

Moon-free Geminids

A fine year for meteor showers has a final hurrah.

This has been an optimal year for meteor watching with basically moon-free skies for each of the major showers — the Lyrids, Perseids, Orionids, and now the Geminids. This display, which derives from dust shed from the asteroid 3200 Phaethon, is active through mid-month and **peaks on the night of December 13–14**. It's the strongest display of the year, and you can expect more than 100 Geminids per hour under a dark and *moonless* sky. No problem there — the razor-thin lunar crescent sets in early evening twilight.

One of the shower's distinct advantages compared to other major displays is that the radiant, located near Castor in Gemini, stands nearly 30° high in the east-northeast by 9 p.m. local time. That means you can watch at least part of the display and still manage to get to bed at a decent hour. And by timing your meteor watch for the evening hours, you also avoid the chilliest temperatures a December night can produce, which typically occur in the hour or so before dawn.

However, the shower really is at its best in the predawn hours when the radiant is highest in the sky. For that reason, some meteor-watchers prefer to catch an after-dinner nap so they can begin their viewing session at midnight when activity starts to pick up. Not only does a vertiginous radiant mean fewer meteors get eclipsed by the horizon, but after midnight Earth faces *into* the direction of its orbital motion and meteoroids slam headlong into the atmosphere, increasing both their speed and number.



▲ More than 50 meteors, including a spectacular fireball, flare over the Xinglong Observatory in China's Hebei Province in this composite image captured by Steed Yu during the December 2015 Geminid meteor shower. The Geminids are one of the most reliable meteor showers and the richest with more than 100 meteors visible per hour at maximum from pristine skies.

If you want a Geminid warm-up, head out on the morning of December 12th when you might see a few slow-moving meteors from Comet 46P/Wirtanen. The so-called Wirtanen meteors reach their peak around 11:20 UT (6:20

a.m. EST) and appear to radiate from two different locations — one in southern Sculptor, some 4½° north of Alpha (α) Phoenicis, and another between Alpha Pegasi and Beta (β) Piscium.

Bundle up and enjoy the show(s)!

