

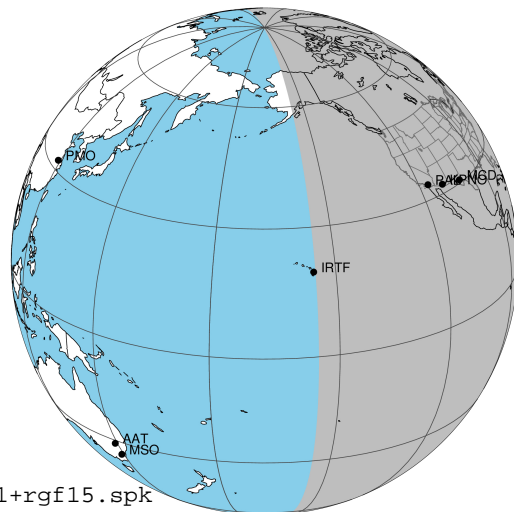
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2037-03-20T04:27:30.160  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 3415361326673852672  
 2Mass ID (if available) : 05080960+2239034

Jupiter 2037-03-20T04:27:30 K9.31 G12.69 Pgt

ICRS Star Coord at Epoch: 05h 08m 09.60079s +22:39:03.27434s

RUWE (>1.4 is poor) : 0.93  
 K magnitude : 9.313  
 G magnitude : 12.694  
 RP magnitude : 11.738  
 BP magnitude : 13.647  
 DUPflag : 0  
 Distance (au) : 5.227  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 18.53  
 Sun-Target sep (deg) : 78.66  
 Sun-Moon sep (deg) : 43.29  
 B (ring opening deg) : 2.43  
 PA of pole (deg) : -4.72  
 Pole direction: RA (deg): 268.05629  
 Dec (deg): 64.49688  
 C/A sky separation (") : 7.466  
 C/A sky separation (km) : 28303.1  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2037-03-20T04:27:30 K9.31 G12.69  
 Pgt

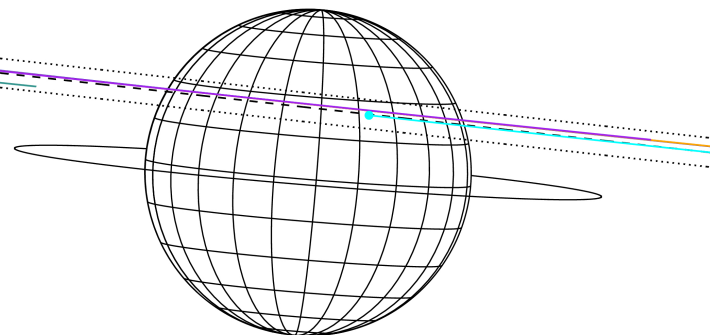


2037-03-20T04:27:30.1600 ex: 05 08 09.6008 s: +22 39 03.274 PA 173.61 deg v\_sky +18.53 km/s D 05.23 AU

Credit: Styled after SORA/Lucky Star

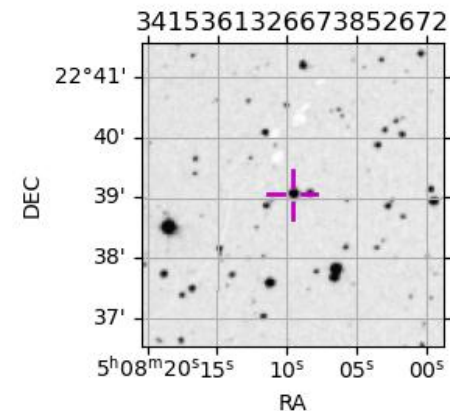
Earth

PAL  
 KPNO  
 MCD  
 IRTF  
 ESO



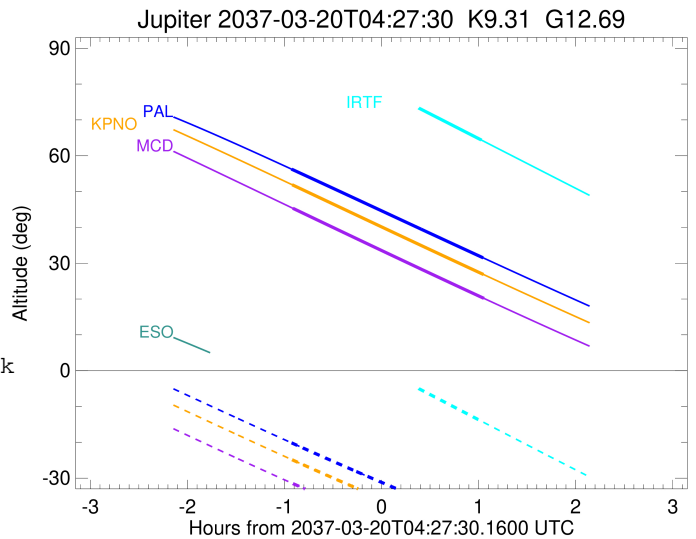
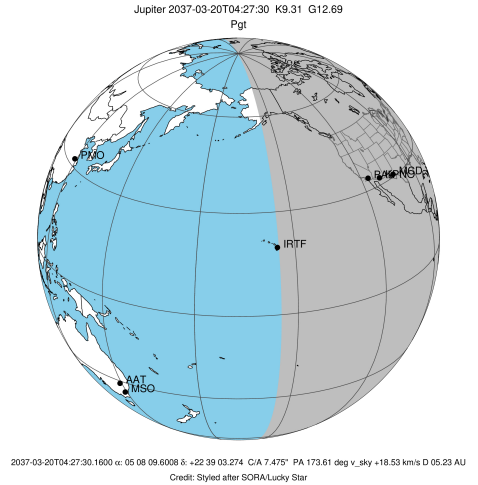
Observable events with sun below -5 deg and altitude above 5 deg

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 20 03:31 - MAR 20 05:30	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	MAR 20 03:32 - MAR 20 05:30	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	MAR 20 03:32 - MAR 20 05:30	Pie
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5		MAR 20 05:29 - MAR 20 05:29	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



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2037-03-20T04:31:17.140
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        : 3415361326673852672
2Mass ID (if available) : 05080960+2239034
ICRS Star Coord at Epoch: 05h 08m 09.60079s +22:39:03.27434s
RUWE (>1.4 is poor) : 0.93
K magnitude           : 9.313
G magnitude           : 12.694
RP magnitude          : 11.738
BP magnitude          : 13.647
DUPflag              : 0
Distance (au)         : 5.227
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 18.53
Sun-Target sep (deg)  : 78.66
Sun-Moon sep (deg)    : 44.19
B (ring opening deg) : 2.43
PA of pole (deg)      : -4.72
Pole direction: RA (deg): 268.05629
Dec (deg): 64.49688
C/A sky separation (" ) : 7.855
C/A sky separation (km) : 29778.5
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
    
```

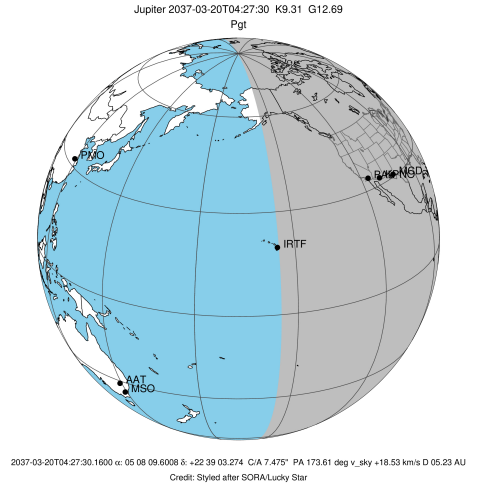


x: target alt < 5.0 deg or sun > -5.0 deg

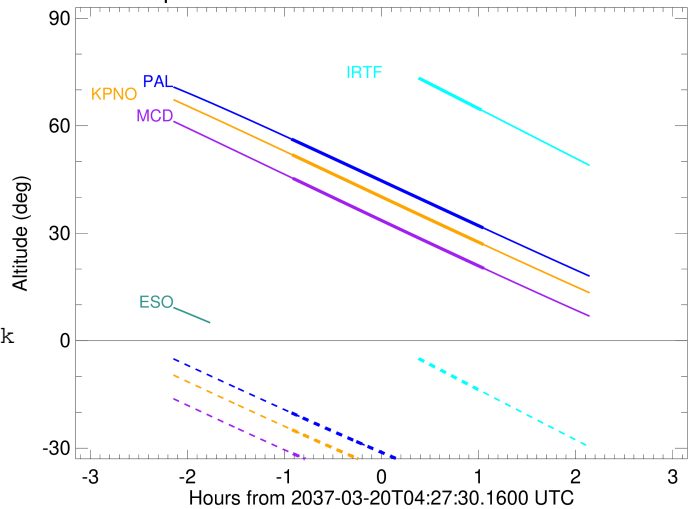
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2037-03-20T03:31:54.367	56.25	-20.15	71490.4	26.03	29.14
Jupiter	E	2037-03-20T05:30:21.437	31.49	-42.55	71490.7	23.26	26.14

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2037-03-20T04:31:35.520
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      : 3415361326673852672
2Mass ID (if available) : 05080960+2239034
ICRS Star Coord at Epoch: 05h 08m 09.60079s +22:39:03.27434s
RUWE (>1.4 is poor) : 0.93
K magnitude          : 9.313
G magnitude          : 12.694
RP magnitude         : 11.738
BP magnitude         : 13.647
DUPflag             : 0
Distance (au)       : 5.227
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 18.53
Sun-Target sep (deg) : 78.66
Sun-Moon sep (deg)  : 44.19
B (ring opening deg) : 2.43
PA of pole (deg)    : -4.72
Pole direction: RA (deg): 268.05629
Dec (deg): 64.49688
C/A sky separation (" ) : 7.849
C/A sky separation (km) : 29757.5
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 2037-03-20T04:27:30 K9.31 G12.69

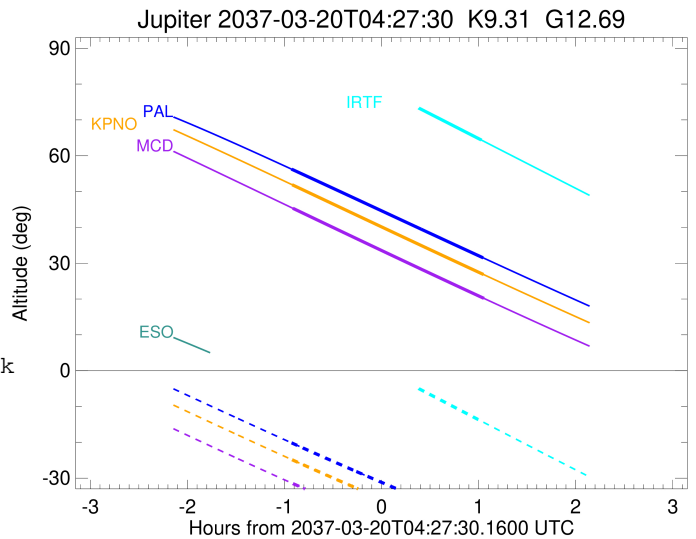
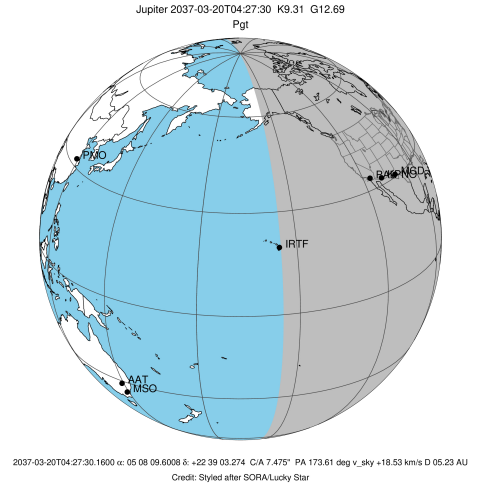


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2037-03-20T03:32:16.274	51.90	-24.87	71490.4	25.97	29.07
Jupiter	E	2037-03-20T05:30:35.019	26.83	-46.91	71490.7	23.28	26.16

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2037-03-20T04:31:57.450
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        : 3415361326673852672
2Mass ID (if available) : 05080960+2239034
ICRS Star Coord at Epoch: 05h 08m 09.60079s +22:39:03.27434s
RUWE (>1.4 is poor) : 0.93
K magnitude           : 9.313
G magnitude           : 12.694
RP magnitude          : 11.738
BP magnitude          : 13.647
DUPflag              : 0
Distance (au)         : 5.227
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 18.53
Sun-Target sep (deg)  : 78.66
Sun-Moon sep (deg)   : 44.18
B (ring opening deg) : 2.43
PA of pole (deg)     : -4.72
Pole direction: RA (deg): 268.05629
Dec (deg): 64.49688
C/A sky separation (") : 7.868
C/A sky separation (km) : 29829.8
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
    
```

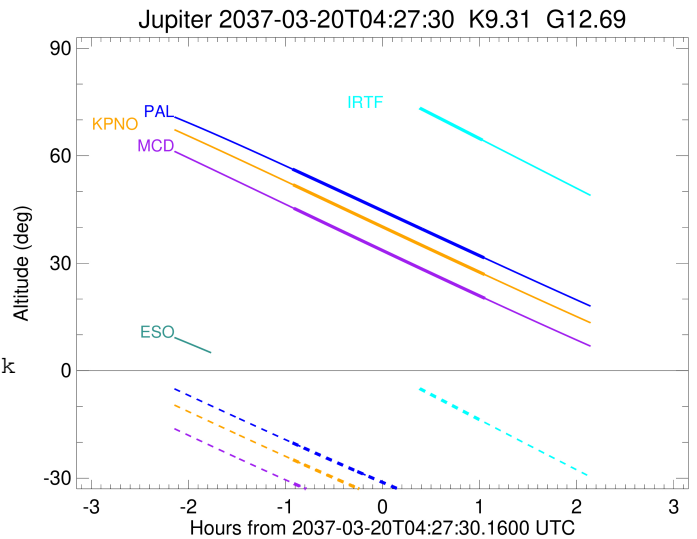
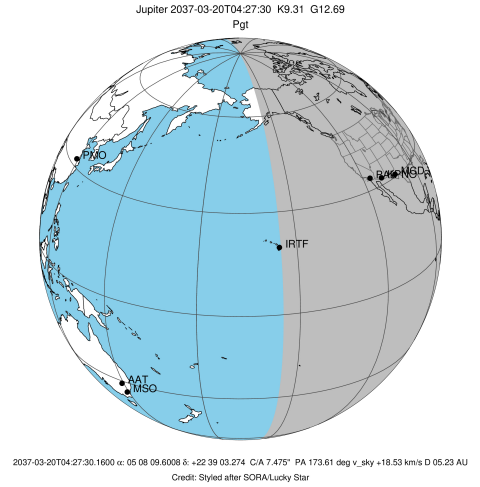


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2037-03-20T03:32:47.227	45.31	-31.53	71490.4	25.97	29.08
Jupiter	E	2037-03-20T05:30:46.485	20.19	-52.40	71490.7	23.39	26.28

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2037-03-20T04:28:37.240
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       : 3415361326673852672
2Mass ID (if available) : 05080960+2239034
ICRS Star Coord at Epoch: 05h 08m 09.60079s +22:39:03.27434s
RUWE (>1.4 is poor) : 0.93
K magnitude           : 9.313
G magnitude           : 12.694
RP magnitude          : 11.738
BP magnitude          : 13.647
DUPflag              : 0
Distance (au)        : 5.227
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 18.53
Sun-Target sep (deg) : 78.66
Sun-Moon sep (deg)   : 44.03
B (ring opening deg) : 2.43
PA of pole (deg)     : -4.72
Pole direction: RA (deg): 268.05629
Dec (deg): 64.49688
C/A sky separation (") : 7.356
C/A sky separation (km) : 27887.8
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	2037-03-20T03:27:59.852	85.88	14.39x	71490.6	24.71	27.71
Jupiter	E	2037-03-20T05:29:06.474	64.40	-14.07	71490.9	21.31	24.02