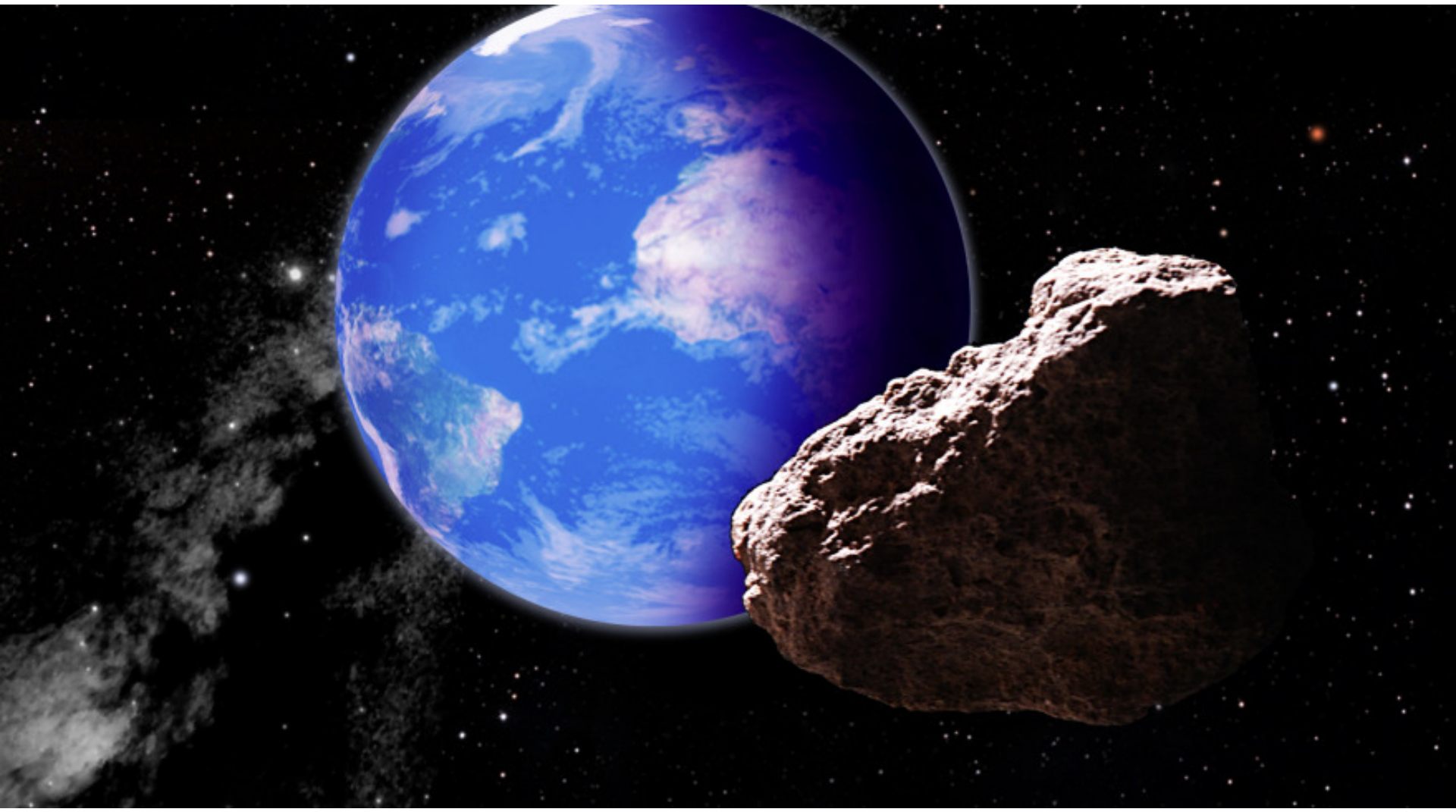
SPACENEWS

Op-ed | Building International Infrastructure for Planetary Defense

by Linda Billings and Sergio Camacho — July 24, 2015



The International Asteroid Warning Network (IAWN) and the Space Missions Planning Advisory Group (SMPAG) are looking to facilitate international NEO detection and countermeasures. Credit: Center for Astrophysics artist's concept

Within the past year, two multinational groups have been established to prepare for planetary defense — protecting Earth from any damaging asteroid impact.

Only in the past two decades have scientists acquired an in-depth knowledge of the near-Earth object (NEO) population and the potential for close approaches and future impacts. The Chelyabinsk atmospheric impact event of February 2013 focused world

attention on NEO impact hazards and risks and provided the global NEO community with an opportunity to inform decision-makers and citizens about its current understanding of the hazard posed by the NEO population.

The risk of a catastrophic impact with Earth is very small, but the possible consequences are quite grave. Thus the global space community is coming together to prepare for a response to the possibility of future impacts.

The two new groups, the International Asteroid Warning Network (IAWN) and the Space Missions Planning Advisory Group (SMPAG), held their first meetings in 2014.

The intent of IAWN is to maintain a worldwide-supported effort to detect, track and physically characterize near-Earth objects that pose a risk of impact with Earth, with the aim of determining the time, location and severity of any potential asteroid impact and notifying the global community.

SMPAG is focused on developing asteroid deflection mission campaign options. The objectives of SMPAG are to develop cooperative activities among its members and to build consensus on recommendations for planetary defense measures.

In the event of a credible impact warning from IAWN, the SMPAG would propose mitigation options and implementation plans for the international space community.

IAWN involves organizations already detecting, tracking and characterizing NEOs such as NASA and the European Space Agency, but invites other institutions to join the worldwide effort. SMPAG involves governmental space agencies and offices. IAWN and SMPAG were established in response to recommendations endorsed by the United Nations but operate independently of the U.N.

IAWN's primary focus is the discovery of potentially hazardous NEOs (asteroids and comets) and the identification of any of those objects requiring action. IAWN will function as an internationally recognized clearinghouse for the receipt, acknowledgment and processing of all NEO observations, and as a global portal for

accurate and validated information on the NEO population. IAWN will develop procedures and terminology for communications with mass media and the general public. As a third function, IAWN will assist disaster managers in preparing for expected damage for a range of NEO sizes and impact locations.

In 2001, responding to U.N. member states' concerns about the risk of asteroid impacts with Earth, the U.N. Committee on the Peaceful Uses of Outer Space (COPUOS) established the Action Team on Near Earth Objects (known as Action Team 14) to study the problem and develop recommendations for action. In February 2013, Action Team 14 recommended the establishment of IAWN and SMPAG to the COPUOS Scientific and Technical Subcommittee. In June 2013 COPUOS formally endorsed the recommendation, and in December 2013 the U.N. General Assembly followed suit.

Retired Romanian cosmonaut Dumitru Prunariu played a key role in shepherding the idea of organizing the global space community to plan for planetary defense through the U.N. Prunariu served as the permanent representative of the Association of Space Explorers to COPUOS from 1993 until 2004. He chaired the COPUOS Scientific and Technical Subcommittee from 2004 to 2006 and served as chairman of COPUOS from 2010 to 2012.

The IAWN Steering Committee held its first meeting in January 2014, and SMPAG held its first meeting in February 2014. By participating in these two groups, space agencies and other organizations around the world have made a commitment to preparing for planetary defense.

However, these member organizations are dependent on their sponsoring governments for funding. Although a sizable NEO detection and tracking community is already at work, commitments to fund deflection mission development have not yet been made.

The next asteroid to impact the Earth may not be detected until hundreds of years from now. Or it may happen next year. Having the technology, can the nations of the world afford not to be prepared for such an event?

Sergio Camacho is chairman of the COPUOS Action Team on NEOs. Linda Billings is a consultant to NASA's Near-Earth Object Observations Program.