUWE (>1.4 is poor) : 0.92
 K magnitude : 8.308
 G magnitude : 12.931
 RP magnitude : 11.734
 BP magnitude : 14.545
 DUPflag : 0
 Distance (au) : 4.358
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -13.56
 Sun-Target sep (deg) : 154.39
 Sun-Moon sep (deg) : 168.85
 B (ring opening deg) : -2.61
 PA of pole (deg) : 0.80
 Pole direction: RA (deg): 268.05694
 Dec (deg): 64.49651
 C/A sky separation (") : 22.514
 C/A sky separation (km) : 71154.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



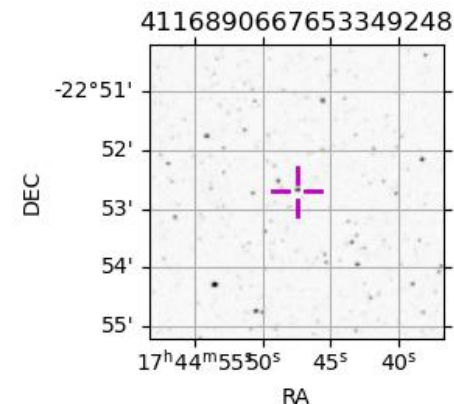
2031-05-22T14:39:23.4400 a: 17 44 47.5362 s: -22 52 42.468 C/A ***** PA 180.79 deg v_sky -13.56 km/s D 0.46 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 ESO
 AAT
 SAAO
 MSO



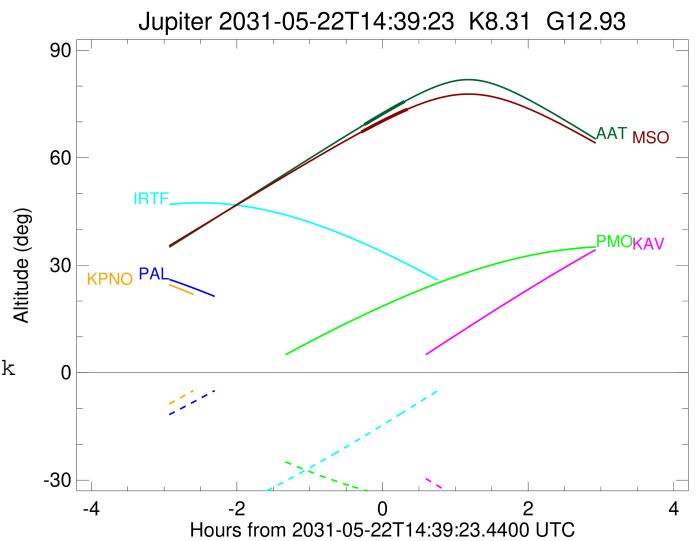
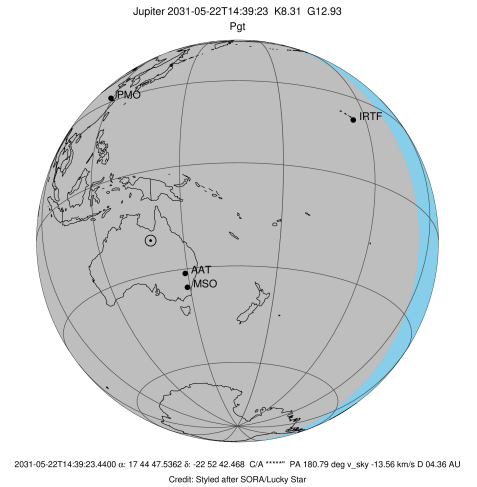
Observable events with sun below -5 deg and altitude above 5 deg

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			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	+ +	MAY 22 14:24 - MAY 22 14:57	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	MAY 22 14:21 - MAY 22 15:00	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-05-22T14:41:03.820
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : AAT
Location             : Siding Spring (AAT)
Latitude (deg)       : -31.27703
E. Longitude (deg)   : 149.06608
Altitude (km)        : 1.164
Gaia source ID       : 4116890667653349248
2Mass ID (if available) : 17444753-2252422
ICRS Star Coord at Epoch: 17h 44m 47.53623s -22:52:42.46785s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 8.308
G magnitude          : 12.931
RP magnitude         : 11.734
BP magnitude         : 14.545
DUPflag             : 0
Distance (au)        : 4.358
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -13.56
Sun-Target sep (deg) : 154.39
Sun-Moon sep (deg)   : 168.80
B (ring opening deg) : -2.61
PA of pole (deg)     : 0.80
Pole direction: RA (deg): 268.05694
Dec (deg): 64.49651
C/A sky separation ("): 22.191
C/A sky separation (km): 70130.7
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
    
```

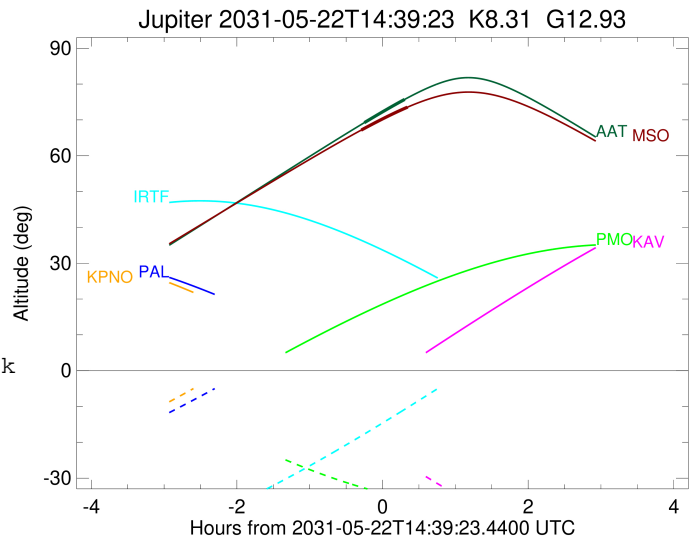
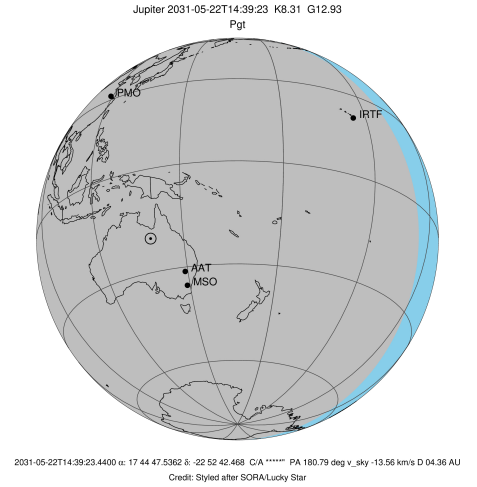


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-05-22T14:24:28.694	69.24	-78.03	71483.1	78.31	79.66
Jupiter	E	2031-05-22T14:57:38.180	75.71	-73.30	71483.1	78.73	80.04

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-05-22T14:40:59.420
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : MSO
Location            : Mt. Stromlo Observatory
Latitude (deg)      : -35.32000
E. Longitude (deg)  : 149.00833
Altitude (km)       : 0.770
Gaia source ID      : 4116890667653349248
2Mass ID (if available) : 17444753-2252422
ICRS Star Coord at Epoch: 17h 44m 47.53623s -22:52:42.46785s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 8.308
G magnitude          : 12.931
RP magnitude         : 11.734
BP magnitude         : 14.545
DUPflag             : 0
Distance (au)       : 4.358
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -13.56
Sun-Target sep (deg) : 154.39
Sun-Moon sep (deg)  : 168.82
B (ring opening deg) : -2.61
PA of pole (deg)    : 0.80
Pole direction: RA (deg): 268.05694
Dec (deg): 64.49651
C/A sky separation (") : 22.052
C/A sky separation (km) : 69694.0
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	2031-05-22T14:21:55.202	67.16	-74.56	71483.2	76.67	78.21
Jupiter	E	2031-05-22T15:00:02.657	73.56	-70.33	71483.2	77.07	78.57