

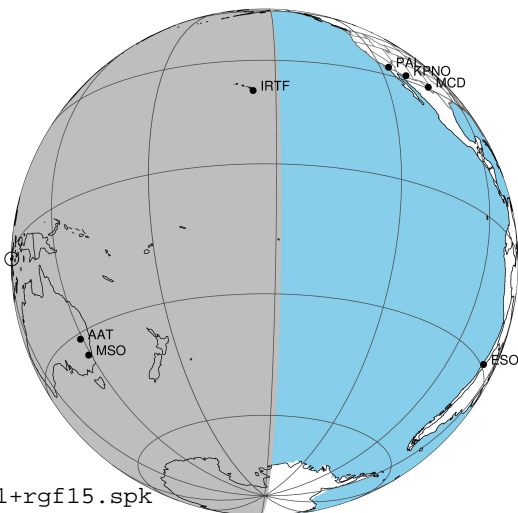
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-03-22T16:02:41.160
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068901245863202560
 2Mass ID (if available) : 17495352-2253020

Jupiter 2031-03-22T16:02:41 K9.83 G14.64 Pgt

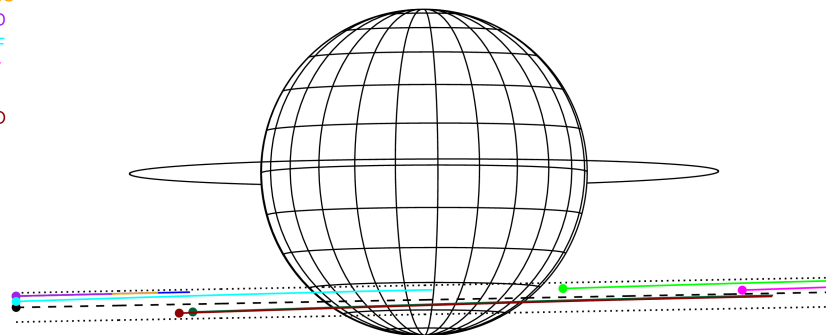
ICRS Star Coord at Epoch: 17h 49m 53.53256s -22:53:02.26879s

RUWE (>1.4 is poor) : 1.12
 K magnitude : 9.832
 G magnitude : 14.641
 RP magnitude : 13.523
 BP magnitude : 15.870
 DUPflag : 0
 Distance (au) : 5.150
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 11.21
 Sun-Target sep (deg) : 93.73
 Sun-Moon sep (deg) : 87.50
 B (ring opening deg) : -2.62
 PA of pole (deg) : 0.25
 Pole direction: RA (deg): 268.05699
 Dec (deg): 64.49651
 C/A sky separation (") : 14.932
 C/A sky separation (km) : 55769.7
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-03-22T16:02:41 K9.83 G14.64
 Pgt



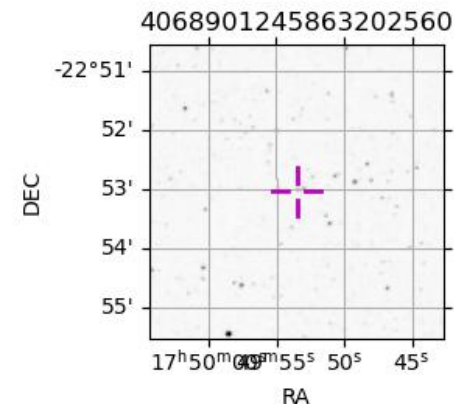
Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 AAT
 MSO



2031-03-22T16:02:41.1600 α: 17 49 53.5326 δ: -22 53 02.269 C/A ***** PA 1.07 deg v_sky +11.21 km/s D 05.15 AU
 Credit: Styled after SORA/Lucky Star

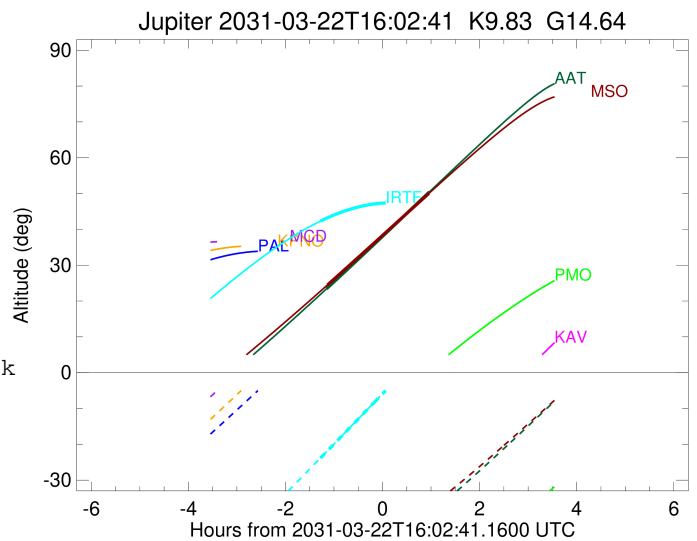
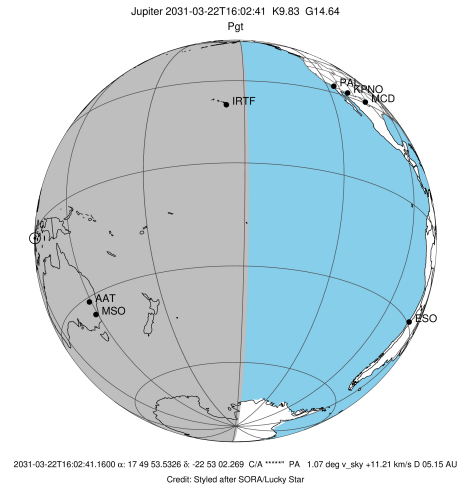
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	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	+	MAR 22 14:45 - MAR 22 14:45	Pin
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 22 14:53 - MAR 22 17:00	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	MAR 22 14:54 - MAR 22 17:00	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-22T16:02:14.760
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       : 4068901245863202560
2Mass ID (if available) : 17495352-2253020
ICRS Star Coord at Epoch: 17h 49m 53.53256s -22:53:02.26879s
RUWE (>1.4 is poor) : 1.12
K magnitude           : 9.832
G magnitude           : 14.641
RP magnitude         : 13.523
BP magnitude         : 15.870
DUPflag              : 0
Distance (au)        : 5.150
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 11.21
Sun-Target sep (deg) : 93.73
Sun-Moon sep (deg)   : 88.21
B (ring opening deg) : -2.62
PA of pole (deg)     : 0.25
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation ("): 13.778
C/A sky separation (km): 51460.0
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
    
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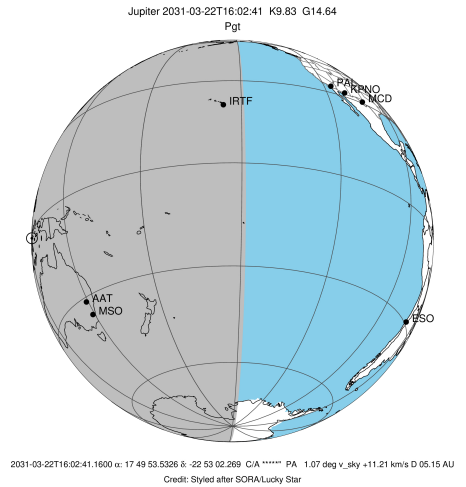


x: target alt < 5.0 deg or sun > -5.0 deg

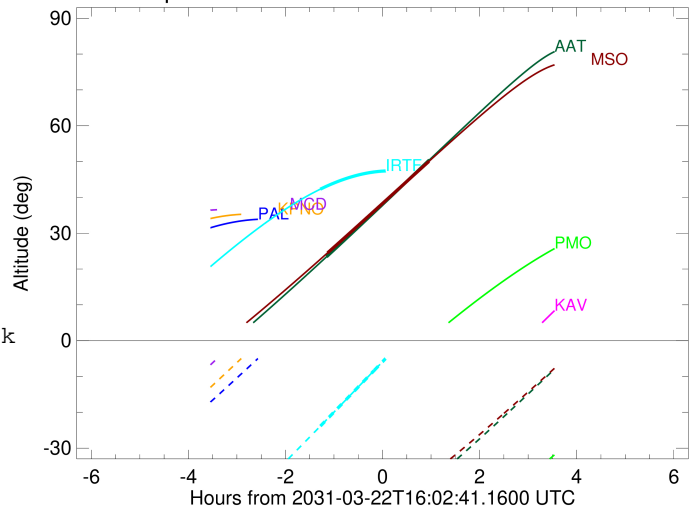
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-22T14:45:51.199	42.29	-23.86	71487.0	-47.02	-50.69
Jupiter	E	2031-03-22T17:18:53.226	44.53	12.05x	71487.3	-45.23	-48.93

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-22T15:56:47.500
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       : 4068901245863202560
2Mass ID (if available) : 17495352-2253020
ICRS Star Coord at Epoch: 17h 49m 53.53256s -22:53:02.26879s
RUWE (>1.4 is poor) : 1.12
K magnitude           : 9.832
G magnitude           : 14.641
RP magnitude          : 13.523
BP magnitude          : 15.870
DUPflag              : 0
Distance (au)         : 5.150
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 11.21
Sun-Target sep (deg) : 93.73
Sun-Moon sep (deg)   : 88.12
B (ring opening deg) : -2.62
PA of pole (deg)     : 0.25
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation ("): 15.477
C/A sky separation (km): 57809.4
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
    
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Jupiter 2031-03-22T16:02:41 K9.83 G14.64

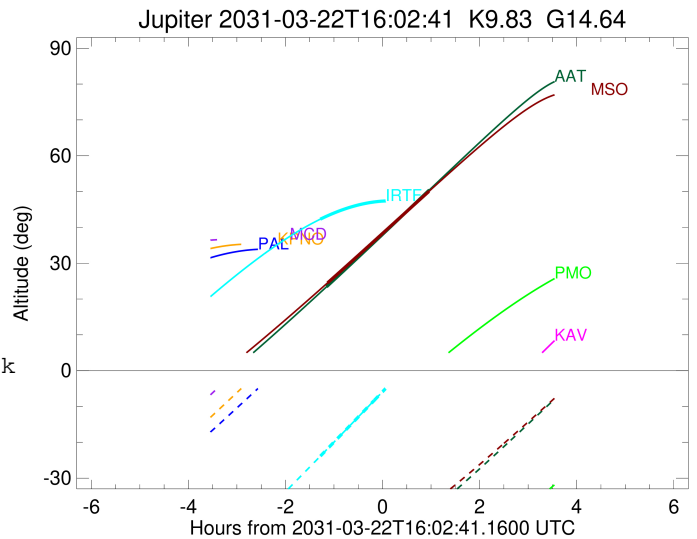
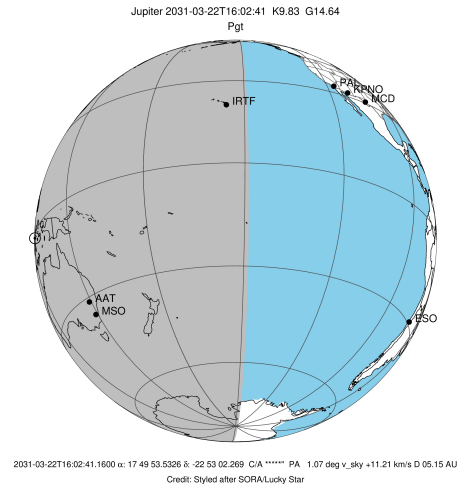


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-22T14:53:33.737	23.42	-57.95	71485.6	-55.45	-58.79
Jupiter	E	2031-03-22T17:00:40.482	50.46	-39.63	71486.1	-52.42	-55.91

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-22T15:57:04.530
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        : 4068901245863202560
2Mass ID (if available) : 17495352-2253020
ICRS Star Coord at Epoch: 17h 49m 53.53256s -22:53:02.26879s
RUWE (>1.4 is poor)  : 1.12
K magnitude           : 9.832
G magnitude           : 14.641
RP magnitude          : 13.523
BP magnitude          : 15.870
DUPflag              : 0
Distance (au)         : 5.150
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 11.21
Sun-Target sep (deg)  : 93.73
Sun-Moon sep (deg)    : 88.12
B (ring opening deg) : -2.62
PA of pole (deg)      : 0.25
Pole direction: RA (deg): 268.05699
Dec (deg): 64.49651
C/A sky separation (") : 15.582
C/A sky separation (km) : 58198.7
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	2031-03-22T14:54:41.342	24.49	-54.09	71485.5	-55.95	-59.26
Jupiter	E	2031-03-22T17:00:04.493	50.05	-37.75	71486.0	-52.98	-56.45