

How to see the best meteor showers of 2012: Tools, tips and 'save the dates'

January 2 2012



A Geminid meteor. Image credit: Jimmy Westlake

(PhysOrg.com) -- Whether you're watching from a downtown area or the dark countryside, here are some tips to help you enjoy these celestial shows of shooting stars. Those streaks of light are really caused by tiny specks of comet-stuff hitting Earth's atmosphere at very high speed and disintegrating in flashes of light.

First a word about the moon - it is not the meteor watcher's friend. Light reflecting off a bright moon can be just as detrimental to good meteor

viewing as those bright lights of the big city. There is nothing you can do except howl at the moon, so you'll have to put up with it or wait until the next favorable shower.

The best thing you can do to maximize the number of [meteors](#) you'll see is to get as far away from urban light pollution as possible and find a location with a clear, unclouded view of the night sky. If you enjoy camping, try planning a trip that coincides with dates of one of the meteor showers listed below. Once you get to your viewing location, search for the darkest patch of sky you can find, as meteors can appear anywhere overhead.

The meteors will always travel in a path away from the constellation for which the shower is named. This apparent point of origin is called the "radiant." For example, meteors during a [Leonid meteor shower](#) will appear to originate from the [constellation Leo](#). (Note: the constellation only serves as a helpful guide in the night's sky. The constellation is not the actual source of the meteors. For an overview of what causes [meteor showers](#) click here: [Meteor Showers: Shooting for Shooting Stars](#))

Whether viewing from your front porch or a mountaintop, be sure to dress for success. This means clothing appropriate for cold overnight temperatures, which might include mittens or gloves, and blankets. This will enable you to settle in without having to abandon the meteor-watching because your fingers are starting to turn blue.

Next, bring something comfortable on which to sit or lie down. While Mother Nature can put on a magnificent celestial display, meteor showers rarely approach anything on the scale of a July 4th fireworks show. Plan to be patient and watch for at least half an hour. A reclining chair or ground pad will make it far more comfortable to keep your gaze on the [night sky](#).

Lastly, put away the telescope or binoculars. Using either reduces the amount of sky you can see at one time, lowering the odds that you'll see anything but darkness. Instead, let your eyes hang loose and don't look in any one specific spot. Relaxed eyes will quickly zone in on any movement up above, and you'll be able to spot more meteors. Avoid looking at your cell phone or any other light. Both destroy night vision. If you have to look at something on Earth, use a red light. Some flashlights have handy interchangeable filters. If you don't have one of those, you can always paint the clear filter with red fingernail polish.

These meteor showers provide casual meteor observers with the most bang for their buck. They are the easiest to observe and most active. Be sure to also check the "Related Links" box in the right margin for additional information, and for tools to help you determine how many meteors may be visible from your part of the world.

Major Meteor Showers (2012)

Quadrantids

Comet of Origin: 2003 EH1

Radiant: constellation Bootes

Active: Dec. 28, 2011-Jan. 12, 2012

Peak Activity: Jan. 4, 2012

Peak Activity Meteor Count: 120 meteors per hour

Meteor Velocity: 25.5 miles (41 kilometers) per second

Notes: A waxing gibbous moon will set at about 3 a.m. local time, allowing for several dark-sky hours of observing before dawn. This shower has a very sharp peak, usually only lasting a few hours, and is often obscured by winter weather. The alternate name for the Quadrantids is the Bootids. Constellation Quadrant Murales is now defunct, and the meteors appear to radiate from the modern constellation

Bootes.

Lyrids

Comet of Origin: C/1861 G1 Thatcher

Radiant: constellation Lyra

Active: April 16-25, 2012

Peak Activity: April 21-22, 2012

Peak Activity Meteor Count: 10-20 meteors per hour

Meteor Velocity: 30 miles (49 kilometers) per second

Notes: A new moon on April 21 guarantees a dark sky in the late night and early morning hours, making this year ideal for observing from 10 p.m. to dawn. Lyrid meteors often produce luminous dust trains observable for several seconds.

Eta Aquarids

Comet of Origin: 1P Halley

Radiant: constellation Aquarius

Active: April 19-May 28, 2012

Peak Activity: May 5-6, 2012

Peak Activity Meteor Count: 10 meteors per hour

Meteor Velocity: 44 miles (66 kilometers) per second

Note: While the shower peaks an hour or two before dawn, the year's closest and largest full moon will be out all night, resulting in a moonlit sky that will wash out all but the brightest meteors. Meteor watchers in the Southern Hemisphere stand the best chance of seeing any meteors.

Delta Aquarids

Comet of Origin: unknown, 96P Machholz suspected

Radiant: constellation Aquarius

Active: July 12-Aug. 23, 2012

Peak Activity: July 28-29, 2012

Peak Activity Meteor Count: Approximately 20 meteors per hour

Meteor Velocity: 25 miles (41 kilometers) per second

Notes: It's not a good year for the Delta Aquarids -- light from the August full moon make them nearly impossible to see.

Perseids

Comet of Origin: 109P/Swift-Tuttle

Radiant: constellation Perseus

Active: July 17-Aug. 24, 2012

Peak Activity: Aug. 12, 2012

Peak Activity Meteor Count: Approximately 100 meteors per hour

Meteor Velocity: 37 miles (59 kilometers) per second

Notes: Moonlight won't be as big a problem as last year, as its waning crescent won't rise until after midnight, and the shower peaks from about 10-11 p.m. local on the night of Aug. 12.

Orionids

Comet of Origin: 1P/Halley

Radiant: Just to the north of constellation Orion's bright star Betelgeuse

Active: Oct. 2-Nov. 7, 2012

Peak Activity: Oct. 21, 2012

Peak Activity Meteor Count: Approximately 25 meteors per hour

Meteor Velocity: 41 miles (66 kilometers) per second

Note: With the second-fastest entry velocity of the annual meteor showers, meteors from the Orionids produce yellow and green colors and have been known to produce an odd fireball from time to time.

Leonids

Comet of Origin: 55P/Tempel-Tuttle

Radiant: constellation Leo

Active: Nov. 6-30, 2012

Peak Activity: Night of Nov. 17, 2012

Peak Activity Meteor Count: Approximately 15 per hour

Meteor Velocity: 44 miles (71 kilometers) per second

Note: The Leonids have not only produced some of the best meteor showers in history, but they have sometimes achieved the status of meteor storm. During a Leonid meteor storm, many thousands of meteors per hour can shoot across the sky. Scientists believe these storms recur in cycles of about 33 years, though the reason is unknown. The last documented Leonid meteor storm occurred in 2002.

Geminids

Comet of Origin: 3200 Phaethon

Radiant: constellation Gemini

Active: Dec. 4-17, 2012

Peak Activity: Dec. 13-14, 2012

Peak Activity Meteor Count: Approximately 120 meteors per hour

Meteor Velocity: 22 miles (35 kilometers) per second

Note: The Geminids are typically one of the best, and most reliable, of the annual meteor showers. This year's peak falls perfectly with a new moon, guaranteeing a dark sky for the show in the nights on either side

of the peak date. This shower is considered one of the best opportunities for younger viewers because the show gets going around 9 or 10 p.m.

Provided by JPL/NASA

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