

Participatory Exploration for Inspiration and Education (12)
Engaging Citizens: Results and Future Concepts (1)

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PUBLIC ASTRONOMY ENABLING HUMAN AND ROBOTIC MISSIONS TO ASTEROIDS

Abstract

Many asteroids are known to be in very accessible orbits, but missions to these objects are inhibited by a lack of information about their precise orbits and their physical characteristics. A number of amateur astronomers and university observatories are already engaged in asteroid tracking and are capable of contributing to solving the information shortage. Over the past year, Lockheed Martin has engaged with the international astronomy community to coordinate observations of the asteroids which are of the greatest interest for mission planners. We provide e-mail alerts when new priority objects of interest are discovered, so that amateur observers can track them to prevent these new asteroids from being lost. We also provide lists of known accessible asteroids which are predicted to be visible over the coming year so that observations can be scheduled ahead of time. A mix of small, backyard observatories and larger, research-class telescopes provides a good portfolio of tracking capabilities. The paper will describe several of the observers and their capabilities, and provide examples of successful observations to date. We will also offer suggestions for how NASA and other space agencies can better engage and enhance amateur and educational observatories through methods such as grants and prize competitions.