

# NEW IAA STUDY

## Dealing with the Threat to Earth from Asteroids and Comets

FOLLOWING A SERIES OF STUDIES ON SPACE DEBRIS, SPACE DEBRIS MITIGATION, SPACE TRAFFIC MANAGEMENT AND ON THE OCCASION OF THE FIRST IAA PLANETARY DEFENSE CONFERENCE, GRANADA, SPAIN APRIL 2009

### Dealing with the Threat to Earth from Asteroids and Comets,

Published 2009, 140 pages. The Earth has been struck by asteroids and comets (Near-Earth Objects, NEOs) many times throughout its history. This report of the International Academy of Astronautics addresses the nature of the threat, expected future impacts, and the consequences of impacts from various size NEOs. It reviews current programs to detect, track, and characterize NEOs, and the future improvements required in order to take responsible and timely action. It identifies a number of techniques that could alter an incoming NEO's orbit so as to avoid an impact. It addresses the organizational aspects that will have to be dealt with if a serious international capability is to be developed and employed to mitigate the threat. It then addresses behavioral factors and the sociological and psychological aspects of the threat and attempts at its mitigation before, during, and after an intercept attempt, whether successful or not. Lastly the report examines some of the principal international policy implications that must be dealt with if the world is to act in a timely, unified, and effective way with the very real threat due to NEOs. To access full text <http://iaaweb.org/content/view/229/356/>



Study presented to the United Nations, on the occasion of the 46th Session of the Scientific and Technical Subcommittee of United Nations Committee on the Peaceful Uses of Outer Space in Vienna, Austria, on 16 February 2009 by Academician Ivan Bekey, USA.

The hard cover study to be published in India, courtesy of the Indian Space Organization (ISRO) will be available first half of 2009. It will be available upon request at IAA Paris office.

The International Academy of Astronautics (IAA), a non governmental organization recognized by the United Nations, was founded in 1960. The purposes of the IAA are to foster the development of astronautics for peaceful purposes, to recognize individuals who have distinguished themselves in areas related to astronautics, and to provide a program through which the membership can contribute to international endeavors and cooperation in the advancement of aerospace activities.

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**International Academy  
of Astronautics**

## IAA in Brief

**Founded:** 16 August 1960, Stockholm, Sweden, during the 11th International Astronautical Congress, by Theodore Von Karman. Statutes revised: 1963, 1965, 1969, 1983, 1987 and 1998. Independent non-governmental organization recognized by the United Nations in 1996. Current President Prof. Edward C. Stone, USA, Past-President Dr. Michael Yarymovych, USA, vice-Presidents: Dr. Claudie Haigneré, France; Dr. Madhavan G. Nair, India; Dr. Hiroki Matsuo, Japan; Dr. Stanislaw N. Konyukhov, Ukraine, Secretary General Dr. Jean-Michel Contant, France.

**Aims:** Foster the development of astronautics for peaceful purposes; recognize individuals who have distinguished themselves in a related branch of science or technology; provide a program through which members may contribute to international endeavors; cooperation in the advancement of aerospace science.

**Structure:** Regular Meeting (every two years). Board of Trustees (meets twice a year), consisting of: President; four Vice-Presidents and twenty-eight Trustees, seven from each Section: Basic Sciences, Engineering Sciences, Life Sciences, Social Sciences.

**Activities:** Encourage international scientific cooperation through scientific symposia and meetings and the work of six specialized commissions: Space Physical Sciences, Space Life Sciences, Space Technology and System Development, Space System Operation and Utilization, Space Policy Law and Economy, Space and Society Culture and Education.

### Standalone Conferences 2009:

March 2009: IAA co-sponsor Fifth European Space Debris Conference, ESA/ESOC, Darmstadt, Germany

April 2009: 2nd IAA Conference on Advanced Space Technologies for Humankind Prosperity, Dnepropetrovsk, Ukraine

April 2009: 3rd IAA Space and Society Conference, Space the Human Dimension, Dnepropetrovsk, Ukraine

April 2009: 1st IAA 2008 Planetary Defense Conference Granada, Spain.

May 2009: 7th IAA Small Satellite for Earth Observation, Berlin, Germany

May 2009: IAA Regional Meeting Yaoundé, Cameroon

June 2009: 17th IAA Human in Space Symposium Moscow, Russia

July 2009: IAA Symposium on Realistic Near Term Advanced Space Missions, Aosta, Italy

Sept 2009: IAA Solar Power Satellite Workshop, Toronto, Canada

Sept 2009: IAA co-sponsor UN Symposium on the Use of Small Satellites for Sustainable Development, Graz, Austria

August 2009: IAA Symposium on Low Cost Planetary Missions, Goa, India

October 2009: IAA Academy Day, Daejeon, Korea

November 2009: First IAA Space & Global Safety of Humanity Conference, Limassol, Cyprus

November 2009: 3rd IAA Regional Conference Space for Africa, Abuja, Nigeria

**Events:** Establishment of cooperation with national academies: Royal Swedish Academy of Sciences (1985), Austrian Academy of Sciences (1986, 1993), French Academy of Sciences (1988, 2001), Finnish Academy of Sciences (1988), Indian Academy of Sciences (1990, 2007), Indian National Academy of Engineering (2007), Indian Academy of Sciences of Bangalore (2007), Spanish Academy of Sciences (1989), German Academy of Sciences (1990), Netherlands (1990), Royal Society of Canada (1991, 2008), U.S. Academy of Sciences (1992, 2002), US Academy of Engineering (1992, 2002), Israel Academy of Sciences and Humanities (1994), Norwegian Academy of Science and Letters (1995), Chinese Academy of Sciences (1996, 2006), Academy of Sciences of Turin (1997), Australian Academy of Sciences (1998), the Royal Netherlands Academy of Art and Sciences (1999), Brazilian Academy of Sciences (2000), US Institute of Medicine (2002).

**Publications:** Acta Astronautica (monthly) published in English; IAA e-newsletter; Proceedings of Symposia, Yearbook, Weekly News, Position Papers and Cosmic Studies, Scientific Papers Data Base on the IAA Web site.

**Members:** Full and Corresponding Members (active: 1200) in four Trustee Sections; members in 79 countries.

## IAA Multilingual Space Dictionary

The Multilingual Space Dictionary Study Group of the International Academy of Astronautics (IAA) produced an homogenous system of terms covering various fields of astronautics like space science, technology, medicine, law etc. The Dictionary comprises more than 2600 English terms translated by specialists to 16 languages: Arabic, Bulgarian, Chinese, English, French, German, Hindi, Hungarian, Italian, Japanese, Polish, Portuguese, Romanian, Russian, Spanish, Turkish. The Dictionary is intended to help the work of scientists, engineers, translators and librarians, moreover to facilitate emergence of a new space terminology as well as the preparation of more complete aerospace dictionaries and encyclopedias in different languages.

**Free of Charge Download at <http://iaaweb.org/content/view/362/510/>**

- Version 1.2 (Windows tool, 2614 terms in 16 languages) The number of terms and languages has been increased in the current version 2.1 available on line. Ukrainian, Gaelic, Greek, and Indonesian joined.

- Online Access: Version 2.1 (2628 terms in 20 languages)