

Percy in the Sky with Diamonds: The Perseids Meteor Shower

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As astronomers and astronomy lovers alike can attest, The Perseids are always impressive. The Perseids Meteor Shower is notorious for being the most popular meteor shower in history, occurring every summer in July and August. The shower itself is the product of the comet Swift-Tuttle, which zips around the sun once every 133 years. As the Earth passes through the cloud of the comet Swift-Tuttle's dust each summer, a cloud of bits of ice and dust pass into earth's atmosphere and burn up. Combined with summer weather, the product is always the best meteor showers of the year.

This summer was no different. The meteor shower lasted from July 23 to August 22—peaking on August 11. As astronomer and professor Leonardo Martinez explains in his renowned book, *My First Encounter with Astronomy*, the Perseids are one of modern man's oldest and most consistent friends. The Perseids have been observed for at least the past 2,000 years, though some astronomers believe man has been watching them for as long as man has dwelled in the Northern Hemisphere.

This legendary meteor shower received its name from the constellation from which it radiates: Perseus. In Greek Mythology, Perseus was the hero who sleighed the Gorgon Medusa and then used Medusa's head to rescue Andromeda from a sea monster (Edith Hamilton has a captivating rendition of it in her novel, *Mythology*). Back to the science though—the constellation Perseus was named as such by the Greek astronomer, Ptolemy, and is still considered a reputable constellation well into the 21st century. The meteor shower radiates from its namesake constellation.

According to scientific historians, the earliest records of the Perseids come from the Chinese cannons, but the showers are also mentioned by Japanese, Korean, Italian, and Belgium astronomers from as early as the first century, CE. Major scientific breakthroughs regarding the Perseids started in the nineteenth century when astronomer E. Heis Münster recorded the hourly rate per meteor. In summer 1839, he noticed the shower and began studying it. He calculated the hourly rate per meteor to be 160 meteors per hour.

In 1864, the Perseids became, once more, a popular topic of study. The Italian astronomer, G. V. Schiaparelli, began calculating the orbits of the Perseids. He finally succeeded in 1866 and his calculations assisted astronomers well into the 1970s.

What he noted was that the Perseid radiant turns out to be quite complex. According to American amateur astronomer and writer, Gary Kronk, “the main radiant is situated near the star Eta Persei, but other radiants appear to be active at the same time.” He continues by citing the research of the British astronomer, W. F. Denning. Denning “detected the existence of two other simultaneous showers from Chi and Gamma Persei.” This was revolutionary because it suggests that the Perseid shower is connected to another two meteor showers, providing evidence that the universe has ripple effects.

One rather remarkable characteristic of the Perseids is that there are times when larger, brighter meteors are much more plentiful than smaller, fainter meteors. This explains why the shower peaks on different days each year. For example, this year the shower peaked on August 11, but last year it peaked on August 13. The rate at which larger, brighter meteors reach the atmosphere determines the shower’s peak. According to Kronk, “some of this is most likely due to the Earth encountering filaments of material representing different directions that comet Swift-Tuttle moved in during the last 2000 years.”

For all those enthralled by the falling skies above and hoping to connect with the generations of humans who gazed up at the stars before we did, the next meteor shower is the Orionids on October 21. For students interested in learning more about astronomy, join the New York City Amateur Astronomers Association on any Thursday night at one of the city’s free parks. Check out <http://www.aaa.org/home> for viewing schedule or contact Miriam Barth at Miriam.barth@mail.yu.edu for more details.