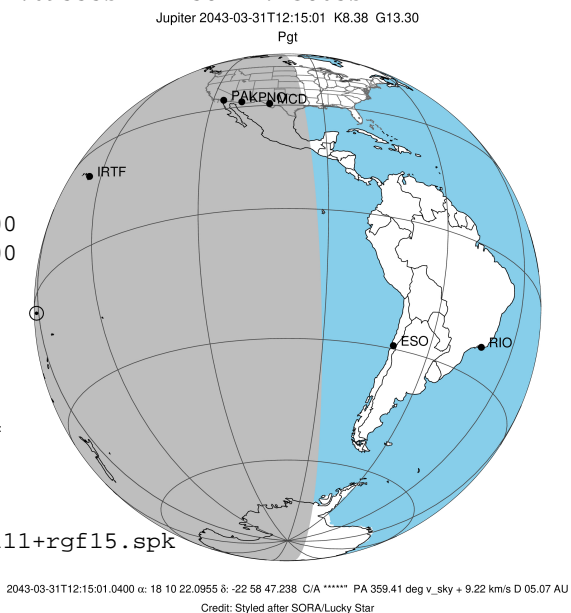


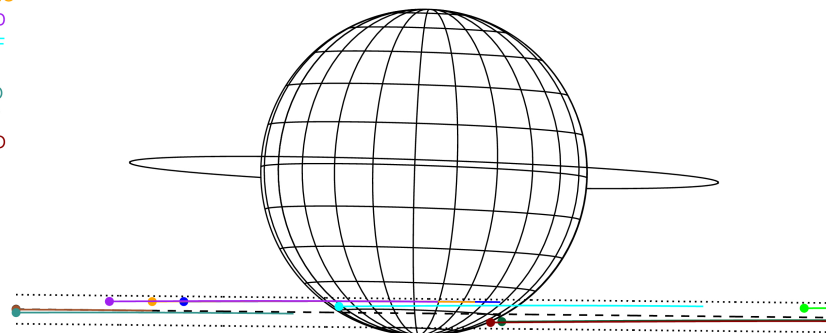
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-03-31T12:15:01.040  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4066632678341279232  
 2Mass ID (if available) : 18102209-2258473

Jupiter 2043-03-31T12:15:01 K8.38 G13.30 Pgt

ICRS Star Coord at Epoch: 18h 10m 22.09555s -22:58:47.23805s  
 RUWE (>1.4 is poor) : 2.21  
 K magnitude : 8.382  
 G magnitude : 13.298  
 RP magnitude : 12.061  
 BP magnitude : 14.930  
 DUPflag : 0  
 Distance (au) : 5.067  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 9.22  
 Sun-Target sep (deg) : 97.70  
 Sun-Moon sep (deg) : 18.57  
 B (ring opening deg) : -2.45  
 PA of pole (deg) : -1.95  
 Pole direction: RA (deg): 268.05664  
 Dec (deg): 64.49732  
 C/A sky separation (") : 16.797  
 C/A sky separation (km) : 61722.6  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk  
 URKALLv1.spk  
 naif0012.tls  
 nep097.bsp  
 nep101.bsp  
 sat4401.bsp



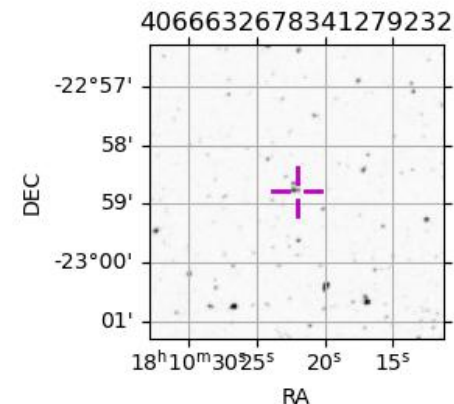
Earth  
 PAL  
 PMO  
 KPNO  
 MCD  
 IRTF  
 RIO  
 ESO  
 AAT  
 MSO



2043-03-31T12:15:01.0400 α: 18 10 22.0955 δ: -22 58 47.238 C/A \*\*\*\*\* PA 359.41 deg v\_sky + 9.22 km/s D 05.07 AU  
 Credit: Styled after SORA/Lucky Star

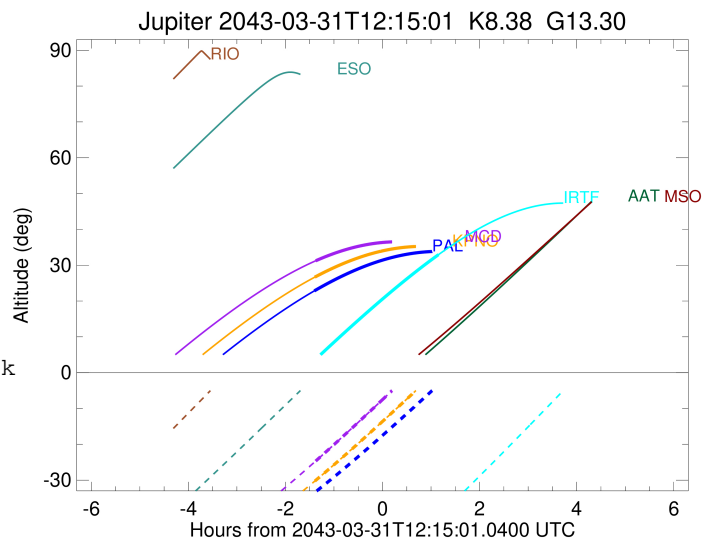
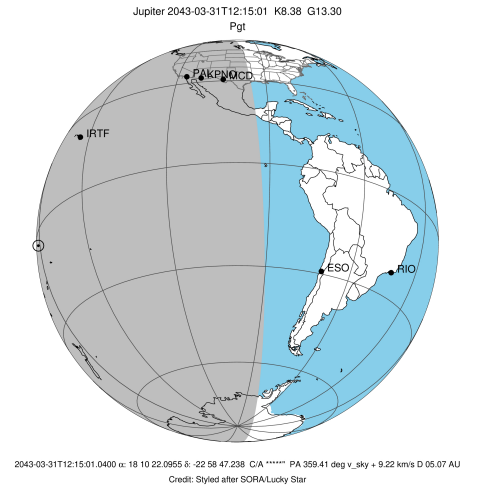
Observable events with sun below -5 deg and altitude above 5 deg

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	+	MAR 31 10:50 - MAR 31 10:50	Pin
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	MAR 31 10:51 - MAR 31 10:51	Pin
MCD	McDonald Obs. 2.7m	30.7	256.0	+	MAR 31 10:52 - MAR 31 10:52	Pin
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+	MAR 31 13:24 - MAR 31 13:24	Pne
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            : 2043-03-31T12:12:37.980
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg) : 243.13601
Altitude (km)      : 1.706
Gaia source ID     : 4066632678341279232
2Mass ID (if available) : 18102209-2258473
ICRS Star Coord at Epoch: 18h 10m 22.09555s -22:58:47.23805s
RUWE (>1.4 is poor) : 2.21
K magnitude         : 8.382
G magnitude         : 13.298
RP magnitude        : 12.061
BP magnitude        : 14.930
DUPflag            : 0
Distance (au)      : 5.067
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 9.22
Sun-Target sep (deg) : 97.70
Sun-Moon sep (deg)  : 18.75
B (ring opening deg) : -2.45
PA of pole (deg)    : -1.95
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation (") : 15.378
C/A sky separation (km) : 56509.7
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
    
```

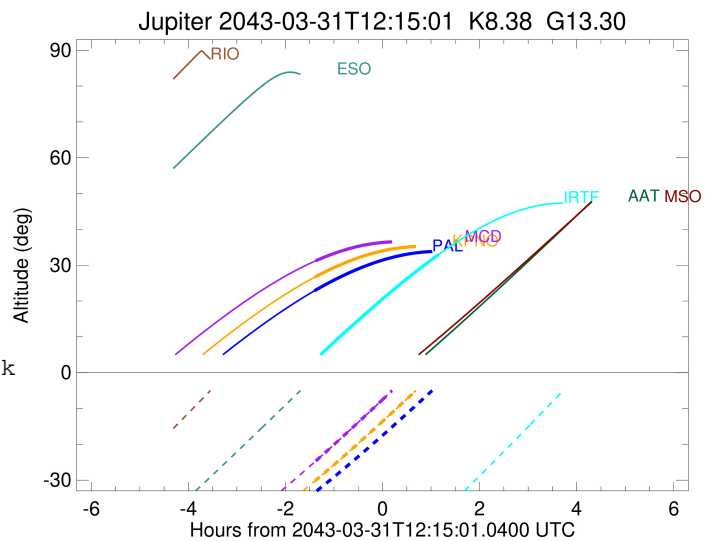
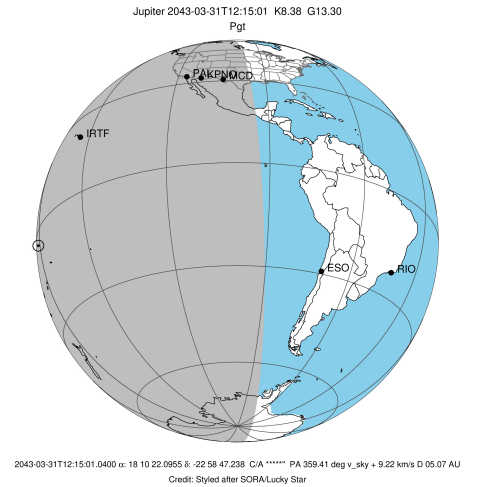


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-03-31T10:50:50.494	22.84	-33.51	71486.6	-53.95	-57.38
Jupiter	E	2043-03-31T13:35:03.495	33.80	-1.12x	71487.1	-50.71	-54.27

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-03-31T12:13:19.470
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : KPNO
Location              : Kitt Peak Natl Obs
Latitude (deg)        : 31.96333
E. Longitude (deg)    : 248.40000
Altitude (km)         : 2.120
Gaia source ID        : 4066632678341279232
2Mass ID (if available) : 18102209-2258473
ICRS Star Coord at Epoch: 18h 10m 22.09555s -22:58:47.23805s
RUWE (>1.4 is poor) : 2.21
K magnitude           : 8.382
G magnitude           : 13.298
RP magnitude          : 12.061
BP magnitude          : 14.930
DUPflag              : 0
Distance (au)         : 5.067
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 9.22
Sun-Target sep (deg) : 97.70
Sun-Moon sep (deg)   : 18.82
B (ring opening deg) : -2.45
PA of pole (deg)     : -1.95
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation (") : 15.389
C/A sky separation (km) : 56551.4
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
    
```

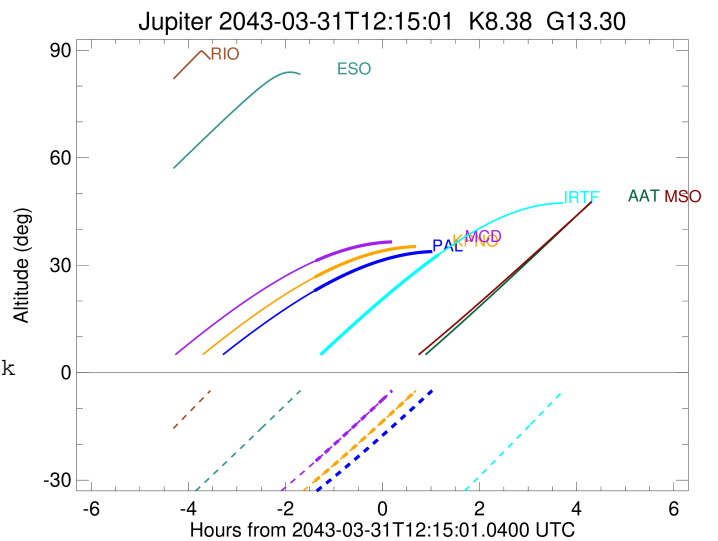
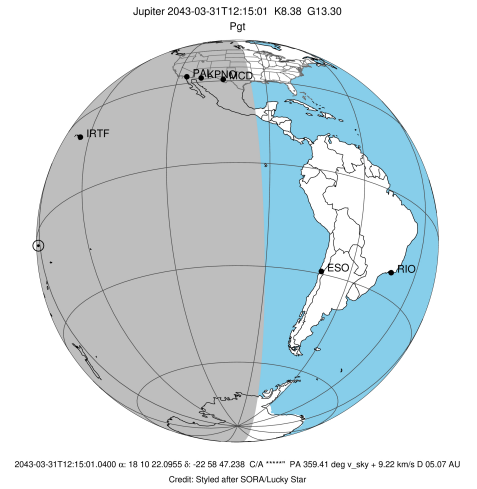


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-03-31T10:51:27.162	26.68	-30.24	71486.6	-53.93	-57.35
Jupiter	E	2043-03-31T13:35:43.535	34.72	3.34x	71487.0	-50.85	-54.41

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-03-31T12:14:23.720
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : MCD
Location              : McDonald Obs. 2.7m
Latitude (deg)        : 30.67158
E. Longitude (deg)    : 255.97844
Altitude (km)         : 2.075
Gaia source ID        : 4066632678341279232
2Mass ID (if available) : 18102209-2258473
ICRS Star Coord at Epoch: 18h 10m 22.09555s -22:58:47.23805s
RUWE (>1.4 is poor) : 2.21
K magnitude           : 8.382
G magnitude           : 13.298
RP magnitude          : 12.061
BP magnitude          : 14.930
DUPflag              : 0
Distance (au)         : 5.067
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 9.22
Sun-Target sep (deg) : 97.70
Sun-Moon sep (deg)   : 18.92
B (ring opening deg) : -2.45
PA of pole (deg)     : -1.95
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation (") : 15.403
C/A sky separation (km) : 56601.4
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
    
```

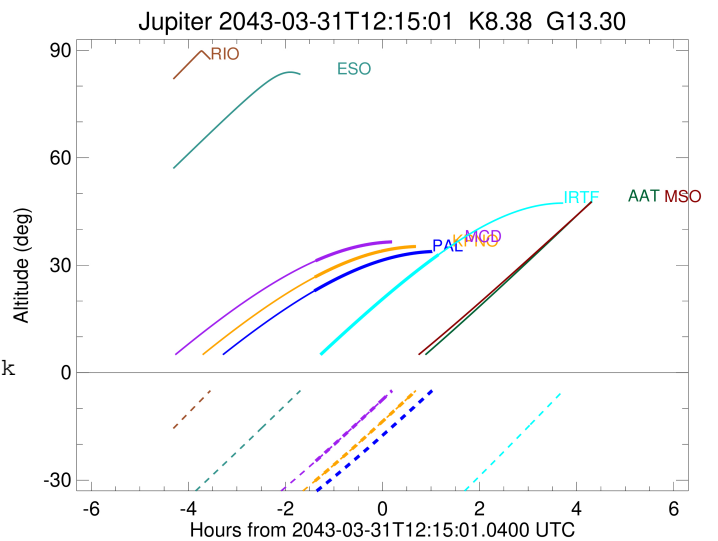
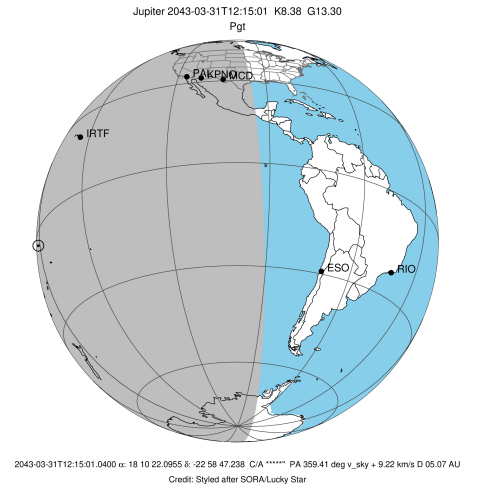


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-03-31T10:52:27.055	31.23	-24.67	71486.6	-53.87	-57.30
Jupiter	E	2043-03-31T13:36:42.354	34.43	10.02x	71487.0	-51.06	-54.60

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-03-31T12:07:33.250
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      : 4066632678341279232
2Mass ID (if available) : 18102209-2258473
ICRS Star Coord at Epoch: 18h 10m 22.09555s -22:58:47.23805s
RUWE (>1.4 is poor) : 2.21
K magnitude          : 8.382
G magnitude          : 13.298
RP magnitude         : 12.061
BP magnitude         : 14.930
DUPflag             : 0
Distance (au)       : 5.067
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 9.22
Sun-Target sep (deg) : 97.70
Sun-Moon sep (deg)  : 18.18
B (ring opening deg) : -2.45
PA of pole (deg)    : -1.95
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation (" ) : 15.901
C/A sky separation (km) : 58433.5
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	2043-03-31T10:51:58.365	3.65x	-65.25	71486.2	-57.09	-60.34
Jupiter	E	2043-03-31T13:24:19.922	32.96	-40.07	71486.8	-52.60	-56.09