The Night Sky

The Night Sky, written by astronomers from the East Tennessee State University Department of Physics and Astronomy, appears on the last Sunday of the month previewing upcoming events for East Tennessee sky watchers.

As May approaches, the warmer weather is an invitation to experience the wonders of the night sky. Early this month, the intrepid viewer will be rewarded by the bright sparks of the Eta Aquarids meteor shower.

Meteors, or shooting stars, can actually happen at any time. Though we say that outer space is a vacuum, there is still matter that floats between the stars and planets. That matter comes in many sizes: from specks the size of dust, to grains the size of sand, to rocks, and even larger. The larger the object, the more rare it is. Lucky for life on Earth, objects like the one that killed the dinosaurs are vanishingly rare. But smaller objects come frequently, and you are likely to see one arrive on any night of the year, if you look long enough.

A meteor is produced when an object from space (a meteoroid) strikes the Earth's atmosphere. The Earth moves quickly through space as it orbits the Sun (approximately 67,000 miles per hour) and the friction of the particle colliding with air will burn both the meteoroid and the air. The result is a path of burning light across the sky, typically only a few feet wide but 12 *miles* long. Usually the meteoroid is vaporized, "burned up," in the process. A few will break up and explode, creating a fireball.

Larger meteoroids, the rare ones the size of rocks, may survive the fall and impact on the Earth. Once they reach ground, they are called meteorites. Meteorites can be of great scientific value, in addition to their monetary value to collectors. A meteorite belongs to the person who owns the land it is found on. A freshly fallen meteoroid may create an impact crater, but in general meteorites are difficult to identify correctly. There are several web sites that give some of the usual characteristics of meteorites, but only an expert and certain scientific tests can actually tell you for sure if you have one. Once a meteorite is verified, it can be listed with the Meteoritical Society, and either sold or donated for scientific study.

However rare it is to find a meteorite, you are likely to be able to *see* a meteor, or many, early this month, as the Earth passes through debris the size of dust grains left by Halley's Comet. This meteor shower, the Eta Aquarids, will last from the 5th to the 7th, but is expected to peak before dawn on the 6th with 10-15 meteors per hour, centered near the East. The full moon won't be until the 17th, so the young crescent moon on the 6th will give us a dark sky for good viewing.

The ETSU Powell Observatory open houses are on hiatus for the summer. They will resume in the fall.

This month's Night Sky was written by Dr. Tabetha Hole, Postdoctoral Research Fellow at the Department of Physics and Astronomy. She can be reached at holekt@etsu.edu. Astronomy-related information for the public, including a link to the ETSU astronomy open houses, can be found at http://www.etsu.edu/physics/astronomy.htm.