2027 IAA Planetary Defense Conference
3-7 May 2027, Montreal, Canada
https://iaaspace.org/pdc

Call for Papers

Papers are solicited in the areas listed below for the *2027 IAA Planetary Defense Conference (PDC)*. Please see the information about our student competition on page 3.

A broad theme of the conference is to highlight processes, technologies, techniques, missions, and data sets that have been and must be developed to support planetary defense and strengthen international cooperation for defending the Earth against impact hazards associated with asteroids and comets. Special highlights include recent space missions related to planetary defense, a hypothetical asteroid threat exercise, and panel discussions by decision-makers, young professionals, commercial space companies, communications experts, legal and policy experts, disaster managers, and others. Topic areas for papers include:

Apophis T-2 Years

- Current and proposed space missions to Apophis before, during, and after the April 13, 2029 Earth close approach
- Plans for ground-based observations, overall coordination, and viewing opportunities

Ongoing and Upcoming Mission Highlights

- Current and proposed space missions to inform and test planetary defense technologies
- Highlights of Hera, Hayabusa2#, DESTINY+, NEO Surveyor, OSIRIS-REx/APEX, Ramses, other Apophis missions, etc.

Hypothetical Asteroid Threat Exercise

- The details of the hypothetical asteroid threat exercise will be available at https://cneos.jpl.nasa.gov/pd/cs/pdc27/ in early August 2026
- Any contributions to the topics below based upon the exercise are welcome

Key International & Policy Developments

- Policy planning and developments towards an international planetary defense strategy
- National and international activities, strategies and plans for planetary defense

Near-Earth Object (NEO) Discovery

- Current NEO survey progress, requirements, and goals for future surveys
- Astronomical and space-based techniques for discovery of NEOs
- Prospects for future NEO survey systems and efforts (e.g., VRO / LSST, NEO Surveyor)

Near-Earth Object (NEO) Characterization

- Findings related to characterizing NEO physical, dynamical, and orbital properties.
- Characterization of properties most crucial to planetary defense mission success and disaster preparation
- Technologies to characterize NEOs via remote sensing and spacecraft flyby/rendezvous/landing
- Current and planned flight missions to NEOs; opportunities from NEO close approaches

Deflection / Disruption Modeling & Testing

- Results of modeling/experimentation that characterize effects of proposed NEO deflection and disruption techniques and technologies
- Progress on key technologies needed to deflect, disrupt, or otherwise mitigate hazardous NEOs

Space Mission & Campaign Design

- Development and validation of critical technologies for planetary defense
- Designs for planetary defense flight validation missions
- Rapid response NEO reconnaissance mission concepts
- Design of in-space mission campaigns to hazardous NEOs (reconnaissance, deflection/disruption).

Earth Impact Effects & Consequences

- Hazards of individual impactors; ensemble hazard integrated over the predicted population of impactors
- Analysis tools that could aid decision makers
- Process of atmospheric break-up and airbursts for a variety of NEO types and lessons learned based on Tunguska and Chelyabinsk super-bolides
- Transition from regional to global effects as a function of impactor size, location, and other factors
- New results on the effects of ocean and land NEO impacts and related damage footprints
- Short- and long-term post-impact effects on the atmosphere, environment, near-Earth space, and space systems (e.g., communications)

Defense Against Impacts on the Moon

- Impact risk on the Moon (and Mars), including risks from small impactors to structures on the airless moon
- Risk on Earth and for satellites from lunar impact ejecta.

Disaster Management & Impact Response

- Lessons learned from past natural disaster responses, exercises, alerts, public education, risk communications strategies and warnings, and their application to Planetary Defense Management
- Review of current and near-future disaster response plans and preparations specific to NEO impacts, incl. communication strategies for warning and informing decision makers, the general public and others
- International perspective on disaster management in view of regional and national assets

Public Education & Communication

- Current status of planetary defense / NEO-related communication and public education efforts, including dissemination, alerts, public engagement, student programs, outreach initiatives, etc.
- Concepts for improving trusted NEO / planetary defense public education and communication

The Decision to Act: Political, Legal, Social and Economic Aspects

The “Decision to Act” session particularly welcomes, and will prioritize, papers engaging directly with the PDC 2027 hypothetical impact scenario and its associated political, legal, social, economic, and decision-making challenges, such as:

- National and international planetary defense / NEO-response policies and decision-making processes, including any envisioned participation of nations’ military organizations in planetary defense
- International coordination and collaboration, and distribution of responsibilities during a planetary defense response
- Legal and policy aspects of NEO mitigation
- Cost effectiveness and comparative evaluation of mitigation options
- Short- and long-term economic, political, and social consequences of a serious threat or impact
- Ethical challenges associated with planetary defense decision-making

ABSTRACT SUBMITTAL: Technical paper abstracts (250 to 500 words in length) in the areas described above or otherwise related to planetary defense will be accepted electronically through the conference website noted below beginning **September 4, 2026**. Please be sure to designate the topic area your paper addresses (see topics listed above). Please also indicate whether the abstract is eligible for the student competition (see below). The deadline for receipt of abstracts is **November 23, 2026**. Author notifications of acceptance will be sent on or before **January 22, 2027**.

PAPERS: Full-length manuscripts and poster or presentation files are due by close of business on **April 28, 2027**. Revisions and corrections will be accepted within two weeks after the end of the conference. The format for papers will be specified on the conference website. Accepted papers will be published in the official

conference proceedings and hosted at the IAA website. Full-length manuscripts may be considered for publication in a special issue of *Acta Astronautica.*

STUDENT COMPETITION:
The aim of the PDC 2027 Student Competition is to help promote academic work and informed political debate by enhancing the research and general understanding essential for sound decision-making on NEO impact threats in the years to come. One or more of the best student papers and/or posters will be awarded a prize during the conference.

Students wishing to submit papers or posters to the PDC 2027 Student Competition must submit their abstract and upload proof of enrollment for the 2026-2027 academic year through the abstract submission portal to confirm their participation before **November 23, 2026**. Limited financial support for travel may be available for students participating in the PDC Student Competition. Priority will be given to students who would otherwise be unable to attend, particularly first-time PDC attendees and students from countries that have historically had lower representation at past PDCs. Students whose abstracts are selected during the initial review process (acceptance notifications on **January 22, 2027**) will be invited to continue to the second phase of the competition. To remain eligible for the PDC 2027 Student Competition and associated travel support, selected students will be required to:

- **By February 12, 2027**: submit a 5-7 page extended abstract, a short letter of intent, and a statement of financial need specifying both the amount requested and any complementary funding expected from their institution or other sources.
- **By March 5, 2027:** confirm acceptance of any awarded travel grant and commitment to attend the PDC Gala on Thursday, May 6, 2027, where the PDC 2027 Student Competition ceremony will be held (mandatory for all travel grant recipients).
- Present their accepted paper or poster at PDC 2027 during their assigned technical session(s).

Finalists and travel grant recipients will be notified on **February 22, 2027**, before the end of the early-bird registration period. For questions regarding the competition or student support, students may contact the PDC Student Competition chair, Alissa J. Haddaji, at alissa.haddaji@spaceconsortium.org.

For general questions about the 2027 PDC Call for Papers, please contact Brent Barbee at brent.w.barbee@nasa.gov.