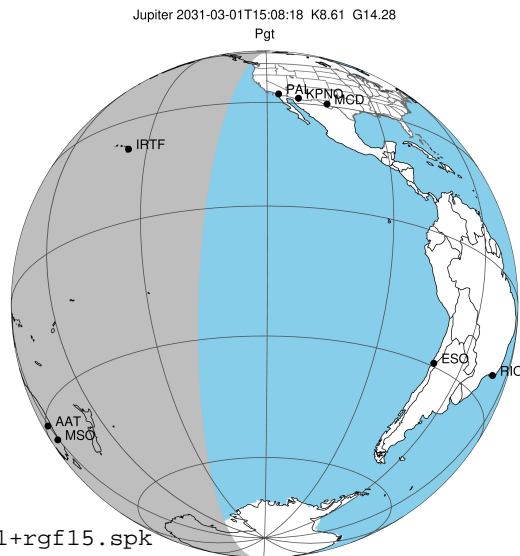


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-03-01T15:08:18.290
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116565869487611392
 2Mass ID (if available) : 17404543-2249200

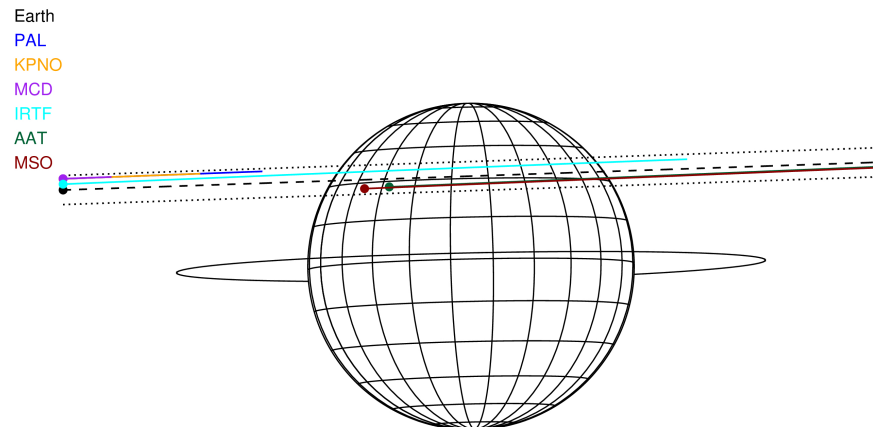
Jupiter 2031-03-01T15:08:18 K8.61 G14.28 Pgt

ICRS Star Coord at Epoch: 17h 40m 45.43098s -22:49:19.92170s

RUWE (>1.4 is poor) : 0.95
 K magnitude : 8.607
 G magnitude : 14.277
 RP magnitude : 12.884
 BP magnitude : 16.645
 DUPflag : 0
 Distance (au) : 5.488
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 20.92
 Sun-Target sep (deg) : 74.83
 Sun-Moon sep (deg) : 169.82
 B (ring opening deg) : -2.65
 PA of pole (deg) : 1.24
 Pole direction: RA (deg): 268.05701
 Dec (deg): 64.49651
 C/A sky separation (") : 9.942
 C/A sky separation (km) : 39569.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

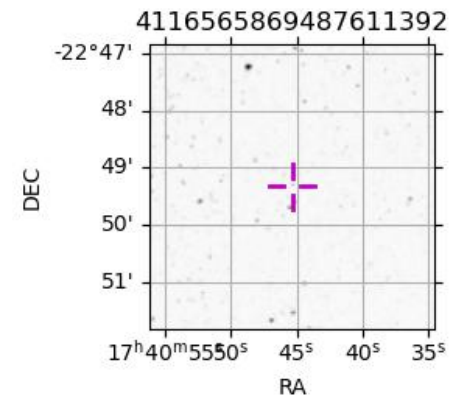


2031-03-01T15:08:18.2900 cc: 17 40 45.4310 s: -22 49 19.922 C/A 9.932" PA 181.95 deg v_sky +20.92 km/s D 05.49 AU
 Credit: Styled after SORA/Lucky Star



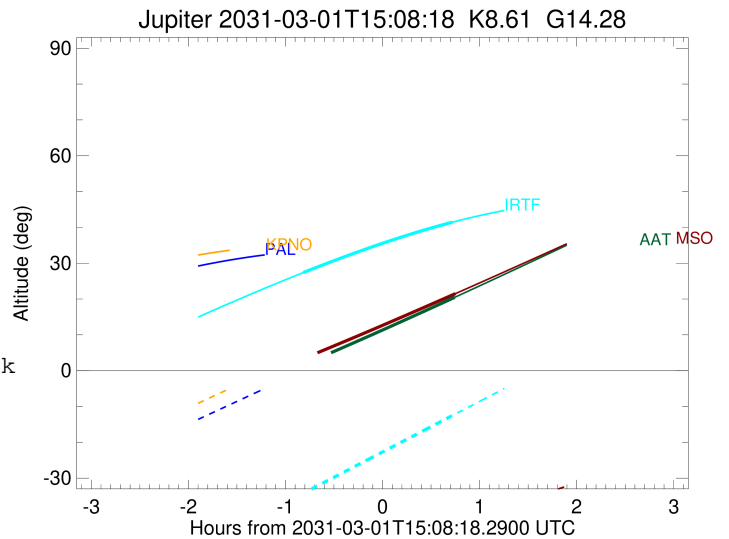
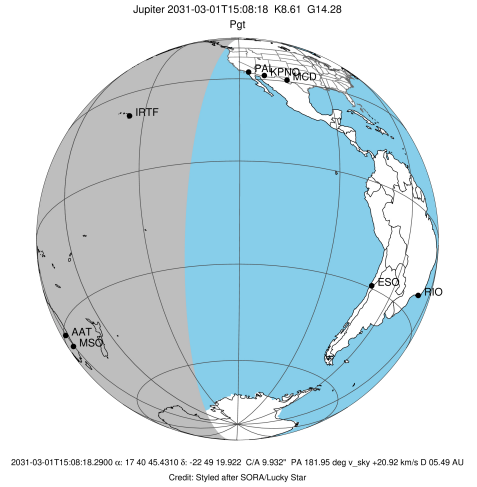
Observable events with sun below -5 deg and altitude above 5 deg

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 01 14:19 - MAR 01 15:51	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 01 15:52 - MAR 01 15:52	Pne
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	MAR 01 15:53 - MAR 01 15:53	Pne



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-01T15:05:14.500
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       : 4116565869487611392
2Mass ID (if available) : 17404543-2249200
ICRS Star Coord at Epoch: 17h 40m 45.43098s -22:49:19.92170s
RUWE (>1.4 is poor) : 0.95
K magnitude           : 8.607
G magnitude           : 14.277
RP magnitude          : 12.884
BP magnitude          : 16.645
DUPflag              : 0
Distance (au)         : 5.488
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 20.92
Sun-Target sep (deg) : 74.83
Sun-Moon sep (deg)   : 169.38
B (ring opening deg) : -2.65
PA of pole (deg)     : 1.24
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 10.889
C/A sky separation (km) : 43338.7
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
    
```

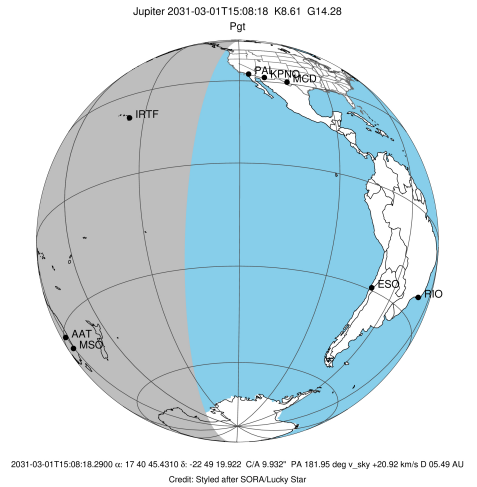


x: target alt < 5.0 deg or sun > -5.0 deg

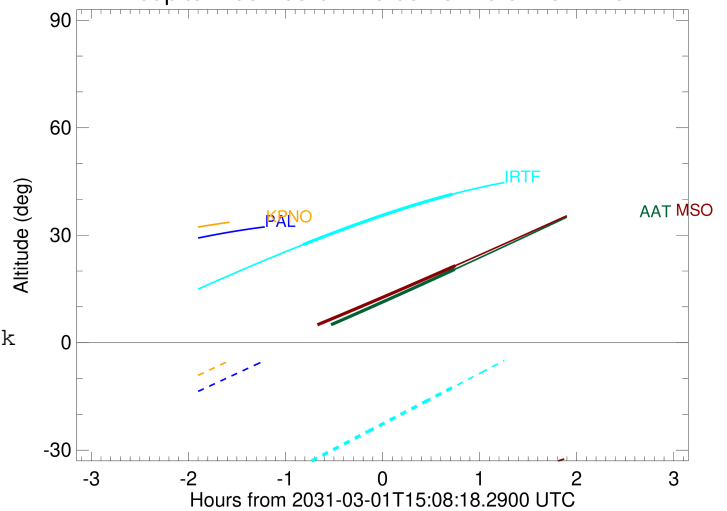
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-01T14:19:13.807	27.36	-34.24	71488.6	36.22	39.85
Jupiter	E	2031-03-01T15:51:24.517	41.42	-12.55	71488.3	38.25	41.93

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-01T15:03:49.390
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      : 4116565869487611392
2Mass ID (if available) : 17404543-2249200
ICRS Star Coord at Epoch: 17h 40m 45.43098s -22:49:19.92170s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 8.607
G magnitude          : 14.277
RP magnitude         : 12.884
BP magnitude         : 16.645
DUPflag             : 0
Distance (au)        : 5.488
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 20.92
Sun-Target sep (deg) : 74.83
Sun-Moon sep (deg)   : 169.13
B (ring opening deg) : -2.65
PA of pole (deg)     : 1.24
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation ("): 9.125
C/A sky separation (km) : 36317.5
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
    
```



Jupiter 2031-03-01T15:08:18 K8.61 G14.28

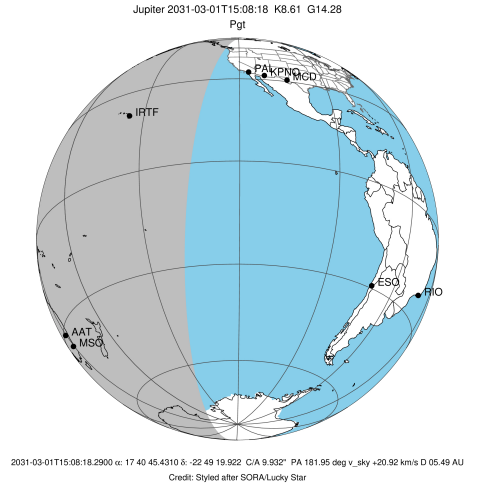


x: target alt < 5.0 deg or sun > -5.0 deg

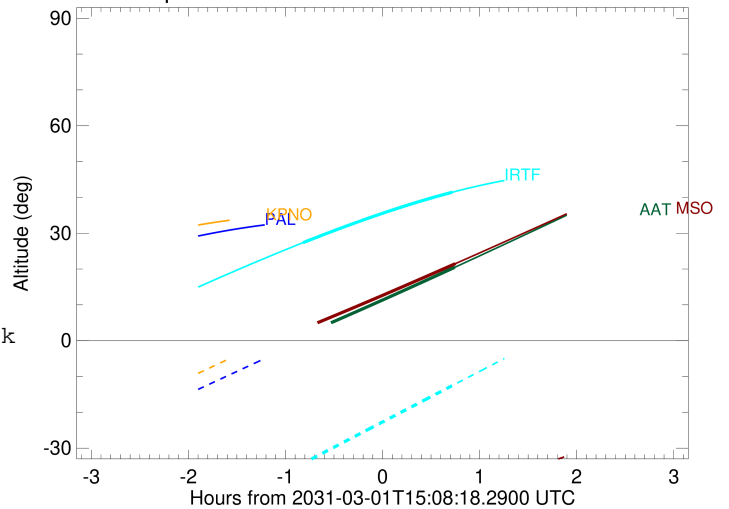
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-01T14:14:55.422	0.81x	-51.38	71489.7	29.37	32.70
Jupiter	E	2031-03-01T15:52:57.867	20.47	-44.98	71489.4	31.63	35.09

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-01T15:04:02.360
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      : 4116565869487611392
2Mass ID (if available) : 17404543-2249200
ICRS Star Coord at Epoch: 17h 40m 45.43098s -22:49:19.92170s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 8.607
G magnitude          : 14.277
RP magnitude         : 12.884
BP magnitude         : 16.645
DUPflag             : 0
Distance (au)        : 5.488
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 20.92
Sun-Target sep (deg) : 74.83
Sun-Moon sep (deg)   : 169.17
B (ring opening deg) : -2.65
PA of pole (deg)     : 1.24
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation ("): 9.040
C/A sky separation (km): 35982.1
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
    
```



Jupiter 2031-03-01T15:08:18 K8.61 G14.28



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	2031-03-01T14:14:58.655	2.57x	-47.35	71489.7	29.08	32.39
Jupiter	E	2031-03-01T15:53:20.108	21.49	-41.62	71489.4	31.30	34.74