

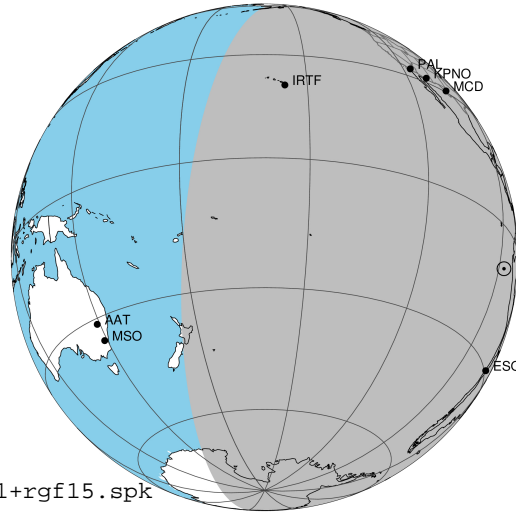
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-08-28T05:49:02.100
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4111432868077522688
 2Mass ID (if available) : 17303215-2305331

Jupiter 2043-08-28T05:49:02 K7.38 G14.18 Pgt

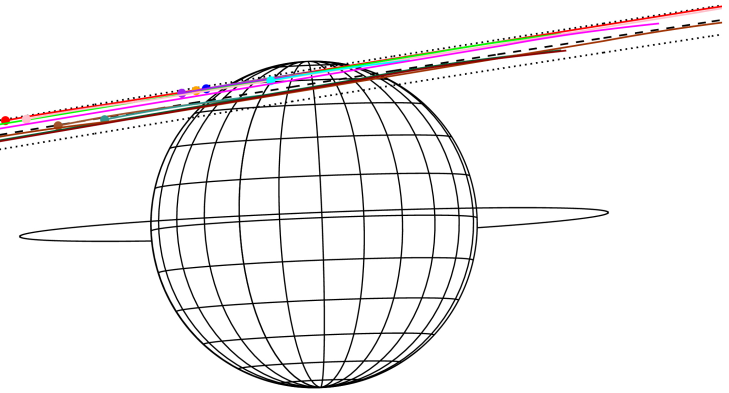
ICRS Star Coord at Epoch: 17h 30m 32.14573s -23°05'33.43276s

RUWE (>1.4 is poor) : 0.97
 K magnitude : 7.379
 G magnitude : 14.182
 RP magnitude : 12.561
 BP magnitude : 18.397
 DUPflag : 0
 Distance (au) : 4.826
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 3.40
 Sun-Target sep (deg) : 108.98
 Sun-Moon sep (deg) : 168.92
 B (ring opening deg) : -2.31
 PA of pole (deg) : 2.33
 Pole direction: RA (deg): 268.05672
 Dec (deg): 64.49731
 C/A sky separation (") : 17.436
 C/A sky separation (km) : 61028.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-08-28T05:49:02 K7.38 G14.18
 Pgt



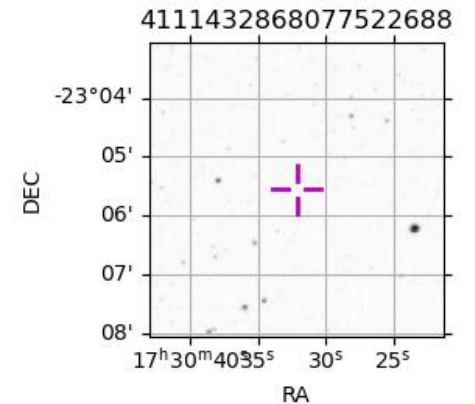
Earth
 PIC
 PAL
 PMO
 KPNO
 MCD
 TEN
 IRTF
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



2043-08-28T05:49:02.1000 α: 17 30 32.14573 δ: -23 05 33.433 C/A ***** PA 189.11 deg v_sky + 3.40 km/s D 0.483 AU
 Credit: Styled after SORA/Lucky Star

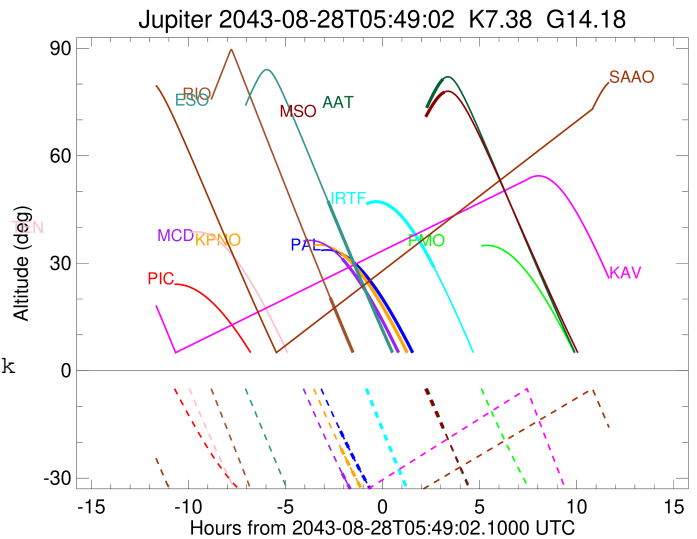
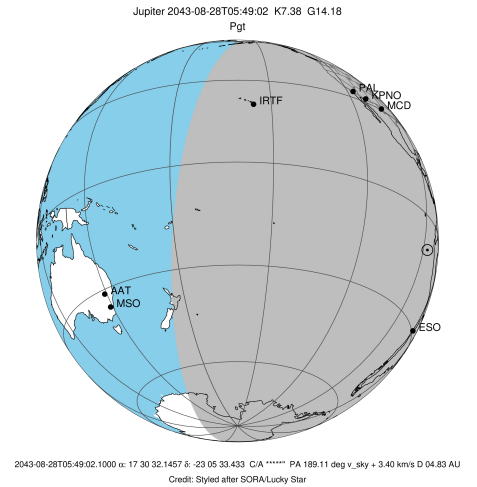
Observable events with sun below -5 deg and altitude above 5 deg

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	+	AUG 28 03:39 - AUG 28 03:39	Pin
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	AUG 28 03:41 - AUG 28 03:41	Pin
MCD	McDonald Obs. 2.7m	30.7	256.0	+	AUG 28 03:44 - AUG 28 03:44	Pin
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+	AUG 28 08:28 - AUG 28 08:28	Pne
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8	+	AUG 28 03:07 - AUG 28 03:07	Pin
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	AUG 28 03:00 - AUG 28 03:00	Pin
AAT	Siding Spring (AAT)	-31.3	149.1	+	AUG 28 08:56 - AUG 28 08:56	Pne
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	AUG 28 09:00 - AUG 28 09:00	Pne



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-08-28T06:13:06.490
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        : 4111432868077522688
2Mass ID (if available) : 17303215-2305331
ICRS Star Coord at Epoch: 17h 30m 32.14573s -23:05:33.43276s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 7.379
G magnitude           : 14.182
RP magnitude          : 12.561
BP magnitude          : 18.397
DUPflag              : 0
Distance (au)         : 4.826
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 3.40
Sun-Target sep (deg)  : 108.98
Sun-Moon sep (deg)    : 169.78
B (ring opening deg) : -2.31
PA of pole (deg)      : 2.33
Pole direction: RA (deg): 268.05672
Dec (deg): 64.49731
C/A sky separation (") : 18.908
C/A sky separation (km) : 66185.1
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
    
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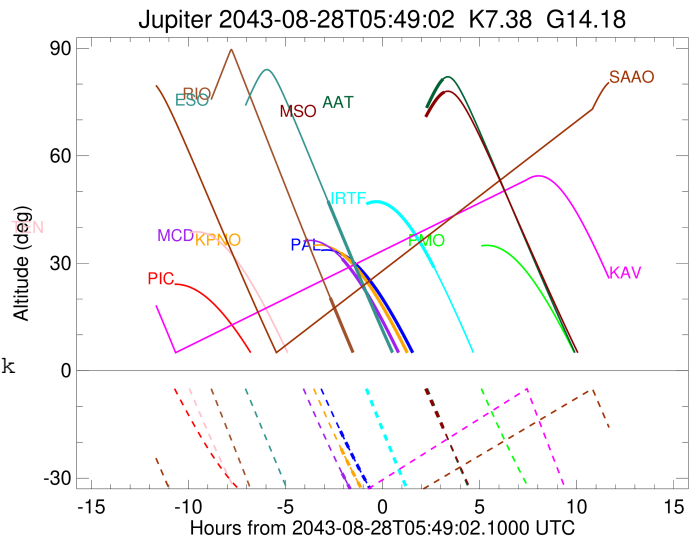
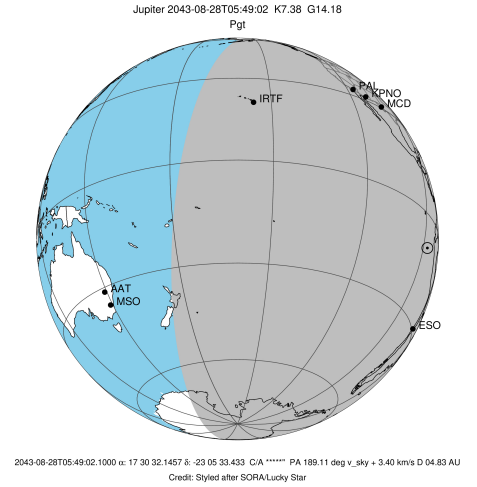


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-28T03:39:04.125	32.74	-16.80	71486.4	61.32	64.29
Jupiter	E	2043-08-28T08:34:46.899	-8.52x	-45.75	71485.4	72.36	74.35

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch             : 2043-08-28T06:16:56.790
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        : 4111432868077522688
2Mass ID (if available) : 17303215-2305331
ICRS Star Coord at Epoch: 17h 30m 32.14573s -23:05:33.43277s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 7.379
G magnitude           : 14.182
RP magnitude          : 12.561
BP magnitude          : 18.397
DUPflag              : 0
Distance (au)         : 4.826
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 3.40
Sun-Target sep (deg)  : 108.98
Sun-Moon sep (deg)   : 169.82
B (ring opening deg) : -2.31
PA of pole (deg)     : 2.33
Pole direction: RA (deg): 268.05672
Dec (deg): 64.49731
C/A sky separation (") : 18.850
C/A sky separation (km) : 65980.1
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
    
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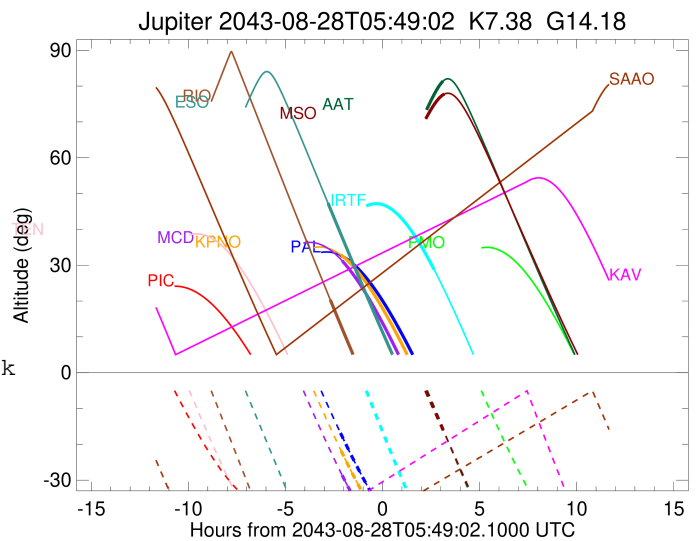
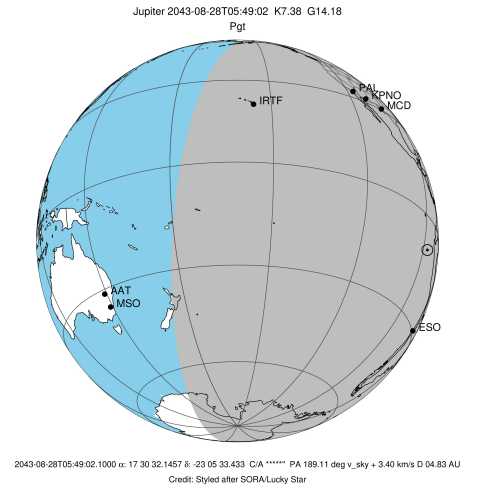


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-28T03:41:13.215	32.80	-21.81	71486.4	61.21	64.19
Jupiter	E	2043-08-28T08:39:02.198	-13.03x	-45.14	71485.5	71.72	73.77

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-08-28T06:21:28.330
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       : 4111432868077522688
2Mass ID (if available) : 17303215-2305331
ICRS Star Coord at Epoch: 17h 30m 32.14573s -23:05:33.43277s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 7.379
G magnitude           : 14.182
RP magnitude          : 12.561
BP magnitude          : 18.397
DUPflag              : 0
Distance (au)        : 4.826
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 3.40
Sun-Target sep (deg) : 108.98
Sun-Moon sep (deg)   : 169.86
B (ring opening deg) : -2.31
PA of pole (deg)     : 2.33
Pole direction: RA (deg): 268.05672
Dec (deg): 64.49731
C/A sky separation ("): 18.767
C/A sky separation (km): 65690.7
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
    
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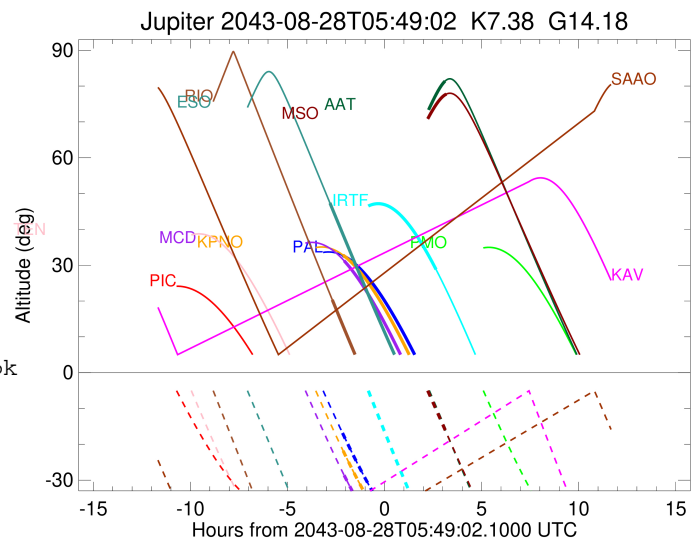
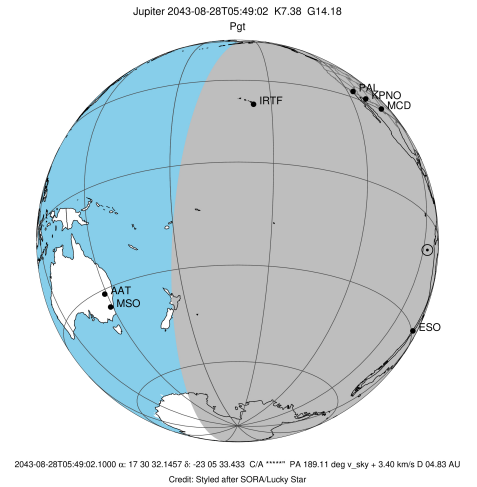


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-28T03:44:12.178	31.24	-28.61	71486.4	61.05	64.04
Jupiter	E	2043-08-28T08:43:47.513	-19.80x	-42.37	71485.5	70.91	73.04

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-08-28T05:40:47.600
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        : 4111432868077522688
2Mass ID (if available) : 17303215-2305331
ICRS Star Coord at Epoch: 17h 30m 32.14573s -23:05:33.43276s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 7.379
G magnitude           : 14.182
RP magnitude          : 12.561
BP magnitude          : 18.397
DUPflag               : 0
Distance (au)         : 4.826
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 3.40
Sun-Target sep (deg)  : 108.98
Sun-Moon sep (deg)    : 169.39
B (ring opening deg)  : -2.31
PA of pole (deg)      : 2.33
Pole direction: RA (deg): 268.05672
Dec (deg): 64.49731
C/A sky separation (") : 18.677
C/A sky separation (km) : 65369.1
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
    
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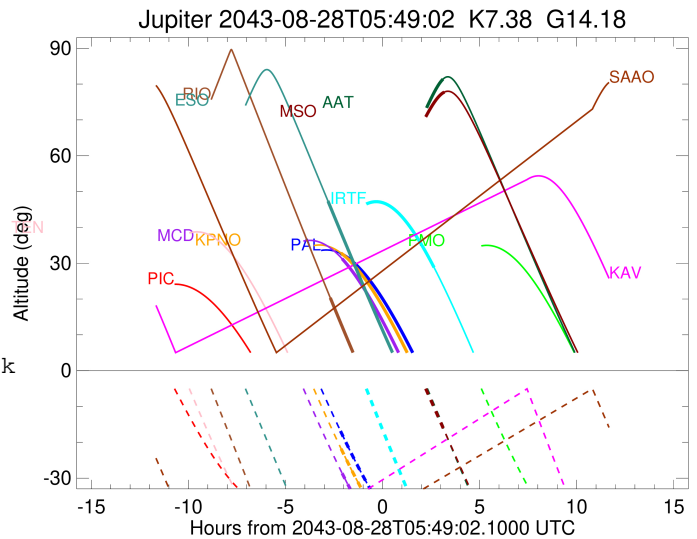
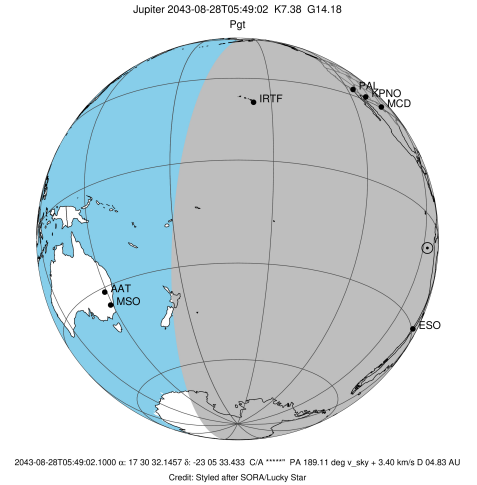


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-28T02:51:46.457	32.34	24.68x	71486.9	56.98	60.24
Jupiter	E	2043-08-28T08:28:25.309	28.79	-49.24	71485.4	72.54	74.51

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-28T06:28:02.090
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : RIO
Location             : Rio de Janeiro
Latitude (deg)       : -22.89506
E. Longitude (deg)   : 316.77708
Altitude (km)        : 0.033
Gaia source ID       : 4111432868077522688
2Mass ID (if available) : 17303215-2305331
ICRS Star Coord at Epoch: 17h 30m 32.14573s -23:05:33.43277s
RUWE (>1.4 is poor) : 0.97
K magnitude          : 7.379
G magnitude          : 14.182
RP magnitude         : 12.561
BP magnitude         : 18.397
DUPflag             : 0
Distance (au)        : 4.826
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 3.40
Sun-Target sep (deg) : 108.98
Sun-Moon sep (deg)   : 169.35
B (ring opening deg) : -2.31
PA of pole (deg)     : 2.33
Pole direction: RA (deg): 268.05672
Dec (deg): 64.49731
C/A sky separation ("): 16.628
C/A sky separation (km): 58205.6
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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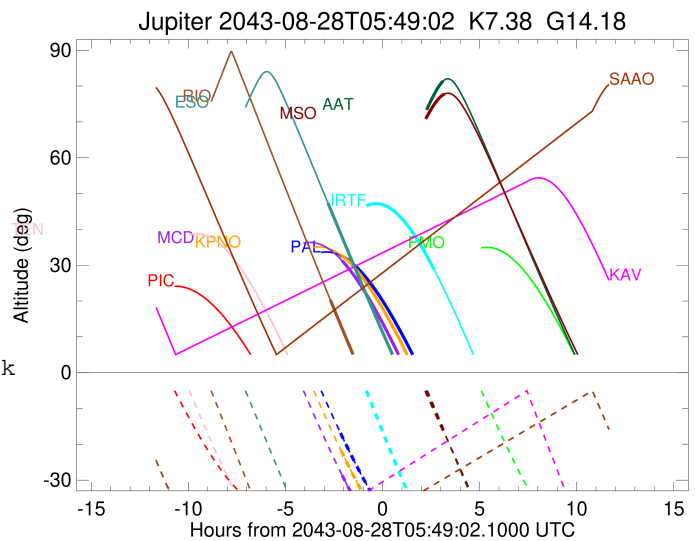
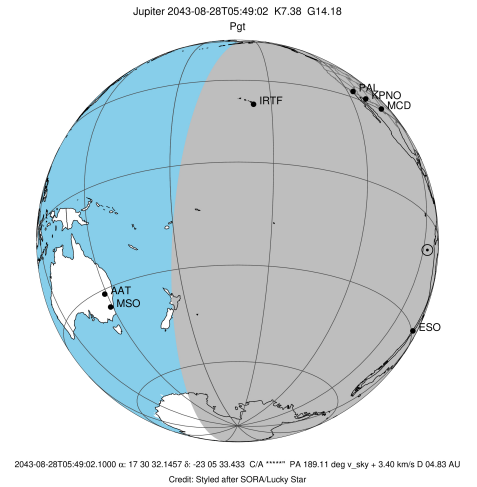


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-28T03:07:43.600	20.32	-76.62	71487.7	50.48	54.05
Jupiter	E	2043-08-28T09:27:56.428	-43.46x	3.93x	71486.7	59.05	62.18

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-28T06:31:49.070
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : ESO
Location             : European Southern Obs. (3.6m)
Latitude (deg)       : -29.26097
E. Longitude (deg)   : 289.26831
Altitude (km)        : 2.400
Gaia source ID       : 4111432868077522688
2Mass ID (if available) : 17303215-2305331
ICRS Star Coord at Epoch: 17h 30m 32.14573s -23:05:33.43277s
RUWE (>1.4 is poor) : 0.97
K magnitude          : 7.379
G magnitude          : 14.182
RP magnitude         : 12.561
BP magnitude         : 18.397
DUPflag             : 0
Distance (au)        : 4.826
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 3.40
Sun-Target sep (deg) : 108.98
Sun-Moon sep (deg)   : 169.50
B (ring opening deg) : -2.31
PA of pole (deg)     : 2.33
Pole direction: RA (deg): 268.05672
Dec (deg): 64.49731
C/A sky separation ("): 16.779
C/A sky separation (km): 58733.1
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
    
```

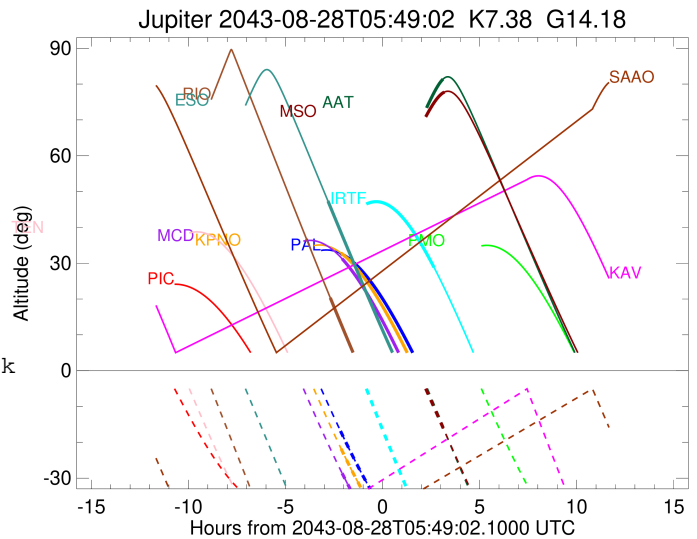
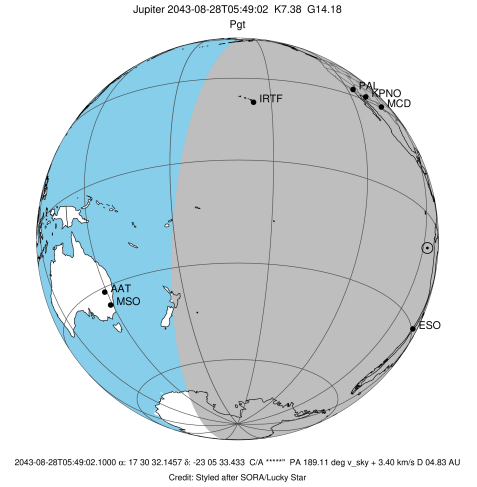


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-28T03:00:19.089	47.37	-58.94	71487.7	50.64	54.21
Jupiter	E	2043-08-28T09:37:16.399	-28.79x	-19.24	71486.6	59.33	62.44

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-28T05:12:56.240
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       : 4111432868077522688
2Mass ID (if available) : 17303215-2305331
ICRS Star Coord at Epoch: 17h 30m 32.14573s -23:05:33.43276s
RUWE (>1.4 is poor) : 0.97
K magnitude          : 7.379
G magnitude          : 14.182
RP magnitude         : 12.561
BP magnitude         : 18.397
DUPflag             : 0
Distance (au)        : 4.826
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 3.40
Sun-Target sep (deg) : 108.98
Sun-Moon sep (deg)   : 168.37
B (ring opening deg) : -2.31
PA of pole (deg)     : 2.33
Pole direction: RA (deg): 268.05672
Dec (deg): 64.49731
C/A sky separation ("): 16.703
C/A sky separation (km): 58458.0
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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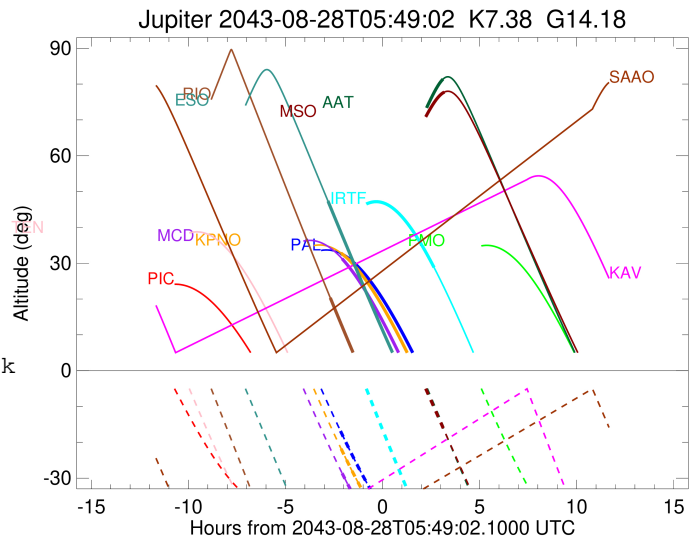
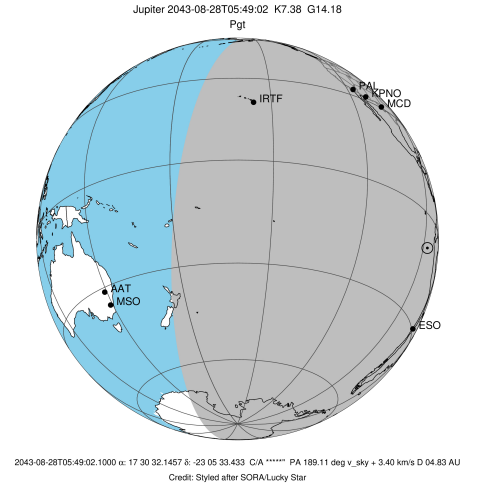


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-08-28T01:49:37.249	-4.25x	48.94x	71488.3	45.32	49.02
Jupiter	E	2043-08-28T08:56:11.574	81.38	-15.90	71486.2	63.84	66.61


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-08-28T05:15:09.720
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      : 4111432868077522688
2Mass ID (if available) : 17303215-2305331
ICRS Star Coord at Epoch: 17h 30m 32.14573s -23:05:33.43276s
RUWE (>1.4 is poor) : 0.97
K magnitude         : 7.379
G magnitude         : 14.182
RP magnitude        : 12.561
BP magnitude        : 18.397
DUPflag            : 0
Distance (au)       : 4.826
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 3.40
Sun-Target sep (deg) : 108.98
Sun-Moon sep (deg)  : 168.37
B (ring opening deg) : -2.31
PA of pole (deg)    : 2.33
Pole direction: RA (deg): 268.05672
Dec (deg): 64.49731
C/A sky separation (") : 16.604
C/A sky separation (km) : 58113.2
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	2043-08-28T01:49:15.862	-2.32x	44.91x	71488.4	44.96	48.67
Jupiter	E	2043-08-28T09:00:05.064	77.75	-16.74	71486.2	63.22	66.05