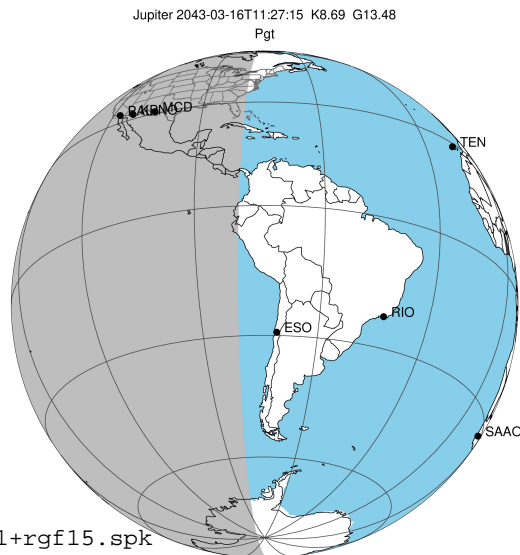


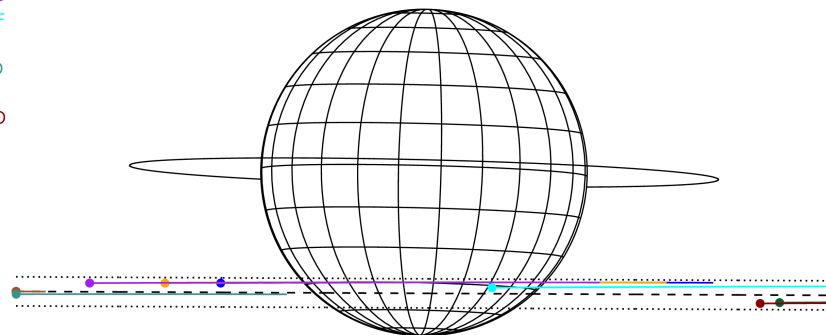
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-03-16T11:27:15.380
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4069586417559128704
 2Mass ID (if available) : 18050373-2259203

Jupiter 2043-03-16T11:27:15 K8.69 G13.48 Pgt

ICRS Star Coord at Epoch: 18h 05m 03.73634s -22:59:20.57693s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 8.686
 G magnitude : 13.476
 RP magnitude : 12.282
 BP magnitude : 15.016
 DUPflag : 0
 Distance (au) : 5.309
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 16.28
 Sun-Target sep (deg) : 84.01
 Sun-Moon sep (deg) : 153.08
 B (ring opening deg) : -2.48
 PA of pole (deg) : -1.38
 Pole direction: RA (deg): 268.05663
 Dec (deg): 64.49732
 C/A sky separation (") : 13.750
 C/A sky separation (km) : 52946.7
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



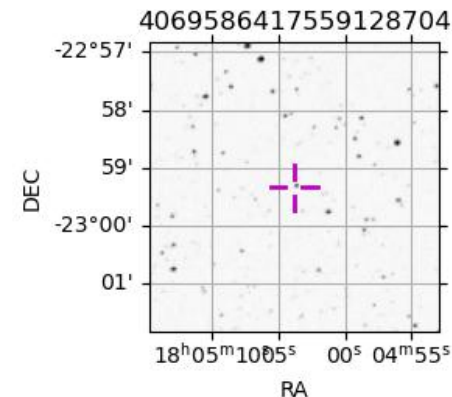
Earth
 PAL
 KPNO
 MCD
 IRTF
 RIO
 ESO
 AAT
 MSO



2043-03-16T11:27:15.3800 a: 18 05 03.7363 s: -22 59 20.577 C/A ***** PA 359.72 deg v_sky +16.28 km/s D 05.31 AU
 Credit: Styled after SORA/Lucky Star

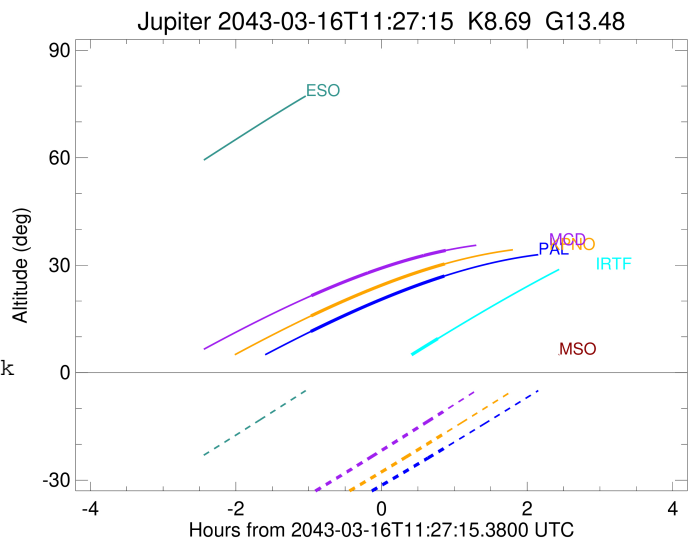
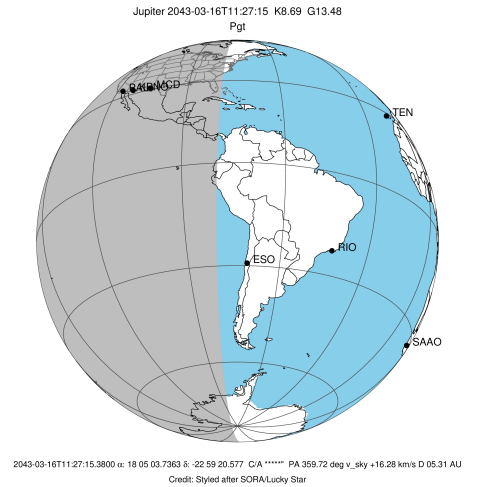
Observable events with sun below -5 deg and altitude above 5 deg

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 16 10:29 - MAR 16 12:18	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	MAR 16 10:29 - MAR 16 12:19	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	MAR 16 10:29 - MAR 16 12:20	Pie
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5		MAR 16 12:13 - MAR 16 12:13	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            : 2043-03-16T11:23:50.080
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      : 4069586417559128704
2Mass ID (if available) : 18050373-2259203
ICRS Star Coord at Epoch: 18h 05m 03.73634s -22:59:20.57693s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 8.686
G magnitude          : 13.476
RP magnitude         : 12.282
BP magnitude         : 15.016
DUPflag             : 0
Distance (au)       : 5.309
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 16.28
Sun-Target sep (deg) : 84.01
Sun-Moon sep (deg)  : 152.86
B (ring opening deg) : -2.48
PA of pole (deg)    : -1.38
Pole direction: RA (deg): 268.05663
Dec (deg): 64.49732
C/A sky separation (" ) : 12.517
C/A sky separation (km) : 48199.8
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
    
```

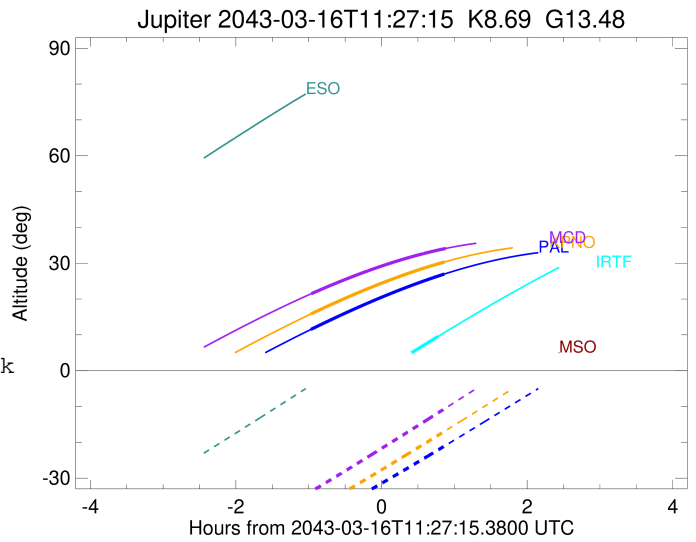
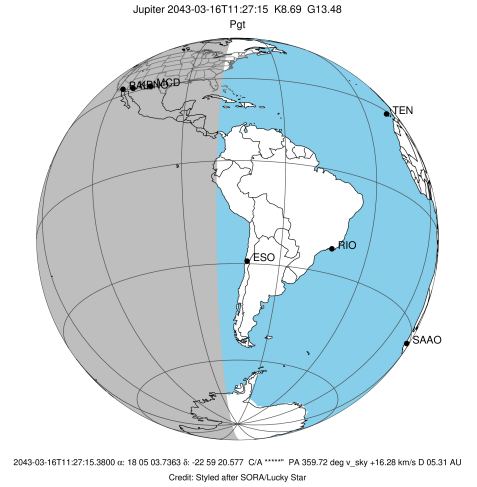


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-03-16T10:29:01.484	11.50	-42.32	71488.0	-43.86	-47.57
Jupiter	E	2043-03-16T12:18:55.613	26.96	-21.09	71488.4	-40.93	-44.64

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-03-16T11:24:08.140
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        : 4069586417559128704
2Mass ID (if available) : 18050373-2259203
ICRS Star Coord at Epoch: 18h 05m 03.73634s -22:59:20.57693s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 8.686
G magnitude           : 13.476
RP magnitude          : 12.282
BP magnitude          : 15.016
DUPflag              : 0
Distance (au)         : 5.309
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 16.28
Sun-Target sep (deg)  : 84.01
Sun-Moon sep (deg)   : 152.94
B (ring opening deg) : -2.48
PA of pole (deg)     : -1.38
Pole direction: RA (deg): 268.05663
Dec (deg): 64.49732
C/A sky separation (") : 12.509
C/A sky separation (km) : 48168.9
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
    
```

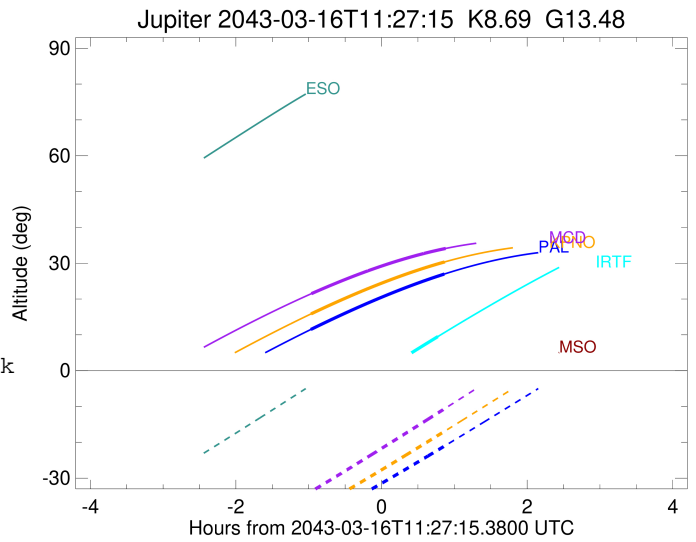
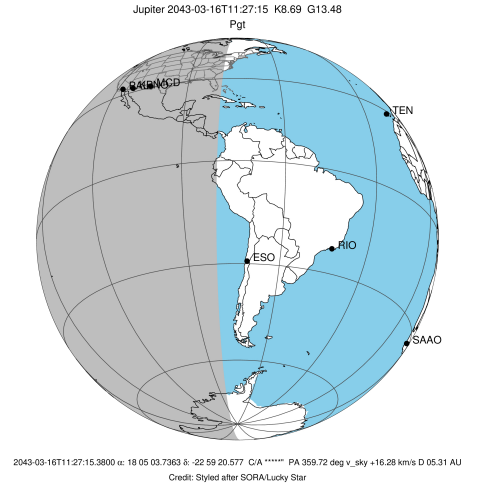


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-03-16T10:29:11.664	15.85	-39.15	71488.0	-43.80	-47.51
Jupiter	E	2043-03-16T12:19:20.526	30.36	-16.90	71488.4	-40.93	-44.65

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-03-16T11:24:39.640
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        : 4069586417559128704
2Mass ID (if available) : 18050373-2259203
ICRS Star Coord at Epoch: 18h 05m 03.73634s -22:59:20.57693s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 8.686
G magnitude           : 13.476
RP magnitude          : 12.282
BP magnitude          : 15.016
DUPflag              : 0
Distance (au)         : 5.309
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 16.28
Sun-Target sep (deg) : 84.01
Sun-Moon sep (deg)   : 153.05
B (ring opening deg) : -2.48
PA of pole (deg)     : -1.38
Pole direction: RA (deg): 268.05663
Dec (deg): 64.49732
C/A sky separation (") : 12.491
C/A sky separation (km) : 48099.9
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
    
```

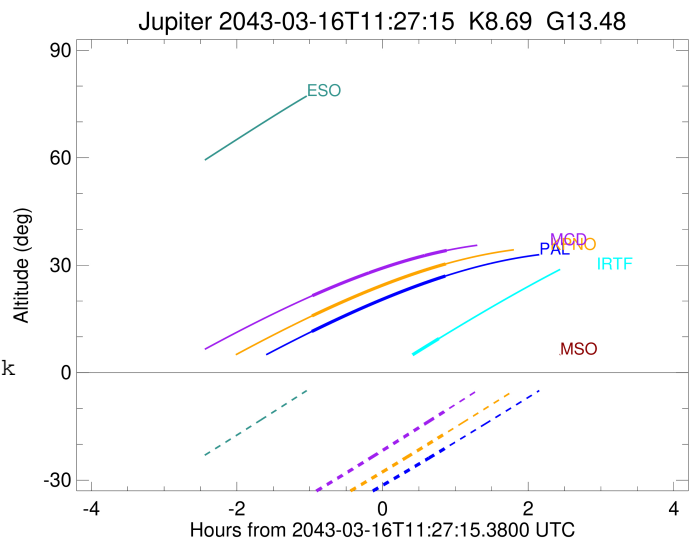
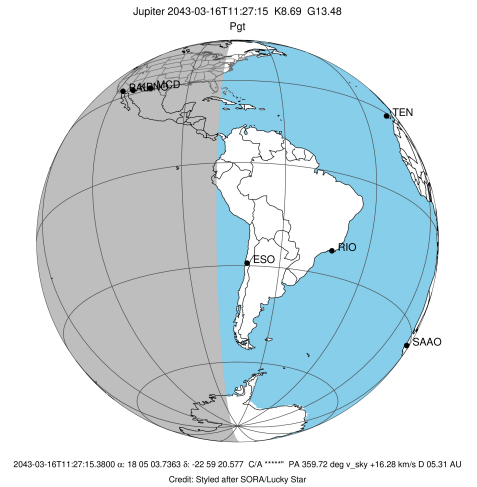


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-03-16T10:29:31.442	21.49	-33.68	71488.0	-43.67	-47.38
Jupiter	E	2043-03-16T12:20:01.890	34.10	-10.45	71488.4	-40.92	-44.64

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-03-16T11:21:42.940
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       : 4069586417559128704
2Mass ID (if available) : 18050373-2259203
ICRS Star Coord at Epoch: 18h 05m 03.73634s -22:59:20.57693s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 8.686
G magnitude           : 13.476
RP magnitude          : 12.282
BP magnitude          : 15.016
DUPflag              : 0
Distance (au)         : 5.309
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 16.28
Sun-Target sep (deg) : 84.01
Sun-Moon sep (deg)   : 152.34
B (ring opening deg) : -2.48
PA of pole (deg)     : -1.38
Pole direction: RA (deg): 268.05663
Dec (deg): 64.49732
C/A sky separation ("): 13.147
C/A sky separation (km): 50626.8
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	2043-03-16T10:30:03.746	-12.78x	-71.99	71487.5	-46.73	-50.41
Jupiter	E	2043-03-16T12:13:43.976	9.52	-58.97	71488.0	-43.35	-47.07