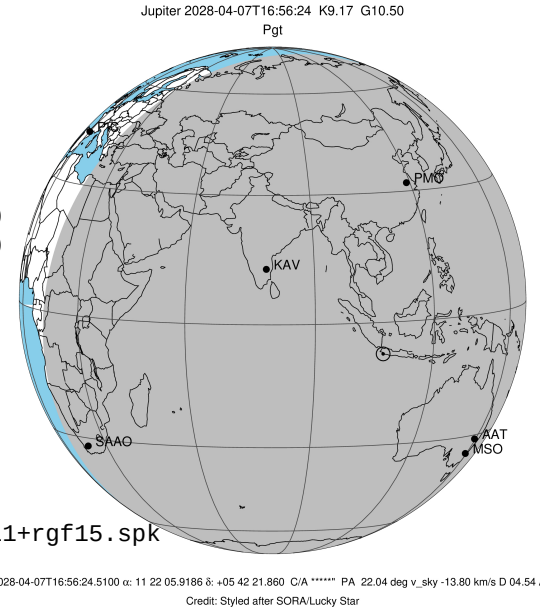
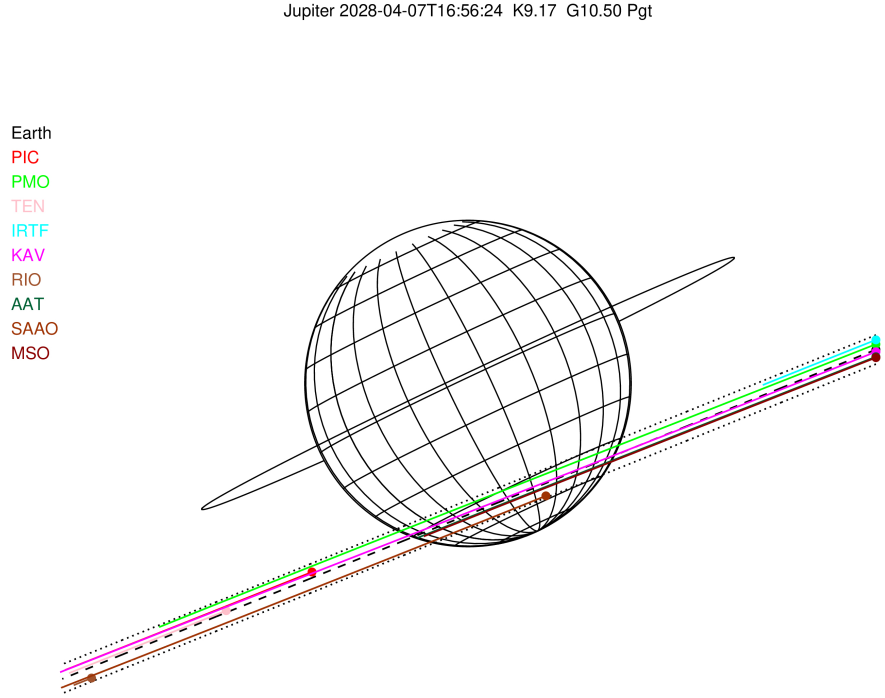
Stellar occultation prediction by rfrench@wellesley.edu Sun Jun 25 08:03:41 2023

target : Jupiter
target radius (km) : 71492.00
C/A epoch : 2028-04-07T16:56:24.510
Event type : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Gaia source ID : 3814337919885051648
2Mass ID (if available) : 11220592+0542228

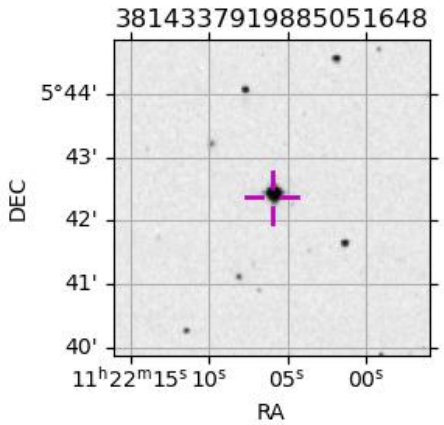
ICRS Star Coord at Epoch: 11h 22m 05.91855s +05:42:21.86033s
RUWE (>1.4 is poor) : 0.85
K magnitude : 9.166
G magnitude : 10.504
RP magnitude : 10.024
BP magnitude : 10.819
DUPflag : 0
Distance (au) : 4.540
f0 (km) : 0.00
g0 (km) : 0.00
skyplane vel. (km/s) : -13.80
Sun-Target sep (deg) : 151.01
Sun-Moon sep (deg) : 7.45
B (ring opening deg) : -1.92
PA of pole (deg) : 25.28
Pole direction: RA (deg): 268.05761
Dec (deg): 64.49661
C/A sky separation (") : 16.183
C/A sky separation (km) : 53283.4
NAIF SPICE kernels : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat440l.bsp





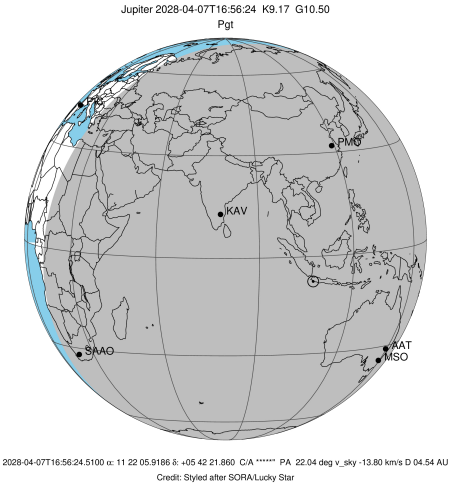
Observable events with sun below -5 deg and altitude above 5 deg

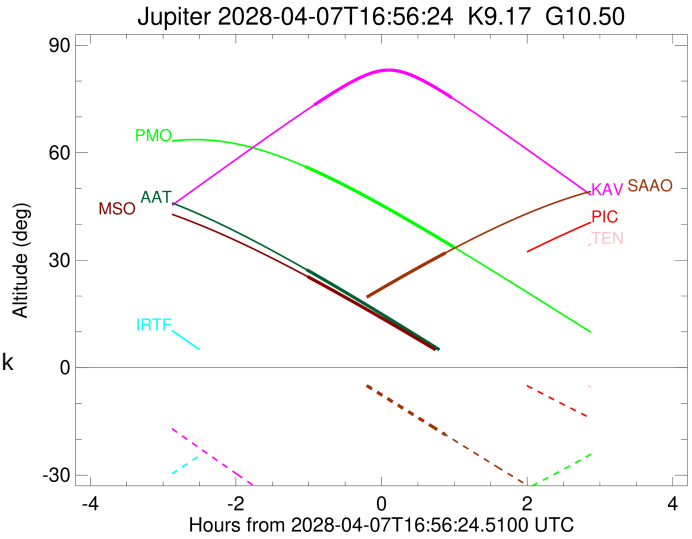
Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	APR 07 15:53 - APR 07 17:56	Pie
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	APR 07 16:00 - APR 07 17:54	Pie
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	+	APR 07 15:54 - APR 07 15:54	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	APR 07 17:49 - APR 07 17:49	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	APR 07 15:55 - APR 07 15:55	Pin



Jupiter_2028-04-07T16_56_24.5100_PMO.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:17:34 2023

target : Jupiter
target radius (km) : 71492.00
C/A epoch : 2028-04-07T16:54:35.640
Event type : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code : PMO
Location : Purple Mtn Obs. Nanking
Latitude (deg) : 32.06667
E. Longitude (deg) : 118.82089
Altitude (km) : 0.364
Gaia source ID : 3814337919885051648
2Mass ID (if available) : 11220592+0542228
ICRS Star Coord at Epoch: 11h 22m 05.91855s +05:42:21.86033s
RUWE (>1.4 is poor) : 0.85
K magnitude : 9.166
G magnitude : 10.504
RP magnitude : 10.024
BP magnitude : 10.819
DUPflag : 0
Distance (au) : 4.540
f0 (km) : 0.00
g0 (km) : 0.00
skyplane vel. (km/s) : -13.80
Sun-Target sep (deg) : 151.01
Sun-Moon sep (deg) : 7.85
B (ring opening deg) : -1.92
PA of pole (deg) : 25.28
Pole direction: RA (deg): 268.05761
Dec (deg): 64.49661
C/A sky separation (") : 14.976
C/A sky separation (km) : 49308.7
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



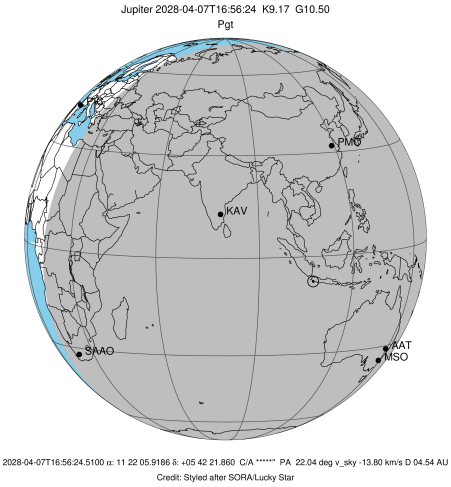


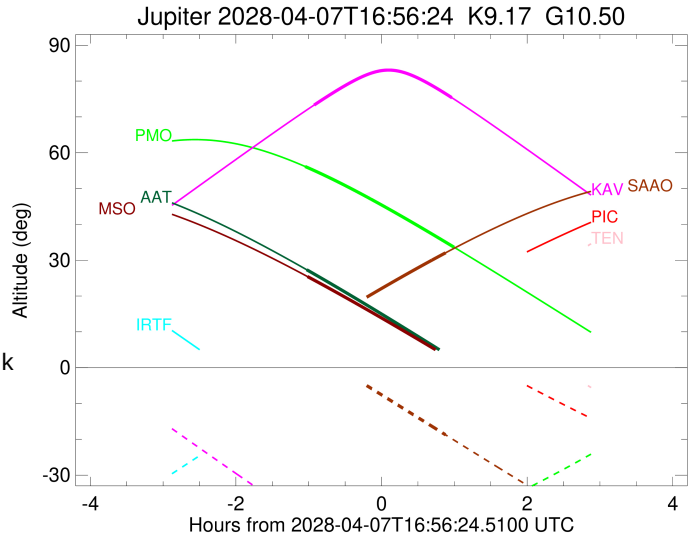
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2028-04-07T15:53:30.144	56.14	-50.78	71489.2	-47.41	-51.07
Jupiter	E	2028-04-07T17:55:59.662	33.66	-42.98	71489.9	-39.81	-43.52

Jupiter_2028-04-07T16_56_24.5100_KAV.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:27:52 2023

target : Jupiter
target radius (km) : 71492.00
C/A epoch : 2028-04-07T16:57:39.430
Event type : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code : KAV
Location : Kavalur Observatory
Latitude (deg) : 12.57556
E. Longitude (deg) : 78.83167
Altitude (km) : 0.722
Gaia source ID : 3814337919885051648
2Mass ID (if available) : 11220592+0542228
ICRS Star Coord at Epoch: 11h 22m 05.91855s +05:42:21.86033s
RUWE (>1.4 is poor) : 0.85
K magnitude : 9.166
G magnitude : 10.504
RP magnitude : 10.024
BP magnitude : 10.819
DUPflag : 0
Distance (au) : 4.540
f0 (km) : 0.00
g0 (km) : 0.00
skyplane vel. (km/s) : -13.80
Sun-Target sep (deg) : 151.01
Sun-Moon sep (deg) : 7.71
B (ring opening deg) : -1.92
PA of pole (deg) : 25.28
Pole direction: RA (deg): 268.05761
Dec (deg): 64.49661
C/A sky separation (") : 15.981
C/A sky separation (km) : 52619.5
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

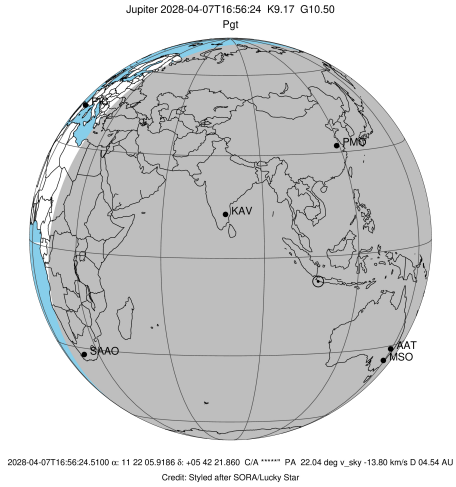




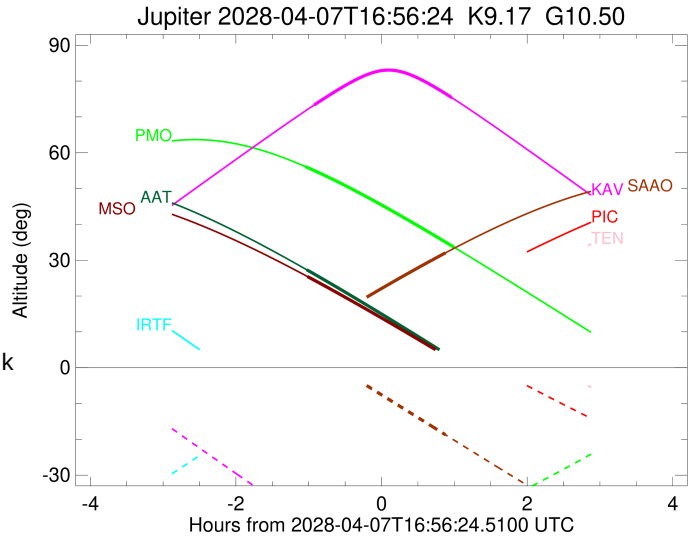
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2028-04-07T16:00:55.657	73.31	-44.37	71488.9	-51.26	-54.80
Jupiter	E	2028-04-07T17:54:25.193	75.35	-66.40	71489.6	-43.42	-47.13

Jupiter_2028-04-07T16_56_24.5100_AAT.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:33:56 2023



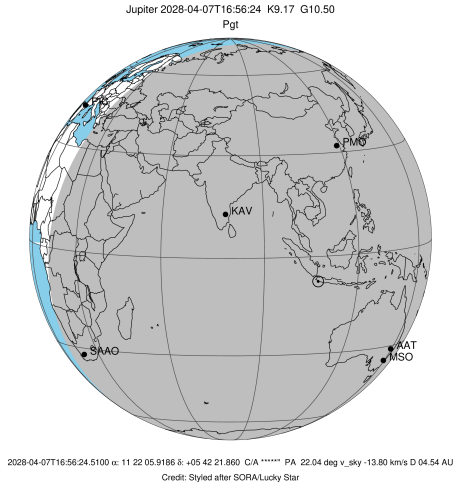

```
target                   : Jupiter
target radius (km)       :  71492.00
C/A epoch                : 2028-04-07T16:49:38.120
Event type               : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code            : AAT
Location                 : Siding Spring (AAT)
Latitude (deg)           : -31.27703
E. Longitude (deg)       : 149.06608
Altitude (km)            :   1.164
Gaia source ID           : 3814337919885051648
2Mass ID (if available) : 11220592+0542228
ICRS Star Coord at Epoch: 11h 22m 05.91855s +05:42:21.86033s
RUWE (>1.4 is poor)      :   0.85
K magnitude              :  9.166
G magnitude              : 10.504
RP magnitude             : 10.024
BP magnitude             : 10.819
DUPflag                  : 0
Distance (au)            :  4.540
f0 (km)                  :       0.00
g0 (km)                  :       0.00
skyplane vel. (km/s)     : -13.80
Sun-Target sep (deg)     :  151.01
Sun-Moon sep (deg)       :    6.74
B (ring opening deg)     :   -1.92
PA of pole (deg)         :   25.28
Pole direction: RA (deg): 268.05761
Dec (deg):  64.49661
C/A sky separation (")   :  16.590
C/A sky separation (km)  :  54624.5
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
```



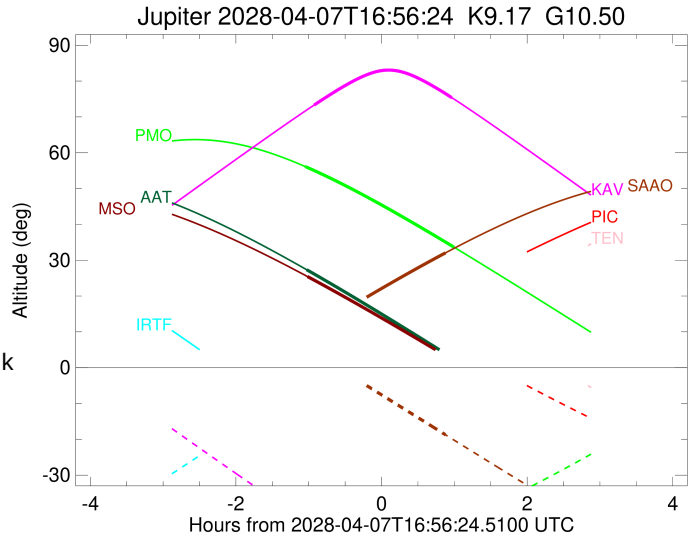
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2028-04-07T15:54:42.795	27.34	-55.07	71488.7	-53.46	-56.91
Jupiter	E	2028-04-07T17:44:54.948	4.84x	-33.67	71489.4	-46.23	-49.92

Jupiter_2028-04-07T16_56_24.5100_SAAO.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:35:59 2023



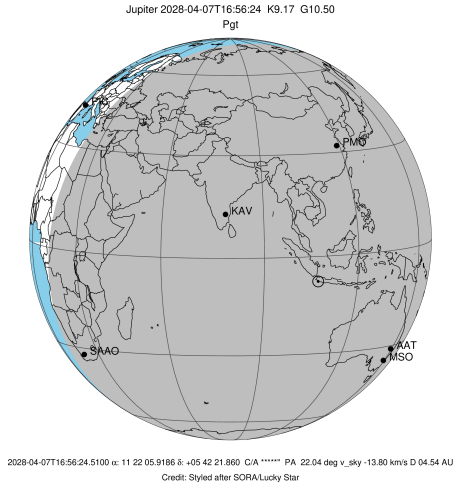

```
target                   : Jupiter
target radius (km)       :  71492.00
C/A epoch                : 2028-04-07T17:00:08.250
Event type               : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code            : SAAO
Location                 : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)           : -32.37953
E. Longitude (deg)       :  20.81070
Altitude (km)            :   1.768
Gaia source ID           : 3814337919885051648
2Mass ID (if available) : 11220592+0542228
ICRS Star Coord at Epoch: 11h 22m 05.91855s +05:42:21.86033s
RUWE (>1.4 is poor)      :   0.85
K magnitude              :  9.166
G magnitude              : 10.504
RP magnitude             : 10.024
BP magnitude             : 10.819
DUPflag                  : 0
Distance (au)            :  4.540
f0 (km)                  :       0.00
g0 (km)                  :       0.00
skyplane vel. (km/s)     : -13.80
Sun-Target sep (deg)     :  151.01
Sun-Moon sep (deg)       :    7.23
B (ring opening deg)     :   -1.92
PA of pole (deg)         :   25.28
Pole direction: RA (deg): 268.05761
Dec (deg):  64.49661
C/A sky separation (")   :  17.736
C/A sky separation (km)  :  58397.7
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
```



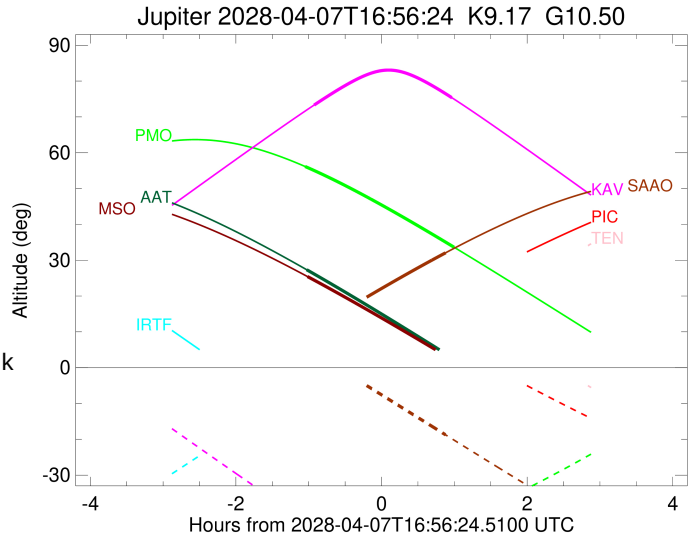
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2028-04-07T16:10:52.647	12.94	1.99x	71488.3	-58.09	-61.28
Jupiter	E	2028-04-07T17:49:11.748	32.06	-18.74	71488.9	-51.23	-54.77

Jupiter_2028-04-07T16_56_24.5100_MSO.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:38:03 2023




```
target                  : Jupiter
target radius (km)      :  71492.00
C/A epoch               : 2028-04-07T16:49:42.610
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          : 3814337919885051648
2Mass ID (if available) : 11220592+0542228
ICRS Star Coord at Epoch: 11h 22m 05.91855s +05:42:21.86033s
RUWE (>1.4 is poor)     :   0.85
K magnitude             :  9.166
G magnitude             : 10.504
RP magnitude            : 10.024
BP magnitude            : 10.819
DUPflag                 : 0
Distance (au)           :  4.540
f0 (km)                 :       0.00
g0 (km)                 :       0.00
skyplane vel. (km/s)    : -13.80
Sun-Target sep (deg)    :  151.01
Sun-Moon sep (deg)      :    6.69
B (ring opening deg)    :   -1.92
PA of pole (deg)        :   25.28
Pole direction: RA (deg): 268.05761
Dec (deg):  64.49661
C/A sky separation (")  :  16.719
C/A sky separation (km) :  55047.4
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	2028-04-07T15:55:21.424	25.44	-52.44	71488.7	-53.97	-57.39
Jupiter	E	2028-04-07T17:44:24.002	4.31x	-32.82	71489.3	-46.77	-50.45