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DO LOOK UP: A YOUNG GENERATION'S PERSPECTIVE ON PLANETARY DEFENSE

Abstract

One aspect of human behavior that recent events have shown is people's lack of response to seemingly distant or unlikely situations. Nonetheless, this action, or absence of action, results in inadequate planning and policies to deal with high-impact global events like the Covid-19 Pandemic or Climate Change. In this context, the space sector is no exception. Considerable problems such as our unsustainable use of space, resulting in substantial amounts of debris as shown in ESA's Annual Space Environment Report issued in 2021, show our tendency to respond insufficiently to faraway problems even when they might have significant consequences for our future. A space field impacted by this issue is Planetary Defense, which concerns our capabilities to manage the risks associated with Near-Earth Objects' (NEO) collision with Earth. Ideally, a proper planetary defense infrastructure would include adequate technical, societal, and political frameworks to identify and characterize a NEO in a trajectory towards Earth on time and put in place mitigation strategies and emergency procedures. In recent years, the space community has made substantial efforts to strengthen planetary defense capabilities, including the launch of the first-ever planetary defense mission "NASA Double Asteroid Redirection Test (DART)" in 2021. Despite this, the current technological infrastructure and policies in place are still under development with room for improvement. The research presented in this paper is the result of a collaboration between the Space Generation Advisory Council (SGAC) and the NASA Planetary Defense Coordination Office (PDCO).

During a three-day workshop at the Space Generation Congress in Dubai (2021), students and young professionals from all over the world were educated on planetary defense and confronted with a hypothetical Earth impact scenario. The paper describes the lessons learned during the workshop, detailing the major outcomes and outlining the proposed recommendations to improve planetary defense infrastructure, policy, and coordination. Furthermore, it provides the results of a survey shared among the young generation to quantitatively assess their awareness about the topic and help improve efforts to educate about planetary defense by identifying the existing knowledge gaps and misunderstandings. Also, the study includes a comparative study of the perspectives of the young generation against the decisions made by the delegates during the simulated scenario. This comparison could provide a better understanding of the young generation's perspective towards handling such a scenario which could help improve our current political framework to be better prepared for dealing with high-impact, low-probability events.