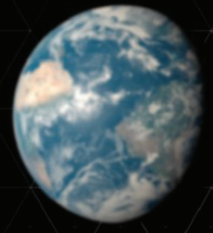


**EXERCISE EXERCISE EXERCISE**

# PLANETARY DEFENSE INTERAGENCY TABLETOP EXERCISE 5



The 5<sup>th</sup> Interagency Planetary Defense Tabletop Exercise (PD TTX5) will inform preparedness and response capabilities, including international coordination and involvement, for an asteroid impact threat. Planetary defense encompasses all capabilities needed to detect and warn of potential asteroid or comet impacts with Earth, and aims to prevent impacts when possible or mitigate the effects of impact when prevention is not feasible.

Sponsored by the NASA Planetary Defense Coordination Office (PDCO), in partnership with the Federal Emergency Management Agency (FEMA) and U.S. Department of State Office of Space Affairs, this TTX will bring together a diverse set of officials from across the globe. Participating organizations include representatives from the White House National Security Council, U.S. Executive Office of the President, United Nations Office of Outer Space Affairs, and other national space and disaster response agencies.

This TTX will provide a low-stress, no-fault environment to generate dialogue about various challenges associated with preparing for and responding to a potential asteroid impact. Participants are encouraged to review this document and consider their agency's potential roles and responsibilities. To help participants prepare for meaningful discussions, this document includes sample questions to be posed early in the exercise. A read-ahead package with more detailed information will be released closer to the TTX.

## SCENARIO SUMMARY

The hypothetical scenario is that an asteroid has been discovered with a significant chance of Earth impact in several years. The scenario includes many uncertainties, but data indicate that the asteroid could be large enough to devastate a regional- to country-scale area if it should impact.

Following concise technical briefs, participants will engage in facilitated discussions to examine this moment in time from several perspectives. Part of the exercise will examine how to proceed effectively in such a situation, given the many large, but realistic, uncertainties in the final outcomes. Day 1 will focus on discussions that will help participants attempt to reach consensus on a set of recommended courses of action to be shared with senior leaders on Day 2.

The TTX5 overarching objectives are to:

- Raise awareness of the nature of asteroid threats and challenges related to preparing for an effective international response
- Explore potential in-space responses to an asteroid threat with >10 years of warning time, including international collaboration and contributions
- Assess the challenges of and readiness for planning an international emergency response to an asteroid impact that would be large enough to devastate entire regions
- Identify current mechanisms for, and barriers to, international asteroid threat-related information sharing and communications, including public messaging strategies

**EXERCISE EXERCISE EXERCISE**



**FEMA**



**JOHNS HOPKINS**  
APPLIED PHYSICS LABORATORY



**Lawrence Livermore**  
National Laboratory



# EXERCISE EXERCISE EXERCISE

## PREPARATION FOR THE TTX

Participants should become familiar with their organization's policies or procedures relevant to this scenario and are encouraged to share this information during the exercise, including related documents, when applicable. Such information may include, but need not be limited to, disaster preparedness and response procedures, space policies, organizational structures, contingency plans, and/or information sharing and communications protocols.

During the TTX, participants will engage in an interactive dialogue about different organizations' and governments' policies, procedures, and potential responses. They will also be given opportunities to learn from each other and enhance cross-agency and international communications and coordination. The views expressed are not expected to be official government or organizational positions.

Preparation by participants prior to the TTX will enable a richer discussion. Examples of questions that will be posed include:

- How might your organization respond to the notification of an asteroid threat?
- With which partners and/or stakeholders would you be communicating and coordinating?
- What roles might your country's academic, commercial/private space industry or defense sectors play?
- What mechanisms currently exist for international collaboration and coordination that could be used in a planetary defense situation?
- Does your agency or organization have policies or protocols for information sharing and decision making given this type of threat?
- How would you develop and share crisis information with the public?

## TO LEARN MORE

Primers on planetary defense are available from NASA PDCO, United Nations Office of Outer Space Affairs (UNOOSA), and the European Space Agency (ESA) at:

<https://science.nasa.gov/planetary-defense>

<https://www.unoosa.org/oosa/en/ourwork/topics/neos/index.html>

[https://www.esa.int/Space\\_Safety/About\\_asteroids\\_and\\_Planetary\\_Defence](https://www.esa.int/Space_Safety/About_asteroids_and_Planetary_Defence)

The U.S. *National Preparedness Strategy and Action Plan for Near-Earth Object Hazards and Planetary Defense* outlines goals & actions for addressing an asteroid threat.

[https://www.whitehouse.gov/wp-content/up-](https://www.whitehouse.gov/wp-content/uploads/2023/04/2023-NSTC-National-Preparedness-Strategy-and-Action-Plan-for-Near-Earth-Object-Hazards-and-Planetary-Defense.pdf)

[loads/2023/04/2023-NSTC-National-Preparedness-Strategy-and-Action-Plan-for-Near-Earth-Object-Hazards-and-Planetary-Defense.pdf](https://www.whitehouse.gov/wp-content/uploads/2023/04/2023-NSTC-National-Preparedness-Strategy-and-Action-Plan-for-Near-Earth-Object-Hazards-and-Planetary-Defense.pdf)

Participants can also refer to the International Asteroid Warning Network (IAWN) and Space Mission Planning Advisory Group (SMPAG), which are international organizations endorsed by the UN to aid in planning for a potential asteroid impact. IAWN focuses on understanding the asteroid impact threat, including impact likelihood and Earth impact effects. SMPAG focuses on space-based mission planning and mitigation. More information on these organizations and their charters can be found at their websites:

<https://iawn.net>

<https://www.cosmos.esa.int/web/smpag/>

Finally, participants may wish to review the final report on 4th interagency planetary defense TTX to gain knowledge on the nature of these TTXs:

<https://cneos.jpl.nasa.gov/pd/cs/ttx22/final.html>

**For more information, contact TTX coordinator Leviticus A. "L.A." Lewis (leviticus.a.lewis@nasa.gov) or PD-TTX@jhuapl.edu.**

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