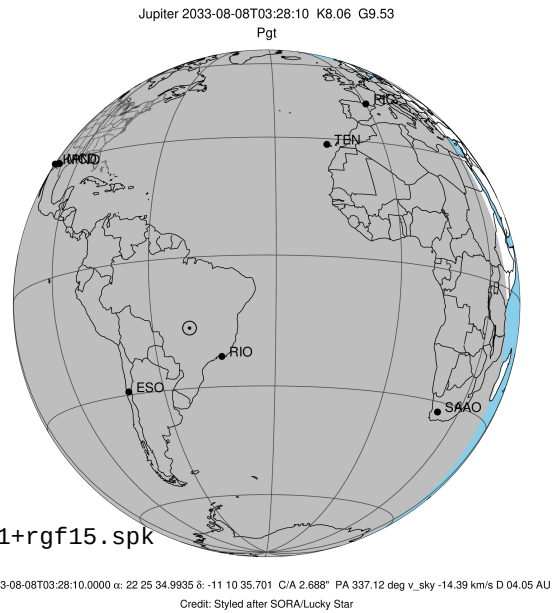
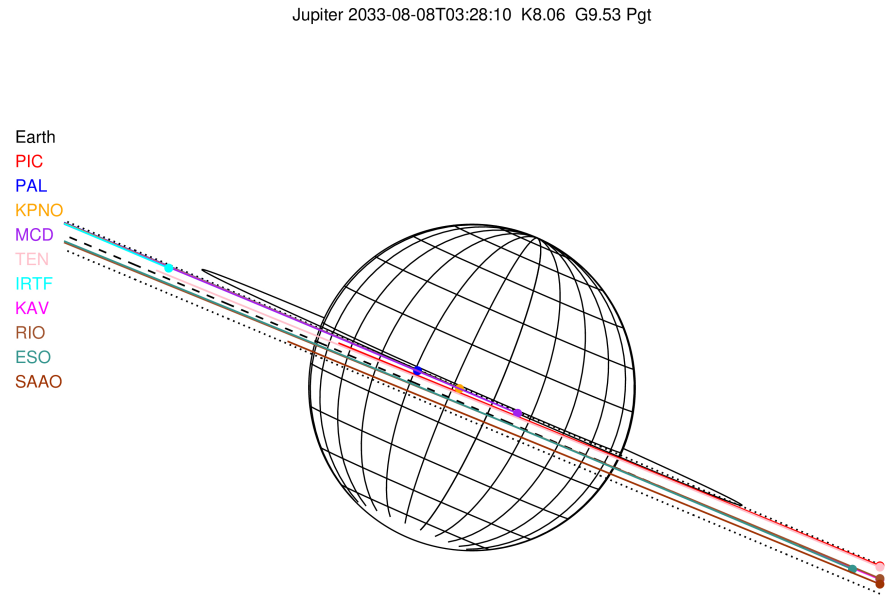
Stellar occultation prediction by rfrench@wellesley.edu Sun Jun 25 10:42:08 2023

target : Jupiter
target radius (km) : 71492.00
C/A epoch : 2033-08-08T03:28:10.000
Event type : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Gaia source ID : 2602446578728545920
2Mass ID (if available) : 22253539-1110331

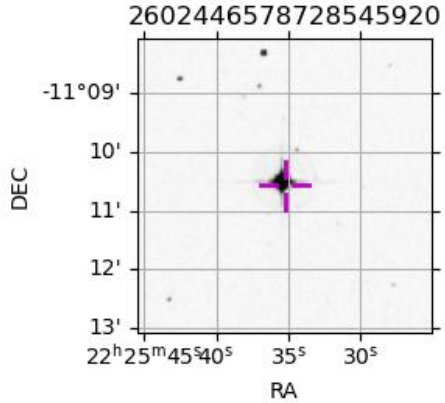
ICRS Star Coord at Epoch: 22h 25m 34.99354s -11:10:35.70079s
RUWE (>1.4 is poor) : 0.99
K magnitude : 8.056
G magnitude : 9.530
RP magnitude : 9.017
BP magnitude : 9.873
DUPflag : 0
Distance (au) : 4.046
f0 (km) : 0.00
g0 (km) : 0.00
skyplane vel. (km/s) : -14.39
Sun-Target sep (deg) : 161.37
Sun-Moon sep (deg) : 53.41
B (ring opening deg) : 1.09
PA of pole (deg) : -23.59
Pole direction: RA (deg): 268.05646
Dec (deg): 64.49663
C/A sky separation (") : 2.688
C/A sky separation (km) : 7888.1
NAIF SPICE kernels : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat440l.bsp





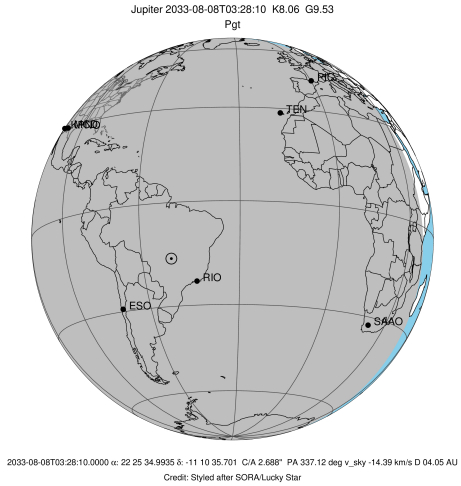
Observable events with sun below -5 deg and altitude above 5 deg

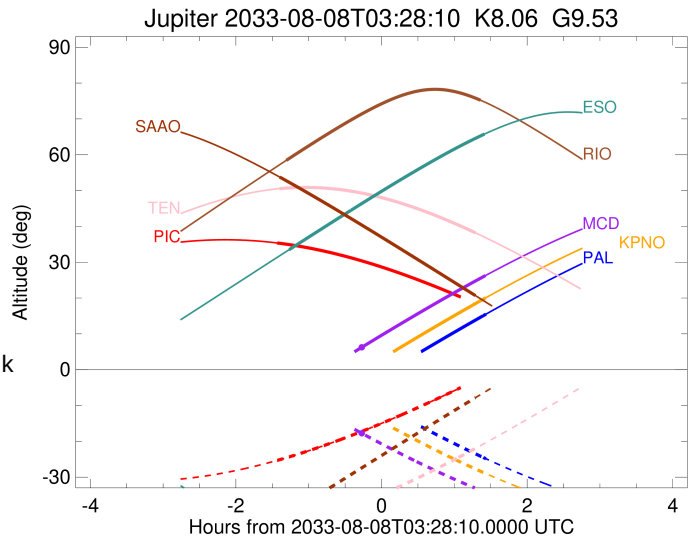
Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+	AUG 08 02:02 - AUG 08 02:02	Pin
PAL	Palomar Mt (200")	33.4	243.1	+	AUG 08 04:54 - AUG 08 04:54	Pne
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	AUG 08 04:54 - AUG 08 04:54	Pne
MCD	McDonald Obs. 2.7m	30.7	256.0	+	AUG 08 04:53 - AUG 08 04:53	Pne
TEN	Teide Obs./Tenerife	28.3	343.5	+ +	AUG 08 02:04 - AUG 08 04:45	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8	+ +	AUG 08 02:09 - AUG 08 04:49	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	AUG 08 02:12 - AUG 08 04:52	Pie
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	AUG 08 02:04 - AUG 08 04:45	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```
Jupiter_2033-08-08T03_28_10.0000_PIC.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:14:19 2023

target                  : Jupiter
target radius (km)      :  71492.00
C/A epoch               : 2033-08-08T03:23:16.710
Event type              : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code           : PIC
Location                : Pic du Midi
Latitude (deg)          :  42.93656
E. Longitude (deg)      :   0.14231
Altitude (km)           :   2.890
Gaia source ID          : 2602446578728545920
2Mass ID (if available) : 22253539-1110331
ICRS Star Coord at Epoch: 22h 25m 34.99354s -11:10:35.70078s
RUWE (>1.4 is poor)     :   0.99
K magnitude             :  8.056
G magnitude             :  9.530
RP magnitude            :  9.017
BP magnitude            :  9.873
DUPflag                 : 0
Distance (au)           :  4.046
f0 (km)                 :       0.00
g0 (km)                 :       0.00
skyplane vel. (km/s)    : -14.39
Sun-Target sep (deg)    :  161.37
Sun-Moon sep (deg)      :   54.11
B (ring opening deg)    :    1.09
PA of pole (deg)        :  -23.59
Pole direction: RA (deg): 268.05646
Dec (deg):  64.49663
C/A sky separation (")  :   1.437
C/A sky separation (km) :   4217.6
NAIF SPICE kernels      : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat440l.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
ura116.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
```



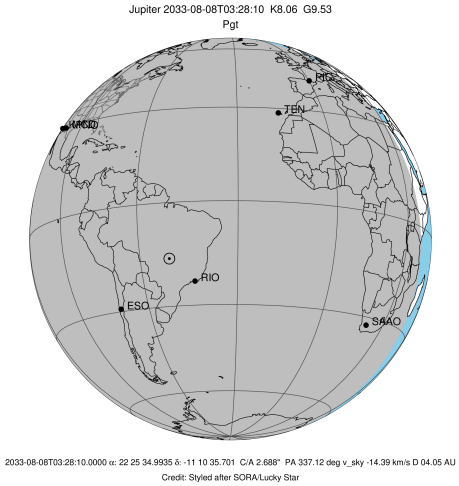


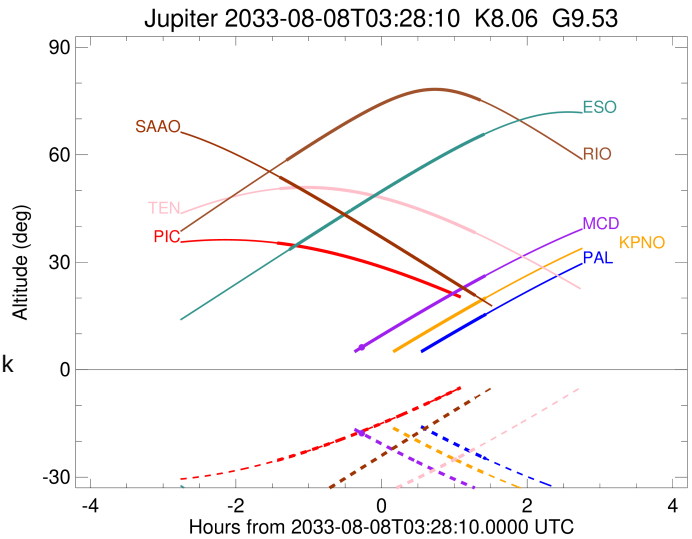
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2033-08-08T02:02:10.966	35.36	-25.32	71492.0	-2.11	-2.41
Jupiter	E	2033-08-08T04:44:41.319	18.61	-3.16x	71492.0	-4.64	-5.30

```
Jupiter_2033-08-08T03_28_10.0000_PAL.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:16:22 2023

target                  : Jupiter
target radius (km)      :  71492.00
C/A epoch               : 2033-08-08T03:32:14.080
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          : 2602446578728545920
2Mass ID (if available) : 22253539-1110331
ICRS Star Coord at Epoch: 22h 25m 34.99354s -11:10:35.70079s
RUWE (>1.4 is poor)     :   0.99
K magnitude             :  8.056
G magnitude             :  9.530
RP magnitude            :  9.017
BP magnitude            :  9.873
DUPflag                 : 0
Distance (au)           :  4.046
f0 (km)                 :       0.00
g0 (km)                 :       0.00
skyplane vel. (km/s)    : -14.39
Sun-Target sep (deg)    :  161.37
Sun-Moon sep (deg)      :   53.00
B (ring opening deg)    :    1.09
PA of pole (deg)        :  -23.59
Pole direction: RA (deg): 268.05646
Dec (deg):  64.49663
C/A sky separation (")  :   0.874
C/A sky separation (km) :   2564.6
NAIF SPICE kernels      : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat440l.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
ura116.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
```



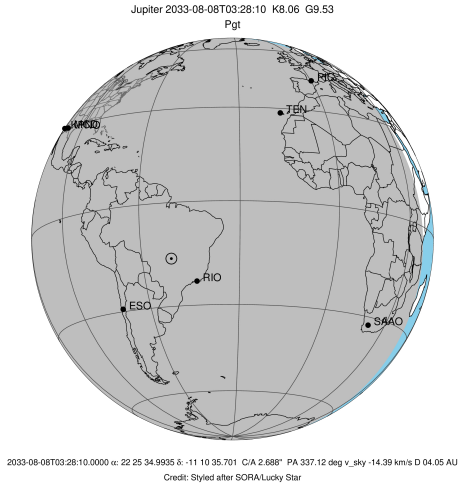


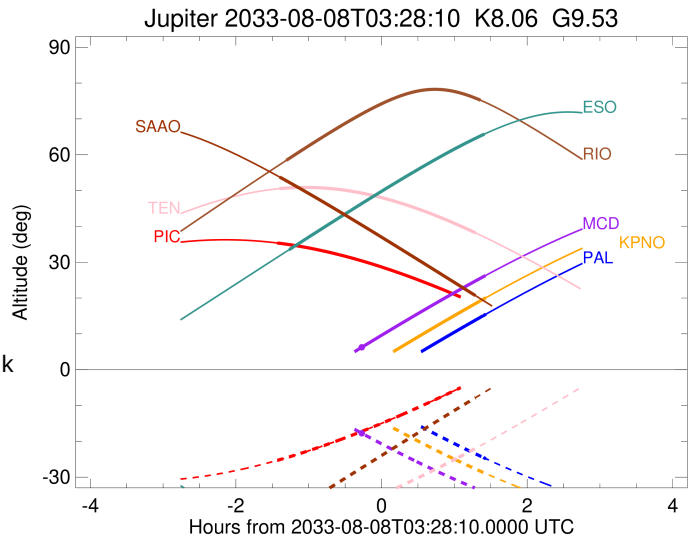
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2033-08-08T02:09:28.875	-18.00x	5.40x	71492.0	-1.66	-1.89
Jupiter	E	2033-08-08T04:54:13.377	15.49	-24.85	71492.0	-2.68	-3.07

```
Jupiter_2033-08-08T03_28_10.0000_KPNO.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:20:25 2023

target                  : Jupiter
target radius (km)      :  71492.00
C/A epoch               : 2033-08-08T03:32:15.140
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          : 2602446578728545920
2Mass ID (if available) : 22253539-1110331
ICRS Star Coord at Epoch: 22h 25m 34.99354s -11:10:35.70079s
RUWE (>1.4 is poor)     :   0.99
K magnitude             :  8.056
G magnitude             :  9.530
RP magnitude            :  9.017
BP magnitude            :  9.873
DUPflag                 : 0
Distance (au)           :  4.046
f0 (km)                 :       0.00
g0 (km)                 :       0.00
skyplane vel. (km/s)    : -14.39
Sun-Target sep (deg)    :  161.37
Sun-Moon sep (deg)      :   53.06
B (ring opening deg)    :    1.09
PA of pole (deg)        :  -23.59
Pole direction: RA (deg): 268.05646
Dec (deg):  64.49663
C/A sky separation (")  :   0.883
C/A sky separation (km) :   2591.6
NAIF SPICE kernels      : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat440l.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
ura116.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
```



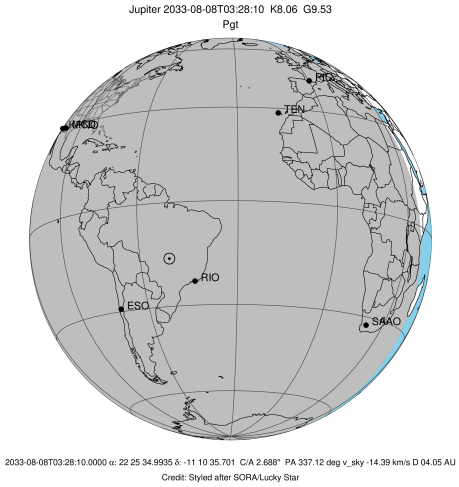


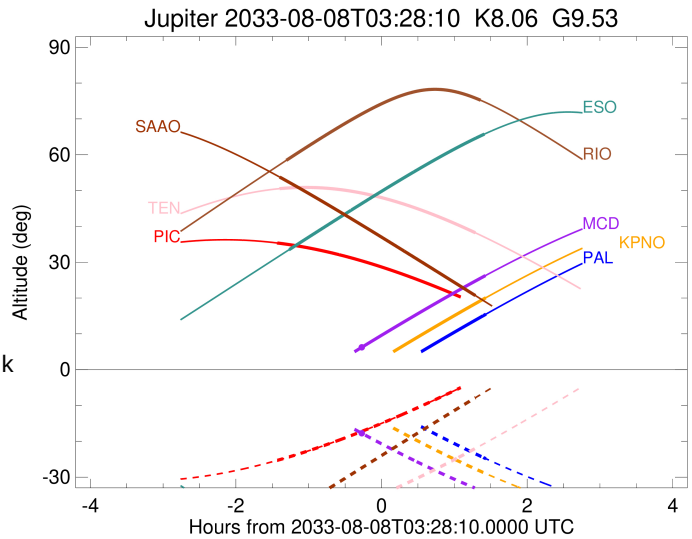
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2033-08-08T02:09:41.541	-13.45x	0.71x	71492.0	-1.63	-1.86
Jupiter	E	2033-08-08T04:54:03.402	20.05	-29.00	71492.0	-2.76	-3.16

Jupiter_2033-08-08T03_28_10.0000_MCD.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:22:31 2023

target : Jupiter
target radius (km) : 71492.00
C/A epoch : 2033-08-08T03:32:06.860
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 : 2602446578728545920
2Mass ID (if available) : 22253539-1110331
ICRS Star Coord at Epoch: 22h 25m 34.99354s -11:10:35.70079s
RUWE (>1.4 is poor) : 0.99
K magnitude : 8.056
G magnitude : 9.530
RP magnitude : 9.017
BP magnitude : 9.873
DUPflag : 0
Distance (au) : 4.046
f0 (km) : 0.00
g0 (km) : 0.00
skyplane vel. (km/s) : -14.39
Sun-Target sep (deg) : 161.37
Sun-Moon sep (deg) : 53.16
B (ring opening deg) : 1.09
PA of pole (deg) : -23.59
Pole direction: RA (deg): 268.05646
Dec (deg): 64.49663
C/A sky separation (") : 0.894
C/A sky separation (km) : 2623.4
NAIF SPICE kernels : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat440l.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
ura116.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



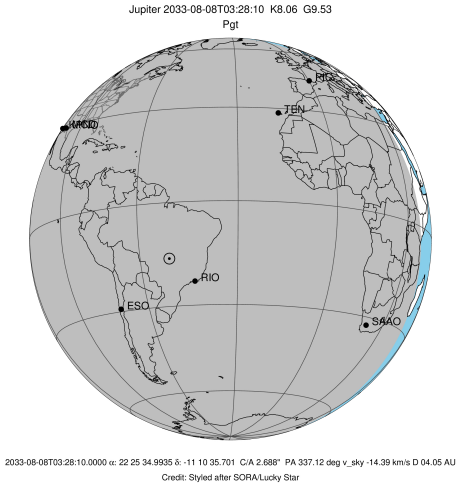


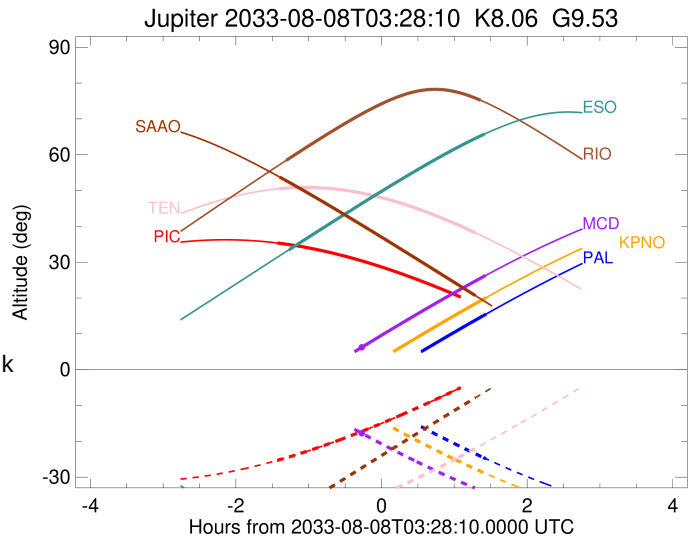
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2033-08-08T02:09:49.924	-6.83x	-5.84	71492.0	-1.57	-1.80
Jupiter	E	2033-08-08T04:53:40.283	26.24	-34.18	71492.0	-2.88	-3.29

Jupiter_2033-08-08T03_28_10.0000_TEN.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:24:37 2023

target : Jupiter
target radius (km) : 71492.00
C/A epoch : 2033-08-08T03:24:45.970
Event type : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code : TEN
Location : Teide Obs./Tenerife
Latitude (deg) : 28.30050
E. Longitude (deg) : 343.48909
Altitude (km) : 2.395
Gaia source ID : 2602446578728545920
2Mass ID (if available) : 22253539-1110331
ICRS Star Coord at Epoch: 22h 25m 34.99354s -11:10:35.70079s
RUWE (>1.4 is poor) : 0.99
K magnitude : 8.056
G magnitude : 9.530
RP magnitude : 9.017
BP magnitude : 9.873
DUPflag : 0
Distance (au) : 4.046
f0 (km) : 0.00
g0 (km) : 0.00
skyplane vel. (km/s) : -14.39
Sun-Target sep (deg) : 161.37
Sun-Moon sep (deg) : 54.21
B (ring opening deg) : 1.09
PA of pole (deg) : -23.59
Pole direction: RA (deg): 268.05646
Dec (deg): 64.49663
C/A sky separation (") : 1.628
C/A sky separation (km) : 4776.8
NAIF SPICE kernels : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat440l.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
ura116.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



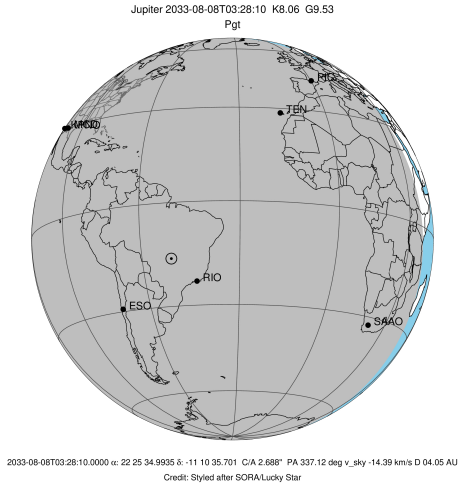


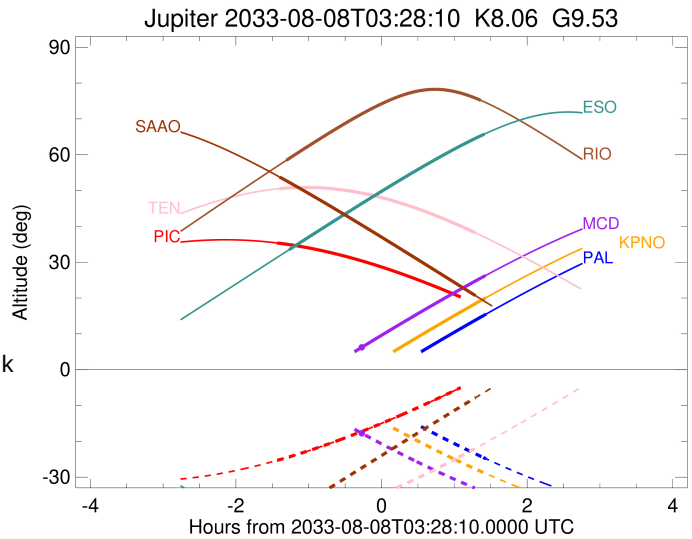
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2033-08-08T02:04:12.246	50.52	-44.00	71492.0	-2.48	-2.84
Jupiter	E	2033-08-08T04:45:31.499	38.20	-21.98	71492.0	-5.22	-5.97

Jupiter_2033-08-08T03_28_10.0000_RIO.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:30:41 2023

target : Jupiter
target radius (km) : 71492.00
C/A epoch : 2033-08-08T03:29:49.060
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 : 2602446578728545920
2Mass ID (if available) : 22253539-1110331
ICRS Star Coord at Epoch: 22h 25m 34.99354s -11:10:35.70079s
RUWE (>1.4 is poor) : 0.99
K magnitude : 8.056
G magnitude : 9.530
RP magnitude : 9.017
BP magnitude : 9.873
DUPflag : 0
Distance (au) : 4.046
f0 (km) : 0.00
g0 (km) : 0.00
skyplane vel. (km/s) : -14.39
Sun-Target sep (deg) : 161.37
Sun-Moon sep (deg) : 54.04
B (ring opening deg) : 1.09
PA of pole (deg) : -23.59
Pole direction: RA (deg): 268.05646
Dec (deg): 64.49663
C/A sky separation (") : 2.958
C/A sky separation (km) : 8.678.9
NAIF SPICE kernels : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat440l.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
ura116.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



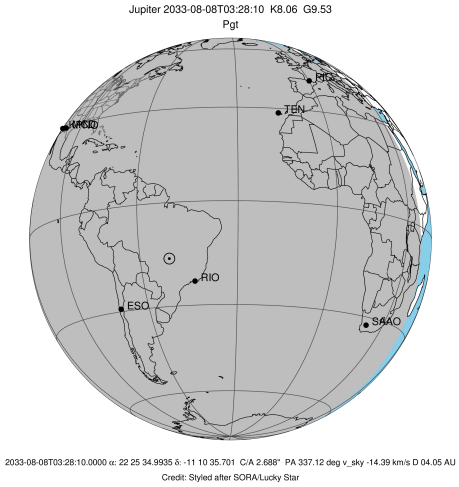


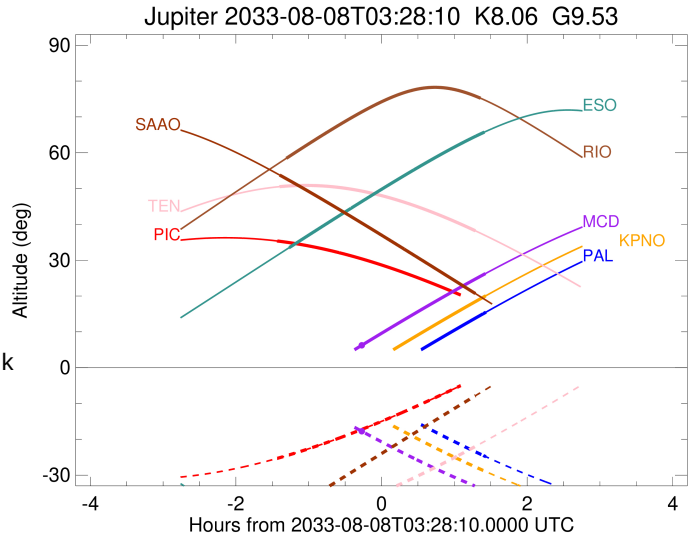
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2033-08-08T02:09:43.282	58.43	-76.69	71492.0	-5.76	-6.58
Jupiter	E	2033-08-08T04:49:47.541	75.20	-62.97	71492.0	-8.33	-9.50

Jupiter_2033-08-08T03_28_10.0000_ESO.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:32:42 2023

target : Jupiter
target radius (km) : 71492.00
C/A epoch : 2033-08-08T03:32:42.900
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 : 2602446578728545920
2Mass ID (if available) : 22253539-1110331
ICRS Star Coord at Epoch: 22h 25m 34.99354s -11:10:35.70079s
RUWE (>1.4 is poor) : 0.99
K magnitude : 8.056
G magnitude : 9.530
RP magnitude : 9.017
BP magnitude : 9.873
DUPflag : 0
Distance (au) : 4.046
f0 (km) : 0.00
g0 (km) : 0.00
skyplane vel. (km/s) : -14.39
Sun-Target sep (deg) : 161.37
Sun-Moon sep (deg) : 53.66
B (ring opening deg) : 1.09
PA of pole (deg) : -23.59
Pole direction: RA (deg): 268.05646
Dec (deg): 64.49663
C/A sky separation (") : 2.928
C/A sky separation (km) : 8592.9
NAIF SPICE kernels : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat440l.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
ura116.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

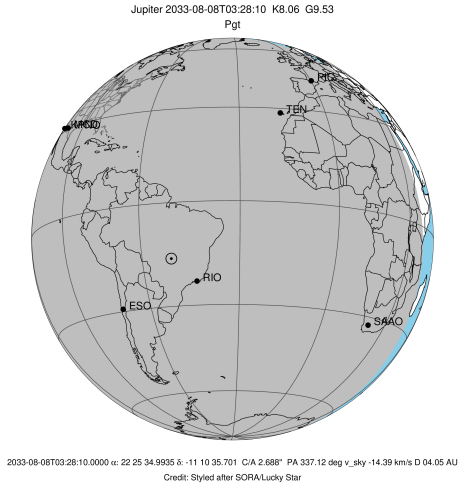




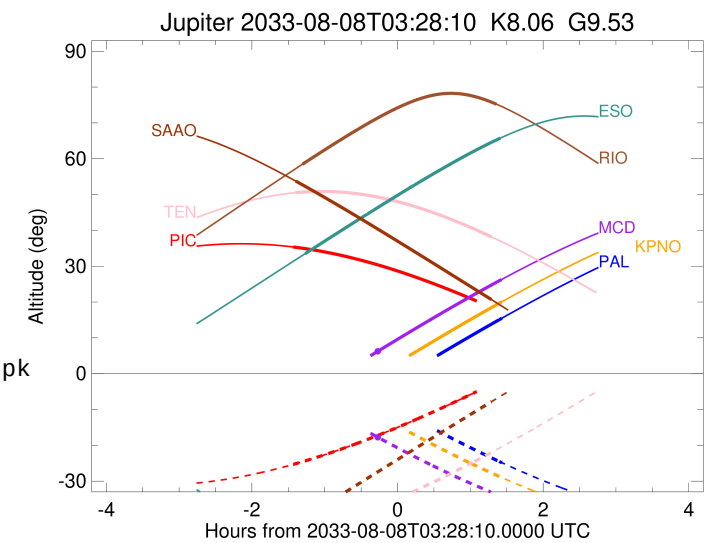
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2033-08-08T02:12:02.144	33.49	-51.80	71492.0	-5.98	-6.83
Jupiter	E	2033-08-08T04:52:57.654	65.75	-76.90	71492.0	-8.03	-9.17

Jupiter_2033-08-08T03_28_10.0000_SAAO.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:36:49 2023




```
target                  : Jupiter
target radius (km)      :  71492.00
C/A epoch               : 2033-08-08T03:24:42.330
Event type              : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code           : SAAO
Location                : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)          : -32.37953
E. Longitude (deg)      :  20.81070
Altitude (km)           :   1.768
Gaia source ID          : 2602446578728545920
2Mass ID (if available) : 22253539-1110331
ICRS Star Coord at Epoch: 22h 25m 34.99354s -11:10:35.70079s
RUWE (>1.4 is poor)     :   0.99
K magnitude             :  8.056
G magnitude             :  9.530
RP magnitude            :  9.017
BP magnitude            :  9.873
DUPflag                 : 0
Distance (au)           :  4.046
f0 (km)                 :       0.00
g0 (km)                 :       0.00
skyplane vel. (km/s)    : -14.39
Sun-Target sep (deg)    :  161.37
Sun-Moon sep (deg)      :   54.20
B (ring opening deg)    :    1.09
PA of pole (deg)        :  -23.59
Pole direction: RA (deg): 268.05646
Dec (deg):  64.49663
C/A sky separation (")  :   4.102
C/A sky separation (km) :  12037.1
NAIF SPICE kernels      : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat440l.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
ura116.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	2033-08-08T02:04:25.785	53.73	-41.67	71492.0	-8.36	-9.53
Jupiter	E	2033-08-08T04:45:31.642	20.68	-7.83	71491.9	-10.93	-12.44