

PDC April 2015 - Frascati Italy

Orbit parameters assumption from threat assessment simulation:

Inclination to ecliptic: 5.35 degrees

Eccentricity: 0.49

Semi-major axis: 1.77 au

Impact point located at Earth's aphelion (July 4) rather than September 3, 2022

Impact at the ascending node

No moon or planets (besides Earth)

----- Forwarded message ----- From: 2015 IAA Planetary Defense Conference
<iaapdc@iaamail.org> To: IAA Office <office@iaamail.org> Cc: Date: Fri, 19 Dec 2014
08:30:04 -0700 Subject: HYPOTHETICAL ASTEROID IMPACT EXERCISE POSED FOR
IAA PLANETARY DEFENSE CONFERENCE

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HYPOTHETICAL ASTEROID IMPACT EXERCISE POSED FOR IAA PLANETARY DEFENSE CONFERENCE

NASA has posted initial details of a threat to Earth posed by a fictitious asteroid. This simulated threat will be the subject of a tabletop exercise at the 2015 IAA Planetary Defense Conference being held April 13-17, 2015, in Frascati, Italy, and is representative of what a real threatening asteroid scenario could look like. Details are available at <http://neo.jpl.nasa.gov/pdc15> and are being published to encourage researchers and disaster response experts to use this simulated threat as the subject for research and for discussion at the conference.

The fictitious object is an asteroid that would be discovered on April 13, 2015, the first day of the conference. When the object is first discovered, its trajectory would not be well known, and we would believe it to have only a small chance of impacting our planet seven years in the future, on September 3, 2022. After two months of tracking the asteroid, our knowledge of its orbit would improve, and our computed chance of Earth impact would rise, reaching about 1% (1 chance in 100). In this simulated scenario, the possible impact locations on Earth's surface are located along a long, thin risk corridor that extends around the globe.

According to the exercise scenario, astronomers in Hawaii would discover the asteroid, and uncertainties in the object's size and impact location when it is discovered are based on a limited number of observations and assumptions of how much sunlight is being reflected by the

asteroid. Estimates would improve as additional data is collected, and conference attendees will be presented updates during the meeting to simulate how an actual threat scenario could evolve.

Impact of an object in this size range (100 to 500 m) in the wrong place on Earth could destroy cities, do serious damage to the surrounding area, cause a very damaging tsunami if it were an ocean impact, and potentially affect the weather regionally and globally.

Conference attendees will be considering potential responses to this simulated threat, including deflecting the object away from Earth and engaging in disaster response and management to mitigate the effects on Earth should deflection not be successful.

The 2015 International Academy of Astronautics (IAA) Planetary Defense Conference will be held on April 13-17, 2015, in Frascati, Italy. Details on the conference are available at <http://www.pdc2015.org>.

Contacts:

William Ailor, William.h.ailor@aero.org

Richard Tremayne-Smith, richard.tremayne-smith@ntlworld.com