

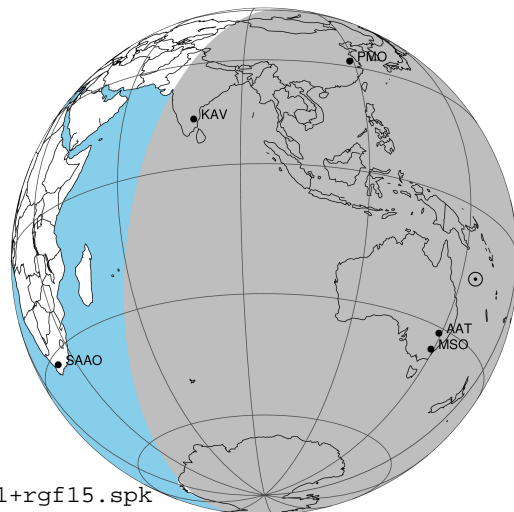
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-08-08T13:43:44.670
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4115213607500187648
 2Mass ID (if available) : 17112026-2238314

Jupiter 2031-08-08T13:43:44 K8.07 G12.59 Pgt

ICRS Star Coord at Epoch: 17h 11m 20.26526s -22:38:31.37664s

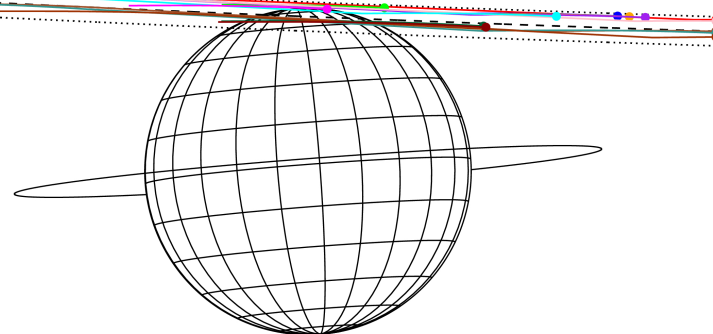
RUWE (>1.4 is poor) : 1.06
 K magnitude : 8.075
 G magnitude : 12.590
 RP magnitude : 11.383
 BP magnitude : 14.163
 DUPflag : 0
 Distance (au) : 4.635
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -3.34
 Sun-Target sep (deg) : 123.39
 Sun-Moon sep (deg) : 129.60
 B (ring opening deg) : -2.50
 PA of pole (deg) : 4.39
 Pole direction: RA (deg): 268.05687
 Dec (deg): 64.49652
 C/A sky separation (") : 20.164
 C/A sky separation (km) : 67786.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-08-08T13:43:44 K8.07 G12.59
 Pgt



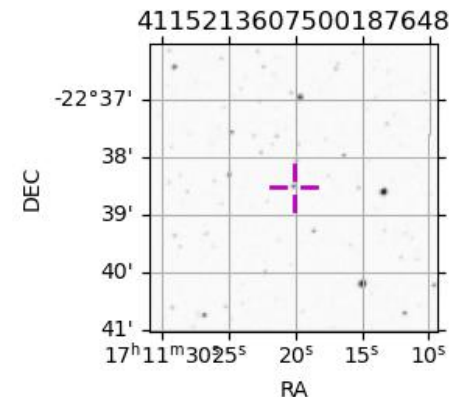
2031-08-08T13:43:44.6700 α: 17 11 20.2653 δ: -22 38 31.377 C/A ***** PA 177.69 deg v_sky - 3.34 km/s D 04.64 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 PAL
 PMO
 KPNO
 MCD
 TEN
 IRTF
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



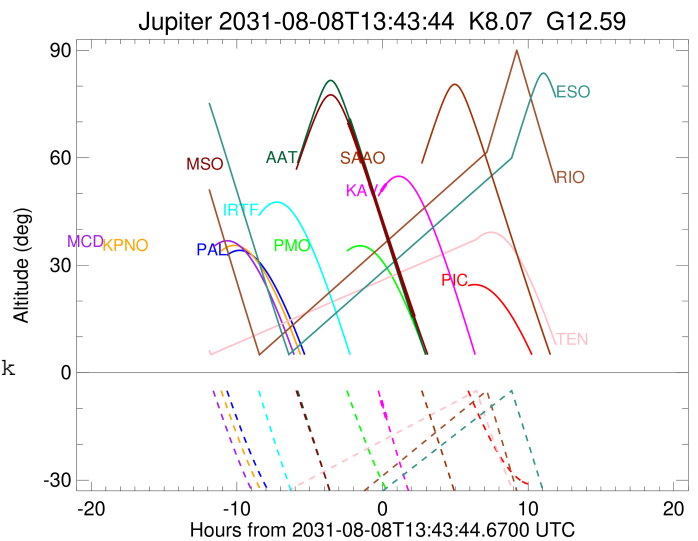
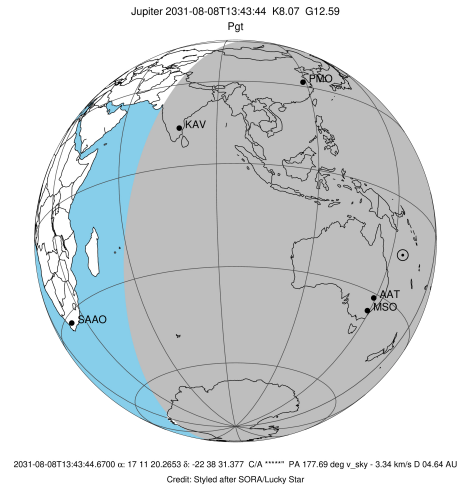
Observable events with sun below -5 deg and altitude above 5 deg

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	+ +	AUG 08 13:37 - AUG 08 13:59	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	+ +	AUG 08 11:27 - AUG 08 15:49	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	AUG 08 11:22 - AUG 08 15:55	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-08-08T13:48:37.430
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      : 4115213607500187648
2Mass ID (if available) : 17112026-2238314
ICRS Star Coord at Epoch: 17h 11m 20.26526s -22:38:31.37664s
RUWE (>1.4 is poor) : 1.06
K magnitude          : 8.075
G magnitude          : 12.590
RP magnitude         : 11.383
BP magnitude         : 14.163
DUPflag             : 0
Distance (au)       : 4.635
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -3.34
Sun-Target sep (deg) : 123.39
Sun-Moon sep (deg)  : 129.99
B (ring opening deg) : -2.50
PA of pole (deg)    : 4.39
Pole direction: RA (deg): 268.05687
Dec (deg): 64.49652
C/A sky separation (") : 21.252
C/A sky separation (km) : 71444.4
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
    
```

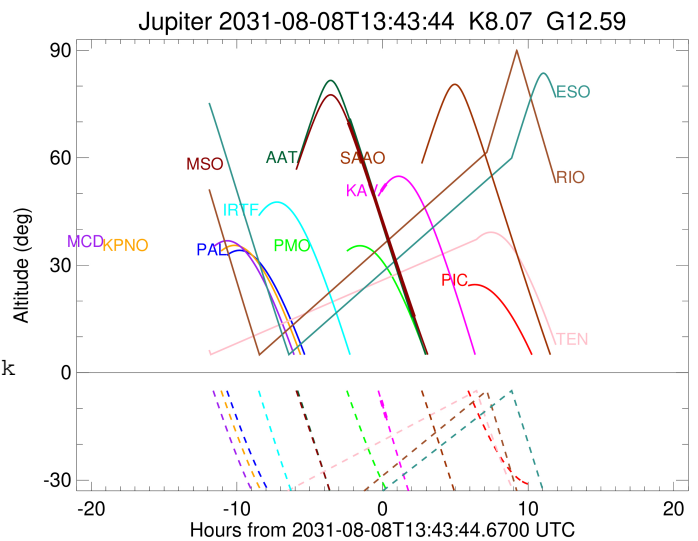
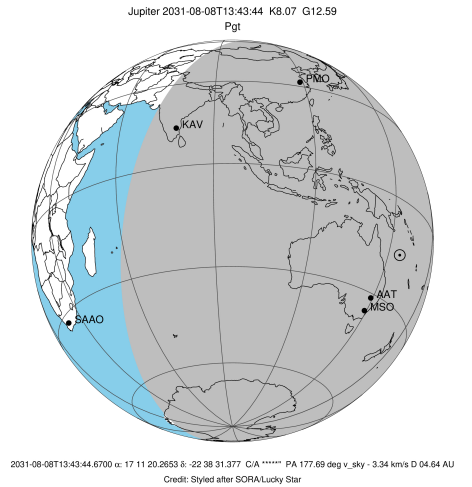


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-08-08T13:37:49.307	50.58	-7.64	71483.7	80.59	81.69
Jupiter	E	2031-08-08T13:59:24.186	52.67	-12.62	71483.6	84.27	84.94

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-08-08T13:34:52.760
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      : 4115213607500187648
2Mass ID (if available) : 17112026-2238314
ICRS Star Coord at Epoch: 17h 11m 20.26526s -22:38:31.37664s
RUWE (>1.4 is poor) : 1.06
K magnitude         : 8.075
G magnitude         : 12.590
RP magnitude        : 11.383
BP magnitude        : 14.163
DUPflag            : 0
Distance (au)       : 4.635
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -3.34
Sun-Target sep (deg) : 123.39
Sun-Moon sep (deg)  : 130.51
B (ring opening deg) : -2.50
PA of pole (deg)    : 4.39
Pole direction: RA (deg): 268.05687
Dec (deg): 64.49652
C/A sky separation (" ) : 19.610
C/A sky separation (km) : 65922.0
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
    
```

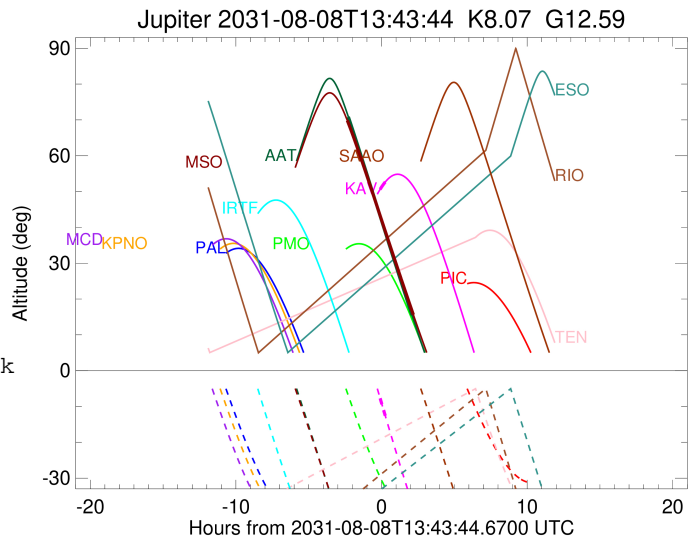
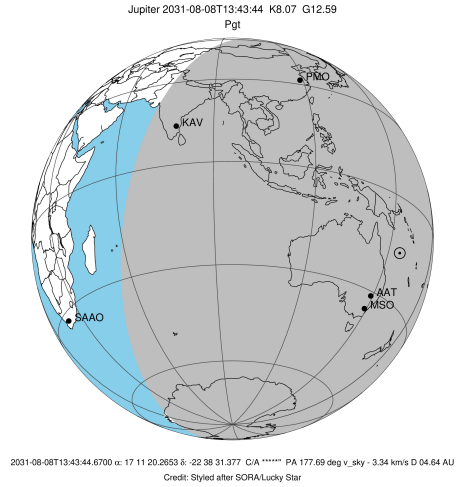


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-08-08T11:27:01.835	70.88	-50.17	71485.4	62.06	64.98
Jupiter	E	2031-08-08T15:49:37.876	15.44	-62.66	71484.4	71.39	73.48

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-08-08T13:35:20.570
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        : 4115213607500187648
2Mass ID (if available) : 17112026-2238314
ICRS Star Coord at Epoch: 17h 11m 20.26526s -22:38:31.37664s
RUWE (>1.4 is poor) : 1.06
K magnitude           : 8.075
G magnitude           : 12.590
RP magnitude          : 11.383
BP magnitude          : 14.163
DUPflag              : 0
Distance (au)         : 4.635
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -3.34
Sun-Target sep (deg)  : 123.39
Sun-Moon sep (deg)    : 130.49
B (ring opening deg) : -2.50
PA of pole (deg)      : 4.39
Pole direction: RA (deg): 268.05687
Dec (deg): 64.49652
C/A sky separation (" ) : 19.490
C/A sky separation (km) : 65520.3
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	2031-08-08T11:22:50.118	69.85	-48.27	71485.5	61.17	64.15
Jupiter	E	2031-08-08T15:55:00.414	15.61	-59.71	71484.4	70.68	72.83