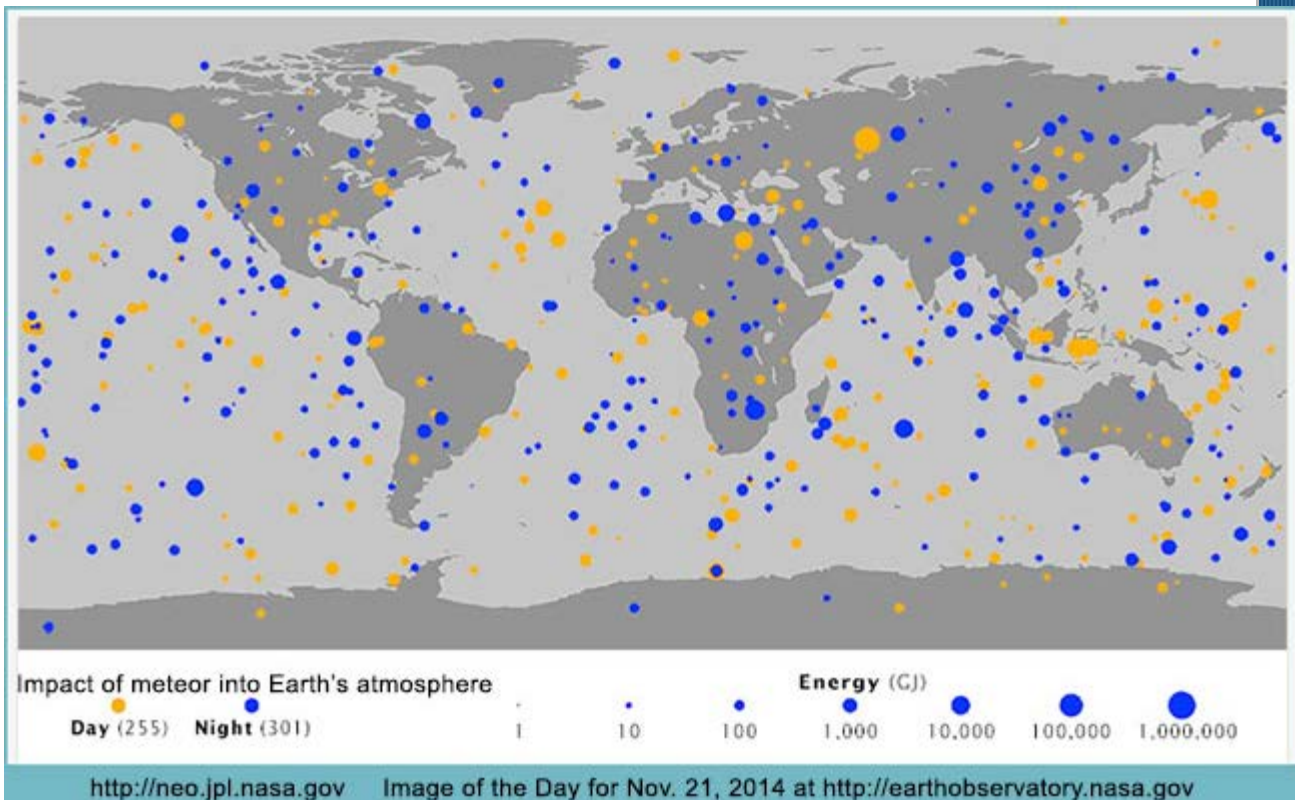


Tracking Asteroids—Watching the Sky—Searching for Meteorites

Tracking asteroids and meteoroids in interplanetary space, following streaking meteors, and analyzing the meteorites that land— all contribute to our better understanding of our Solar System. Here are some resources to help you see what's happening. A new map released November, 2014 by NASA's Near-Earth Object (NEO) observation program shows the global distribution of small asteroid strikes in Earth's atmosphere over a 20-year period (see map).



Global map showing the impacts in Earth's atmosphere of small asteroids (aka meteors, bolides), ranging in size from one meter to almost 20 meters, based on data gathered from 1994-2013. Gold points show locations of daytime impacts; blue points are locations of nighttime impacts. The sizes of the points are proportional to the optical radiated energy of impacts measured in billion of Joules (GJ) of energy.

When an asteroid impacts our atmosphere and breaks apart, the bright ***meteors***, also called bolides or fireballs, are tracked by a variety of sensors/telescopes dedicated to the task. Most of the 1 to 20-meter-sized meteors plotted on the map, as well as the daily 100 tons of extraterrestrial dust and sand-size particles coming in, disintegrate in the atmosphere but it's good to keep an eye on the sky. NASA's Near Earth Object (***NEO***) observations program finds, tracks, and characterizes potentially hazardous asteroids and comets orbiting within approximately 50 million kilometers of Earth's orbit about the Sun. The NEO website lists several current ***telescopic search programs and related surveys***. Another program of note is ***ATLAS***, the Asteroid Terrestrial-impact Last Alert System, organized by astronomers and engineers from the University of Hawai'i and the Space Telescope Science Institute. It is a

NASA-funded asteroid impact early warning system utilizing telescopes on Hawai'i and Maui.

Additionally, [NASA's All Sky Fireball Network](#) uses video cameras (primarily in the eastern U.S.) equipped for whole-night-sky imaging. Another automated night-sky video surveillance program, [CAMS](#), is run out of NASA Ames Research Center. Both programs welcome new participants.

For the interested meteor spotter, a new iOS/Android app, [Fireballs in the Sky](#), provides a great way to report meteor sightings and become involved with the Desert Fireball Network, a project of Curtin University, Australia.

PSRD covers science about asteroids and near-Earth objects, especially the remarkable meteorites that eventually fall to Earth. This month marks the start of the new season for the Antarctic Search for Meteorites Program (ANSMET), which you can follow through their [ANSMET blog](#) hosted at Case Western Reserve University. Check out [NASA's Astromaterials Acquisition and Curation Office](#) for more information about how the samples are curated and distributed for analysis. And don't miss the [PSRD General Resources](#) page for all sorts of links to keep you connected with space sciences.

See:

- Billings, L. and NASA/JPL Near-Earth Object Program Office (November 2014) [Newly Released Map Data Shows Frequency of Small Asteroid Impacts, Provides Clues on Larger Asteroid Population](#), NASA Near Earth Object Program. neo.jpl.nasa.gov/news/news186.html.

See also **PSRD** articles:

- World Notice: 10,000 Near-Earth objects and Details About One That Landed In Russia. (November 2013) *Planetary Science Research Discoveries*. <http://www.psrд.hawaii.edu/CosmoSparks/Nov13/NEO-watch.html>
- The Surprise Meteorite Fall in Russia, February, 2013. (February 2013) *Planetary Science Research Discoveries*. <http://www.psrд.hawaii.edu/CosmoSparks/Feb13/Chelyabinsk.html>
- Asteroid Tracked—Meteorites found! (December 2010) *Planetary Science Research Discoveries*. http://www.psrд.hawaii.edu/CosmoSparks/Dec10/Almahata_Sitta.html
- Looking After and Preserving NASA's Extraterrestrial Samples. (June 2011) *Planetary Science Research Discoveries*. <http://www.psrд.hawaii.edu/CosmoSparks/June11/NASAsamples.html>
- Martel, L. M. V. (2010) Asteroid, Meteor, Meteorite. *Planetary Science Research Discoveries*. <http://www.psrд.hawaii.edu/April10/AlmahataSitta.html>
- Martel, L. M. V. (2004) Meteorite Shower in Park Forest, Illinois. *Planetary Science Research Discoveries*. <http://www.psrд.hawaii.edu/Aug04/ParkForest.html>

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November 2014

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