

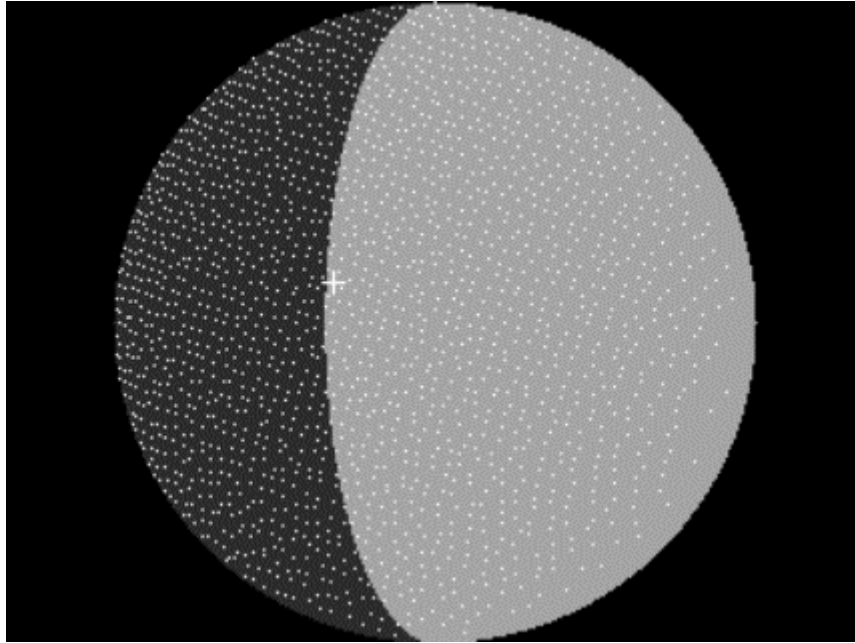
Lunar Meteor Strike Plots Archive

1999-2002

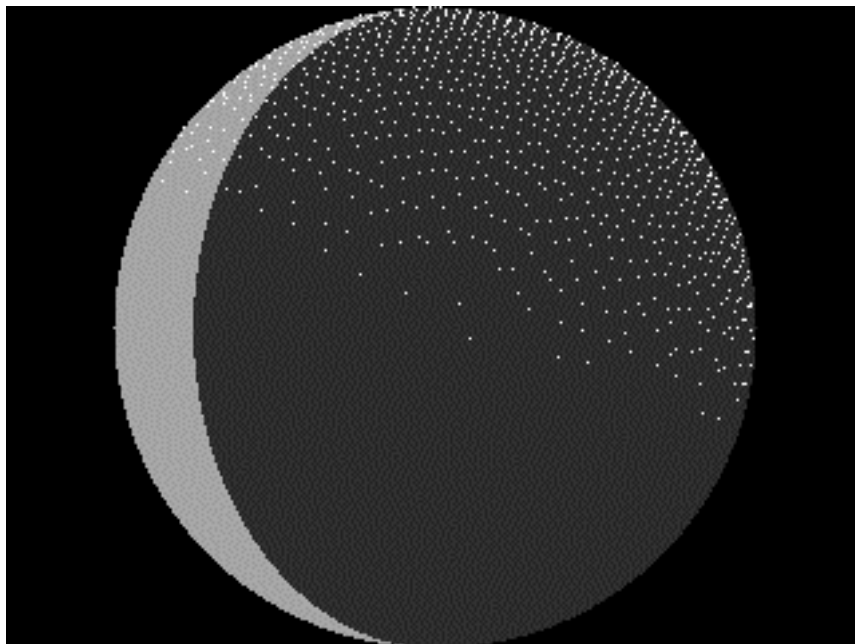
Courtesy of Peter Gural of the Science Applications International Corp.

The following plots show the Moon in its correct phase near the time of maximum meteoroid flux for several meteor streams in 2001. The plot for the 1999 Leonid meteors is presented for comparison. The pinpoints represent the area on the lunar disk visible from Earth that is facing into the oncoming meteoroid stream; the "+" represents the sub-radiant point on the Moon. In many cases, a plot for several nights during the activity of a major stream is presented. A white "+" signifies that this point is on the Earth-facing hemisphere of the moon; a black "+" means that the sub-radiant point is on the hemisphere facing away from the Earth (i.e. the far side of the Moon). Some of the plots show a curved line, which marks the limit of the extent the impacting meteoroids striking the moon as seen from the Earth. The plots assume a meteoroid stream with a uniform particle density, and they are plotted with lunar north up (celestial north varies from the vertical by up to +/- 28 degrees). The approximate time of local moonrise or moonset (with respect to local sunset) is given, along with the percentage of impacts visible from the Earth-facing part of the un-illuminated lunar hemisphere relative to the total number possible. For the first Leonid example, of the entire number of impacts occurring on the hemisphere of the Moon facing into the meteoroid stream, 25% of these are observable from Earth-based telescopes. The gray is the sunlit part of the moon, where impacts are generally regarded as unobservable, due to the brightness of the lunar surface. The universal time and date of the plot are given for this example.

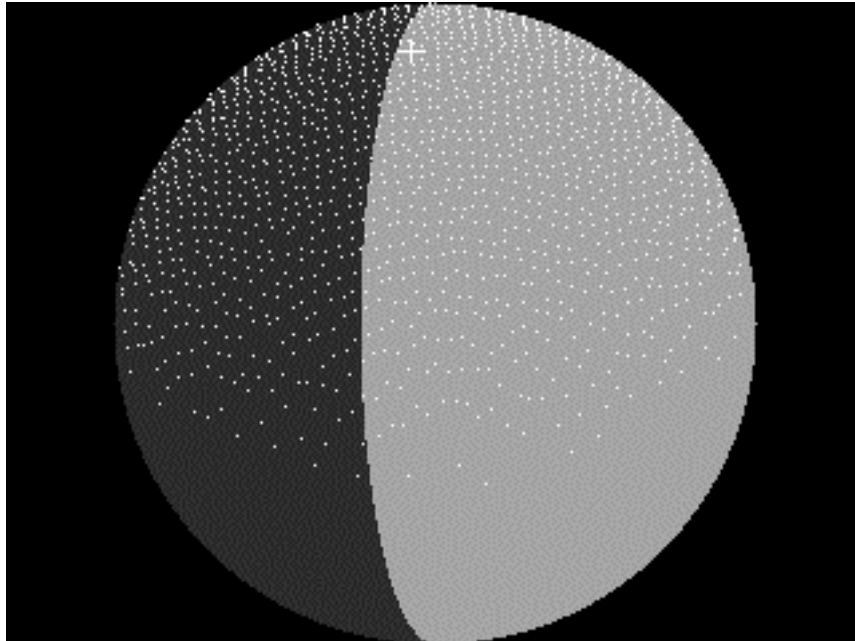
Impact Plots—1999-2001



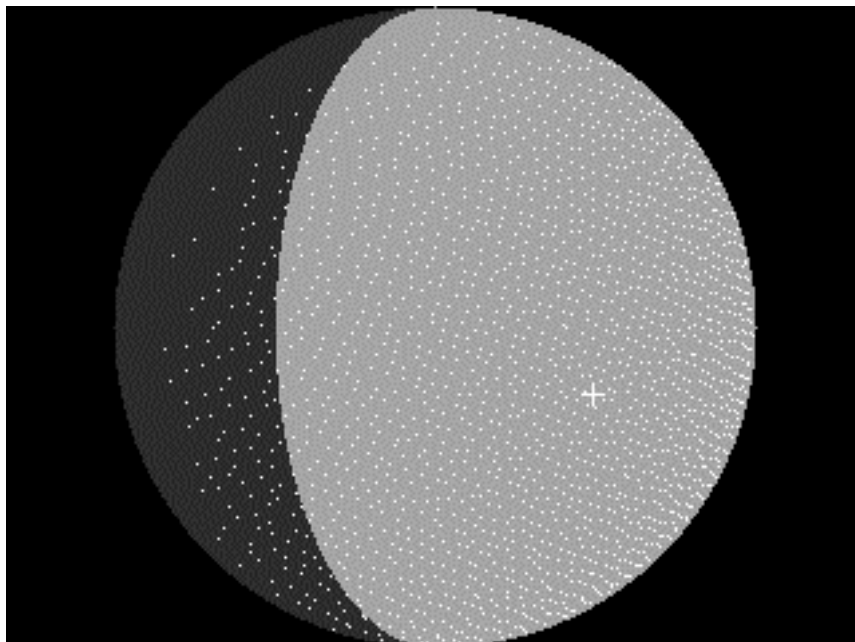
LEO (Leonids): Nov 18, 1999 2 UT
Impacts on dark near side = 25%



URS (Ursids), Dec 22, 2000, Moonrise ~3:10 AM (Sunrise 5:55 AM), local time
at 40 deg. N. Impacts on dark near side = 20%

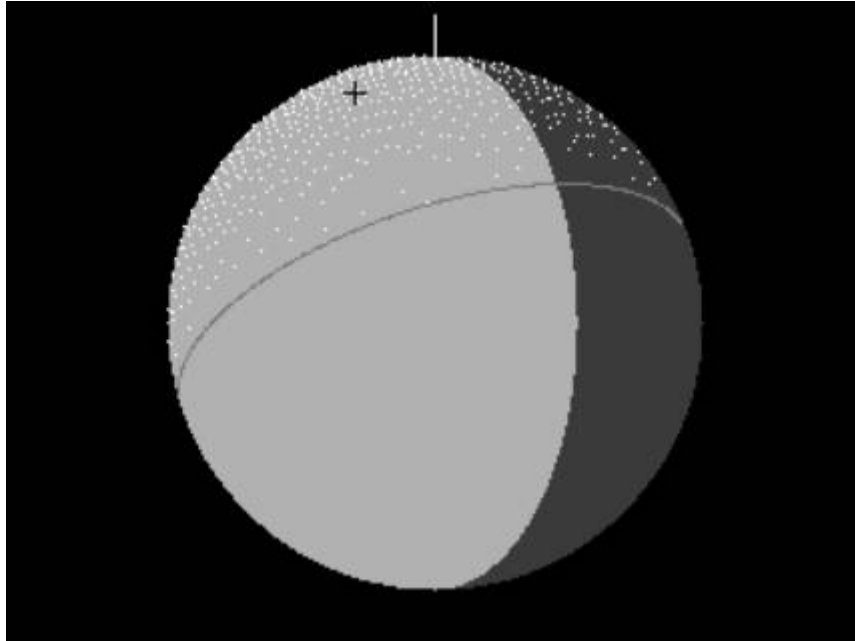


QUA (Quadrantids), Jan 4, 2001, 2 UT, Moonrise ~12:50AM local time
Impacts on dark near side = 17%

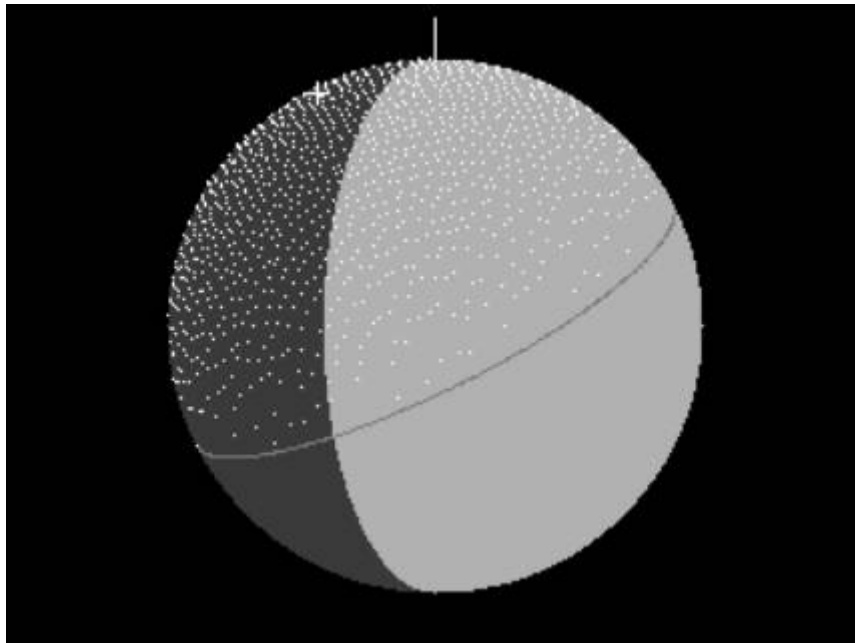


SEX (Sextantids--Daylight shower !!!), Sept 27, 2001, 2 UT, Moonset ~2:05AM
Impacts on dark near side = 2.5%

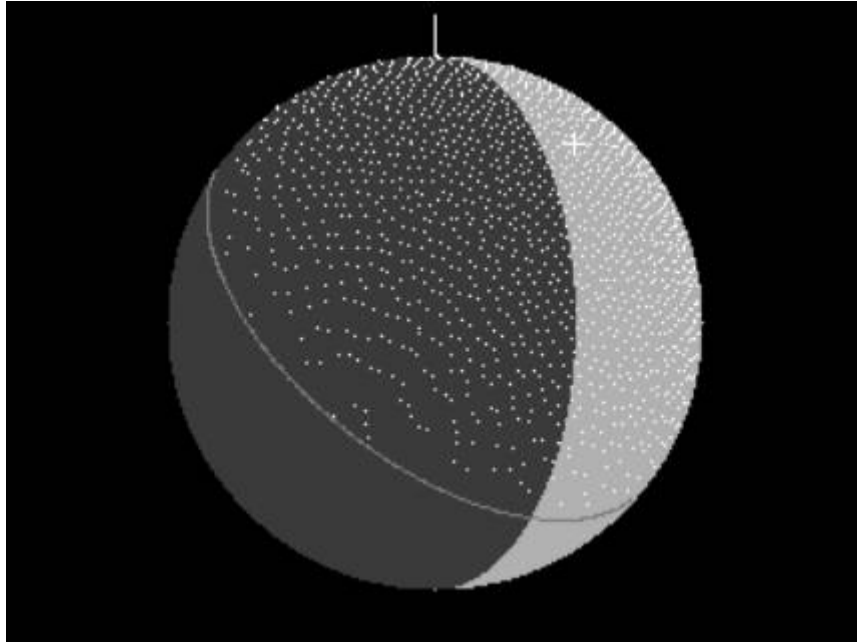
Impact Plots--2002



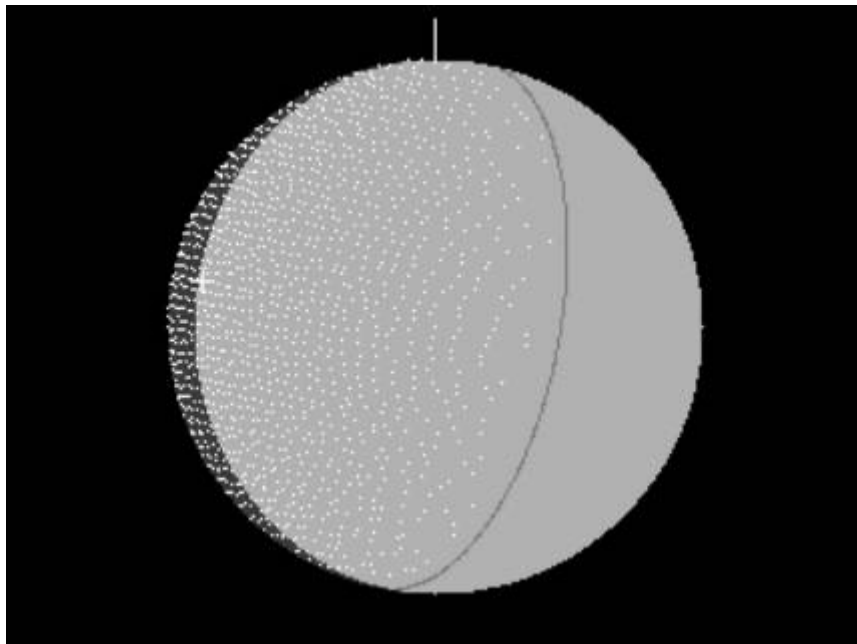
QUA (Quadrantids) Jan 3, 2002, 17:43 UT -1.1 hrs, Moon rises 8.1 hrs before sunrise. ZHR = 120, 5% impacts on unlit near side w/polar graze = 64 deg.



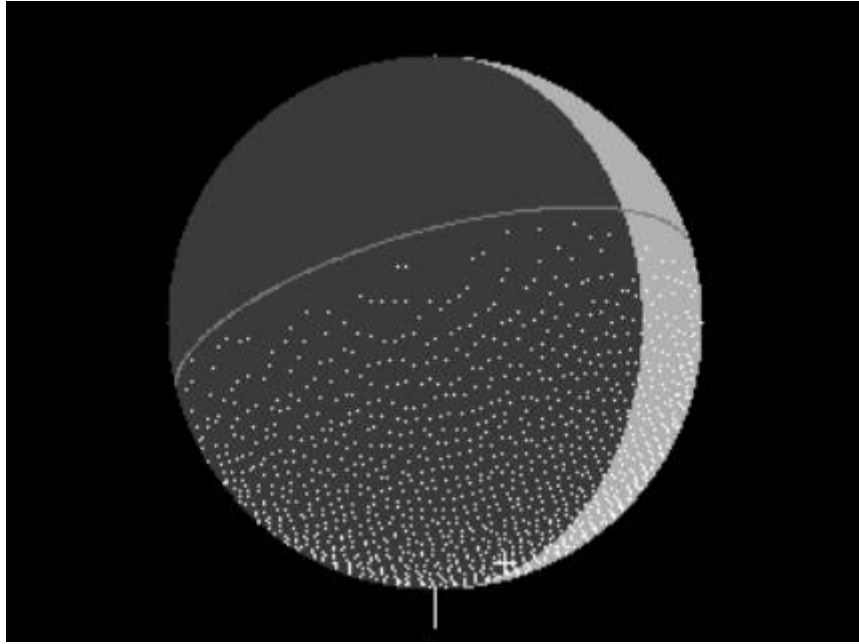
LYR (Lyrids) Apr 22, 2002, 10:18 UT +0.5 hrs, Moon sets 7.6 hrs after sunset
ZHR = 15, 33% impacts on unlit near side w/polar graze = 56 deg



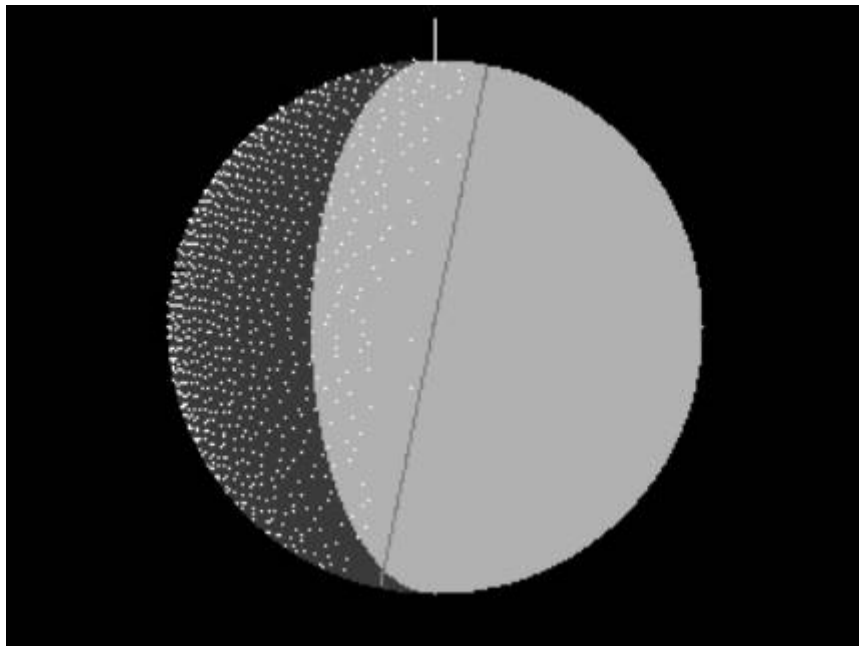
PER (Perseids) Aug 13, 2002, 00:42 UT +1.0 hrs Moon sets 3.9 hrs after sunset
ZHR = 100, 38% impacts on unlit near side w/polar graze = 37 deg



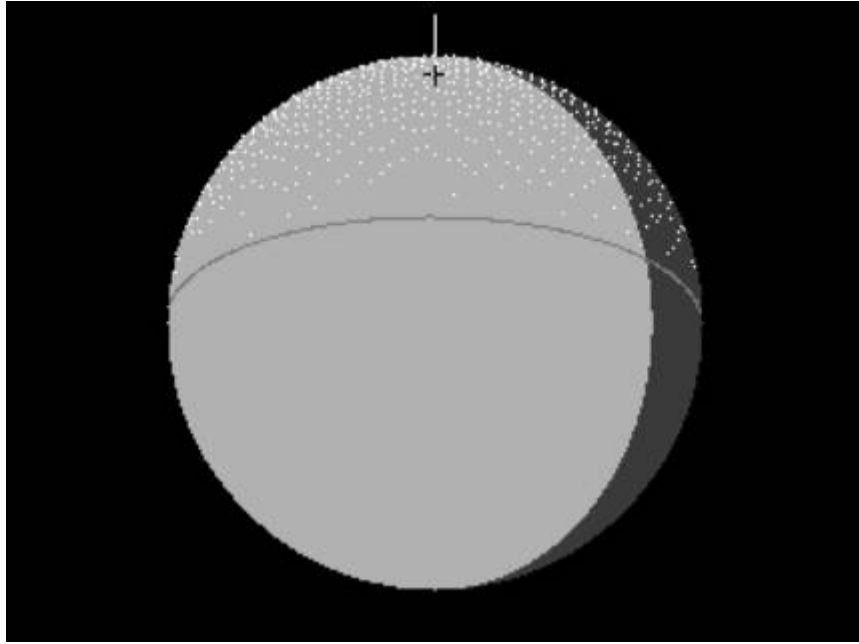
LEO (Leonids) Nov 17, 2002 17:10 UT +0.7 hrs, Moon sets 10.3 hrs after sunset
ZHR = 100, 21% impacts on unlit near side w/polar graze = 11 deg



PUP (Puppids) Dec 7, 2002 07:38 UT +0.9 hrs Moon sets 2.6 hrs after sunset
ZHR = 10 49% impacts on unlit near side w/polar graze = -60 deg



GEM (Geminids) Dec 14, 2002 04:57 UT +0.0 hrs Moon sets 7.8 hrs after sunset
ZHR = 120 43% impacts on unlit near side w/polar graze = 11 deg



URS (Ursids) Dec 22, 2002, 18:05 UT -1.3 hrs, Moon rises 9.6 hrs before sunrise
ZHR = 10, 7% impacts on unlit near side w/polar graze = 72 deg
