

IAF SYMPOSIUM ON PLANETARY DEFENSE AND NEAR-EARTH OBJECTS (E10)  
Planetary Defense from Asteroids and Comets (1)

Author: Prof. Christopher Johnson  
Secure World Foundation, United States, cjohnson@swfound.org

INTERNATIONAL PLANETARY DEFENSE COORDINATION TASKS AND DECISIONS TO BE  
TAKEN BEFORE AN ACTUAL NEO THREAT ARISES

**Abstract**

A credible planetary defense threat is a scenario with global implications, and multinational and multi stakeholder concerns. For example, the Hypothetical Asteroid Impact Scenario used at the 2023 Planetary Defense Conference (2023 PDC) in Vienna, Austria comprised a scenario with a potential ground strike to a diversity of nations: two North America states, fifteen African states, and with 48% of the potential swath regions over the Pacific or Atlantic oceans. The 2023 PDC scenario begins in 2023 with a potential Earth impact thirteen years later, in 2036. The asteroid's orbit, size, composition, and projected impact location and consequences would continue to evolve and be refined with future observations leading up to the potential impact date. Therefore, the planning of a potential Earth- and space-based mitigation and response campaign will have to begin and proceed with a worrying amount of uncertainty.

All of these elements, from the diversity of states threatened, to the competing time pressures to begin work and the opposite rationale to wait for more and better data and predictions, will act as stressors to degrade national and international decision-making and coordination efforts. Disparate national planetary defense capabilities and approaches will place further stress on the political and legal coordination tasks necessary to face the 2036 projected impact. National and international deliberations and decisions will be required regarding: the duty to warn; the duty to act; the choice of NEO threat responses; the sharing of tasks and responsibilities; and the exposure to potential legal and political consequences of a mismanaged or unsuccessful planetary defense program.

This paper will discuss the legal and political contexts and implications of an uncertain and potentially catastrophic NEO impact with the stressors on decision-making and international legal responsibility and liability described above. It will offer a checklist of national and international tasks for states to deliberate upon, as pragmatic steps to settle the questions that need to be settled before a potential NEO threat becomes real.