



## **A policy perspective on NEOs and planetary defense: institutions, agendas, problems and solutions for large-scale policy making**

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The characterization of near-Earth-objects (NEOs) with regard to physical attributes and potential risk and impact presents a complex and complicated scientific and engineering challenge. The societal and policy risks and impacts are no less complex. If, in fact, humankind is finally at the stage where it can technically prevent a catastrophic asteroid impact, through deflection or other physical means, the question remains as to whether or not humankind has the political will, and appropriate institutions, to do so. This requires a different perspective on the problems of NEOs and asteroids and the solutions prescribed to address them. This contribution provides a measured public policy perspective with an emphasis on two policy themes: the unique policy attributes and challenges of low probability-high consequence events, and the strategic problem and solution definition aspects of NEOS and planetary defense alternatives.

This paper identifies and articulates multiple, convergent, stages with regard to NEOs and planetary defense: 1) Identification and characterization of objects and their potential threat; 2) Response type 1, or the determination and implementation of effective deflection or mitigation responses, and, 3) Response type 2, the civil defense and natural hazard response preparation activities. For each of these stages, however, there are different institutions and actors engaged, with different agendas, resources, and historical trajectories. The convergence of these stages represents a challenging and complex large-scale policy network problem. We also reflect on the implications of alternative NEO “solutions” and the characterization of the NEO “problem” across the planetary policy landscape and the political and public acceptance of policy alternatives. For example, are NEOs scientific problems to be “solved” through more research funding, are they more of a traditional civil defense problem, or national and global security problem, or even an opportunity for the peaceful use of space and the economic exploitation of space resources? Each of these definitions of the “problem” is connected to potential “solutions,” which compete for attention and resources across the policy network. This policy perspective will provide the PS2.6 panel with a provocative look into how science and policy collide across the NEO and planetary defense landscape.