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**SHOEMAKER NEO GRANTS: UPGRADING NEO OBSERVATIONAL
CAPABILITY**

Bruce Betts⁽¹⁾

⁽¹⁾*The Planetary Society, 60 S. Los Robles Ave., Pasadena, CA 91101, USA, +1-626-793-5100, bruce.betts@planetary.org*

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ABSTRACT

Since 1997, The Planetary Society's Gene Shoemaker NEO Grant program has been a resource for amateur observers, observers in developing countries, and under-funded professional observers in contributing to vital NEO research, and grant winners have made significant contributions to asteroid discovery, tracking, and characterization. The Planetary Society has awarded 49 Shoemaker NEO grants totaling about \$323,000 to observers, mostly amateurs with proven track records, from 16 different countries on 5 continents. A call for proposals will be released to coincide with the Planetary Defense Conference. At the conference, examples of recent Shoemaker NEO winners' contributions and geographical distribution will be presented, as well as details of the new call for proposals.

The program honors pioneering planetary geologist Gene Shoemaker, who did so much to help us understand the process of impact cratering on the planets and the nature of the NEO population. Originally, the focus of the program was on discovery, but in an era of professional surveys, the foci have shifted toward astrometric follow-up and to valuable physical studies to characterize the physical nature of NEOs.

Grants typically go to hardware upgrades to take already productive observatories to the next level, for example through sensitive cameras or equipment to robotically control an observatory. The worldwide distribution of the past winners also has allowed collaboration on discoveries and follow-up with groups in one country contacting groups in other countries to provide rapid follow-up of discoveries.

The program gives priority to aiding observers with telescopes with apertures larger than about 24 inches, or 60 centimeters, or effectively larger telescopes at superior observing sites. The program also aids those seeking to automate observing facilities and equipment. Large telescopes at sites with dark, clear skies allow for observation of NEOs fainter than magnitude $V = 20.5-21$ (where the professional surveys are discovering many new small objects) and automation of observing facilities allows observers with 'day jobs' to utilize their facilities more nearly full time and much more efficiently. Priority is also given to programs that can leverage Shoemaker grant funds through matching contributions from other sources.

More information on the Shoemaker NEO grants and grant winners can be found at: <http://www.planetary.org/explore/projects/neo-grants/>

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