

## World Notice: 10,000 Near-Earth Objects and Details About One That Landed in Russia

In the summer of 2013 NASA announced that more than 10,000 **asteroids** and **comets** that can pass near Earth have been found (see the [News Release](#)).



International space agencies and their research and observatory partners, are actively tracking near-Earth objects (NEOs) and are involved in assessments of risk and mitigation. The potential for local, regional, and global consequences of the impacts of NEOs is receiving attention from the United Nations.

As early as 1995 the UN Office for Outer Space Affairs organized an international conference on NEOs in New York City to brief Member States about potential threats and outcomes. In 2001 the UN established the Action Team on NEOs, with the mandate "to review ongoing efforts in the field of NEOs, identify gaps that could be filled by coordination and propose steps for such coordination in collaboration with specialized bodies," according to their posted document "[Threat of Space Objects Demands International Coordination, UN Team Says](#)." In response to the February 15, 2013 Chelyabinsk meteoroid airburst and meteorite fall (see the PSRD CosmoSparks report: [The Surprise Meteorite Fall in Russia](#)), this UN Action Team recommended the formation of an International Asteroid Warning Network, which according to news reports, is expected to be approved in December 2013 by the UN General Assembly. Identifying, mapping, and predicting the orbital patterns of NEOs by coordinating the efforts of worldwide astronomical observatories will be a high priority for the Network.

International coalitions of scientists have, of course, already been busy studying the Chelyabinsk event and they have published, this week, the first three papers detailing the event, which is considered the largest recorded meteoroid airburst in 105 years (since the 1908 Tunguska event). The work shows the benefit of cosmochemists working with multidisciplinary teams of astronomers and geoscientists to study NEOs and the consequences of their impacts.

See:

- Borovicka, J., Spurný, P., Brown, P., Wiegert, P., Kalenda, P., Clark, D., and Shrubny, L. (2013) The Trajectory, Structure and Origin of the Chelyabinsk Asteroidal Impactor, *Nature*, v. 503, p. 235-237, doi: 10.1038/nature12671. [ [abstract](#) ]
- Brown, P. G. and 32 others (2013) A 500-kiloton Airburst over Chelyabinsk and an Enhanced Hazard From Small Impactors, *Nature* v. 503, p. 238-241, doi: 10.1038/nature12741. [ [abstract](#) ]
- Popova, O. P. and 58 others including the Chelyabinsk Airburst Consortium (2013) Chelyabinsk Airburst, Damage Assessment, Meteorite Recovery, and Characterization, *Science Express*, doi: 10.1126/science.1242642. [ [abstract](#) ]

See also:

- [Palermo Technical Impact Hazard Scale](#). Definition provided by NASA's Near Earth Object Program.
- Reference: Chesley, S. R., Chodas, P. W., Milani, A., Valsecchi, G. B., and Yeomans, D. K. (2002) Quantifying the Risk Posed by Potential Earth Impacts, *Icarus*, v. 159, p. 423-432. [ [abstract](#) ]
- [Torino Impact Hazard Scale](#). Definition provided by NASA's Near Earth Object Program.

Reference: Morrison, D., Chapman, C. R., Steel, D., and Binzel R. P. (2004) Impacts and the Public: Communicating the Nature of the Impact Hazard" In *Mitigation of Hazardous Comets and Asteroids*, (M.J.S. Belton, T.H. Morgan, N.H. Samarasinha and D.K. Yeomans, Editors), Cambridge University Press, 438 p.

- Chang, D. (November, 2013) More Asteroid Strikes Are Likely, Scientists Say, [The New York Times report](#).
- Threat of Space Objects Demands International Coordination, UN Team Says, [UN News Centre](#).
- Yu, A. (November, 2013) Space Agencies of the World, Unite: The U.N.'s Asteroid Defense Plan, [National Public Radio news report](#).

Related **PSRD** article:

- [The Surprise Meteorite Fall in Russia](#).

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