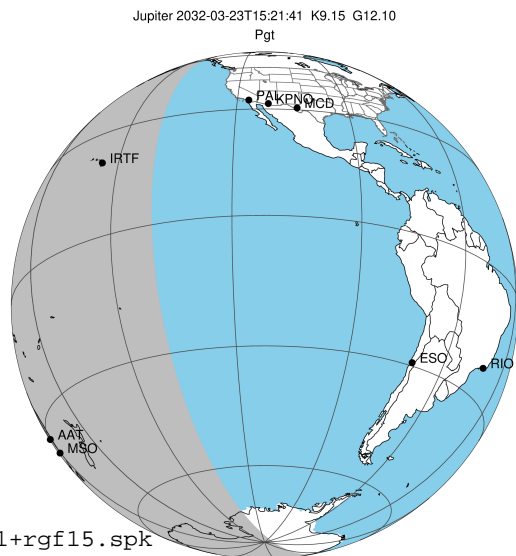


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2032-03-23T15:21:41.310
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 6865356518008773120
 2Mass ID (if available) : 19561140-2053562

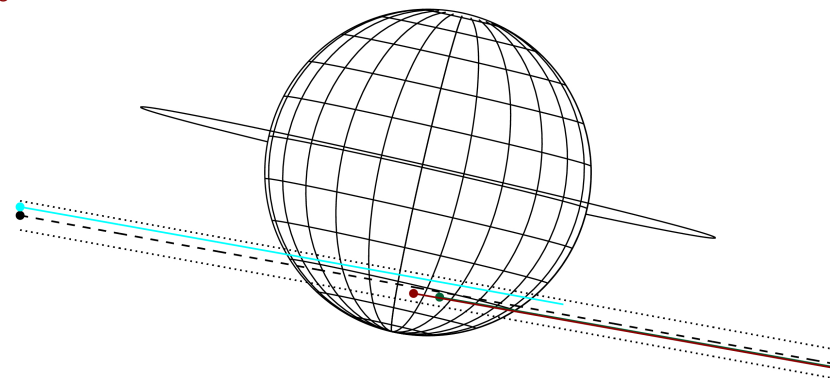
Jupiter 2032-03-23T15:21:41 K9.15 G12.10 Pgt

ICRS Star Coord at Epoch: 19h 56m 11.39296s -20°53:56.29128s

RUWE (>1.4 is poor) : 1.16
 K magnitude : 9.155
 G magnitude : 12.095
 RP magnitude : 11.246
 BP magnitude : 12.856
 DUPflag : 0
 Distance (au) : 5.502
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 25.54
 Sun-Target sep (deg) : 66.13
 Sun-Moon sep (deg) : 151.30
 B (ring opening deg) : -1.31
 PA of pole (deg) : -12.81
 Pole direction: RA (deg): 268.05670
 Dec (deg): 64.49654
 C/A sky separation (") : 12.665
 C/A sky separation (km) : 50540.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



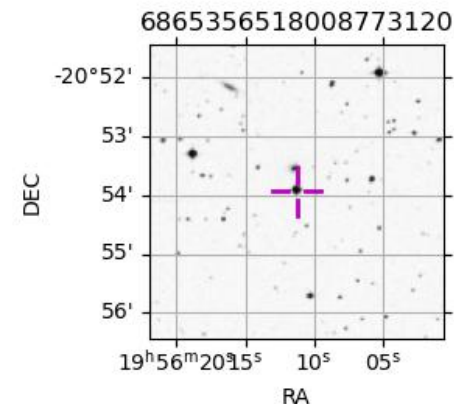
Earth
 IRTF
 AAT
 MSO



2032-03-23T15:21:41.3100 a: 19 56 11.3930 & -20 53 56.291 C/A ***** PA 349.67 deg v_sky +25.54 km/s D 05.50 AU
 Credit: Styled after SORA/Lucky Star

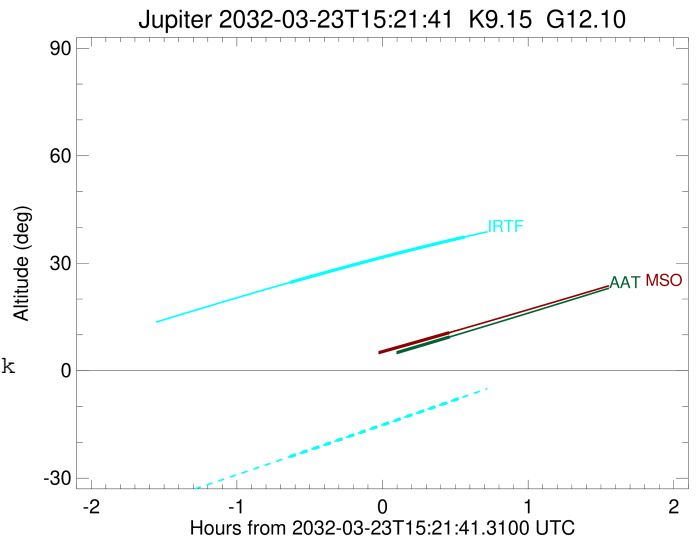
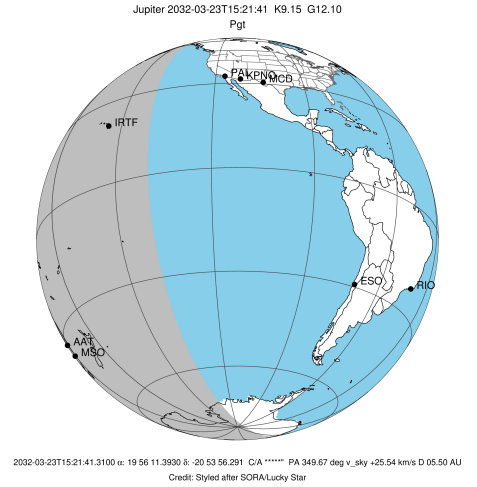
Observable events with sun below -5 deg and altitude above 5 deg

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			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	+ +	MAR 23 14:43 - MAR 23 15:55	Pie
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	+	MAR 23 15:49 - MAR 23 15:49	Pne
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	MAR 23 15:49 - MAR 23 15:49	Pne



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2032-03-23T15:19:31.110
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      : 6865356518008773120
2Mass ID (if available) : 19561140-2053562
ICRS Star Coord at Epoch: 19h 56m 11.39296s -20:53:56.29128s
RUWE (>1.4 is poor) : 1.16
K magnitude          : 9.155
G magnitude          : 12.095
RP magnitude         : 11.246
BP magnitude         : 12.856
DUPflag             : 0
Distance (au)       : 5.502
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 25.54
Sun-Target sep (deg) : 66.13
Sun-Moon sep (deg)  : 151.82
B (ring opening deg) : -1.31
PA of pole (deg)    : -12.81
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49654
C/A sky separation (") : 11.599
C/A sky separation (km) : 46287.3
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
    
```

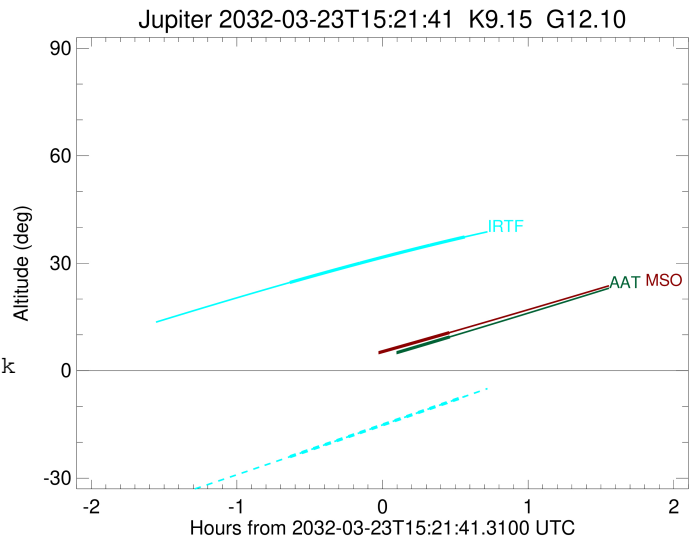
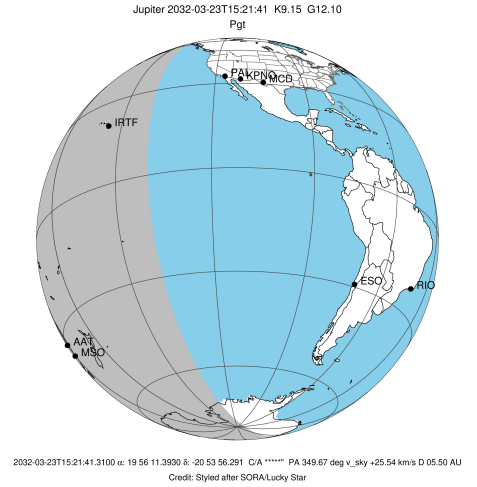


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2032-03-23T14:43:33.178	24.62	-24.01	71490.9	-42.95	-46.67
Jupiter	E	2032-03-23T15:55:33.721	37.32	-7.21	71491.1	-37.78	-41.45

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2032-03-23T15:18:01.830
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       : 6865356518008773120
2Mass ID (if available) : 19561140-2053562
ICRS Star Coord at Epoch: 19h 56m 11.39296s -20:53:56.29128s
RUWE (>1.4 is poor) : 1.16
K magnitude           : 9.155
G magnitude           : 12.095
RP magnitude         : 11.246
BP magnitude         : 12.856
DUPflag              : 0
Distance (au)        : 5.502
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 25.54
Sun-Target sep (deg) : 66.13
Sun-Moon sep (deg)  : 152.11
B (ring opening deg) : -1.31
PA of pole (deg)    : -12.81
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49654
C/A sky separation (") : 13.254
C/A sky separation (km) : 52893.3
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
    
```

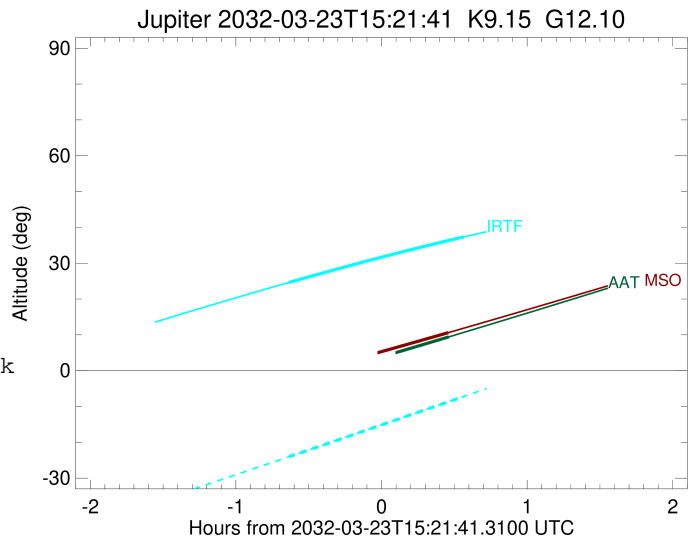
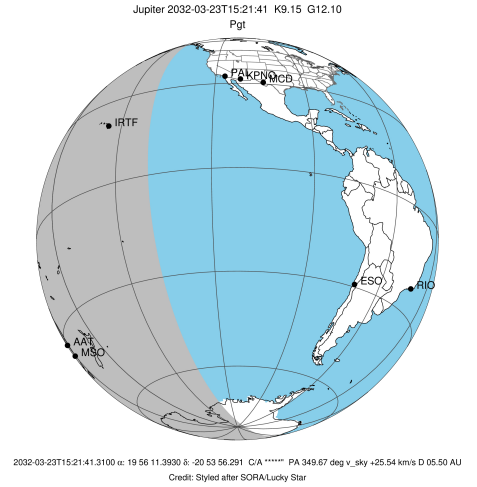


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2032-03-23T14:46:44.089	-2.98x	-59.06	71490.6	-50.52	-54.09
Jupiter	E	2032-03-23T15:49:24.174	9.43	-52.16	71490.8	-44.90	-48.60

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2032-03-23T15:18:08.350
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      : 6865356518008773120
2Mass ID (if available) : 19561140-2053562
ICRS Star Coord at Epoch: 19h 56m 11.39296s -20:53:56.29128s
RUWE (>1.4 is poor) : 1.16
K magnitude          : 9.155
G magnitude          : 12.095
RP magnitude         : 11.246
BP magnitude         : 12.856
DUPflag             : 0
Distance (au)       : 5.502
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 25.54
Sun-Target sep (deg) : 66.13
Sun-Moon sep (deg)  : 152.11
B (ring opening deg) : -1.31
PA of pole (deg)    : -12.81
Pole direction: RA (deg): 268.05670
Dec (deg): 64.49654
C/A sky separation (") : 13.348
C/A sky separation (km) : 53269.0
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	2032-03-23T14:47:06.638	-1.15x	-55.20	71490.6	-50.96	-54.51
Jupiter	E	2032-03-23T15:49:14.412	10.62	-49.19	71490.8	-45.36	-49.06