

Amateur Astronomers: Secret Agents of EPO

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Abstract. Amateur astronomers prime the public to be more interested, receptive, and excited about space science, missions, and programs. Through recent research and targeted programs, amateur astronomy outreach is being increasingly recognized by professional astronomers, educators, and other amateurs as a valued and important service. The Night Sky Network program, administered by the ASP, is the first nationwide research-based program specifically targeted to support outreach by amateur astronomers. This Network of trained and informed amateur astronomers can provide a stimulating introduction to your EPO programs as Network members share the night sky with families, students, and youth groups.

1. Amateur Astronomers and Their Impact on Their Audiences

Amateur astronomers can be found volunteering their time in classrooms, science and nature centers, community fairs and events, libraries, parks, and parking lots. They bring their knowledge and their telescopes, as well as educational hands-on activities, to inspire families, students, and community groups to better understand the universe.

Evidence for their ability to inspire is both anecdotal and backed by research. One report from an amateur astronomer in Texas illustrates the impact they make: “One student said that she could see a lot of pictures in her textbooks, but it was nothing like the feeling of reality that she got when looking through a telescope.”

As reported by Gibbs and Berendsen (2007), teachers partnered with astronomers in the Project ASTRO program were asked “Did Project ASTRO change your students’ attitudes towards science?” Sixty percent of the teachers who were partnered with amateur astronomers reported a large positive change. Only 7% reported no perceptible change.

A book recently published by the Astronomical Society of the Pacific, *Science Educators Under the Stars* (Gibbs, Berendsen, & Storksdieck 2007), sum-

marizes much of the current research on amateur astronomers as science educators. Stories from the amateur astronomers themselves illustrate the motivation and personal satisfaction of sharing astronomy with the public.

2. Increasing Recognition and Support for Amateur Astronomy Outreach

Amateur astronomy outreach has, until recently, been almost exclusively an individual or club effort, largely undocumented, informal, and with little outside support or recognition. The ASP's experience with Project ASTRO, formal research on amateur astronomers and their outreach, and the establishment of the Night Sky Network (<http://nightsky.jpl.nasa.gov>) have helped initiate a trend toward increasing support, visibility, and recognition of amateur astronomy outreach.

2.1. Increasing support through programs

ASP's Project ASTRO was established in 1994 to partner astronomers with teachers in the classroom. Many of these partners were amateur astronomers. The keys to the success of this program were matching the astronomer to the needs and interest of the teacher and an intensive two-day training workshop where the partners actively participated in classroom-tested hands-on activities as well as coming to an understanding of the importance of communication and mutual planning between the partners. Activities and resources are detailed in *Universe at Your Fingertips*, an ASP publication that is provided to each partnership.

From this program, the ASP recognized a potential need to expand support for amateur astronomy outreach to the wider amateur community. In 2002 the ASP conducted a survey on outreach among amateurs. The results (Storksdieck et al. 2002) revealed three primary areas where amateurs expressed a need for support:

- Targeted and themed materials and activities
- Training in astronomy content, outreach techniques, and relating to audiences
- Contact with like-minded amateurs

The Night Sky Network, with extensive cooperation and support from JPL's Navigator Public Engagement Program, was established in 2004 to meet these needs. Thousands of events are logged each year into the Night Sky Network, providing extensive insights into the practices, impact, and effectiveness of amateur astronomers engaged in public outreach.

2.2. Increasing visibility among professional astronomy educators and scientists

Since the success of the first "Outreach ToolKit" issued to the Night Sky Network members, several other NASA missions and education professionals have

recognized amateur astronomers as a many-thousand-strong nationwide coalition who regularly reach large numbers of the general public in ways that other types of educators cannot. In a partnership of the ASP, NASA, and the Night Sky Network members, six Outreach ToolKits have, as of this writing, been developed on the science behind a variety of NASA missions.

NASA's *Kepler Mission* (<http://kepler.nasa.gov/>) is one such mission that saw the opportunity of supporting amateur astronomy outreach to disseminate information about the mission. The SETI Institute, in charge of EPO for the *Kepler Mission*, partnered with the ASP to produce the Outreach ToolKit, *Shadows and Silhouettes: Phases, Eclipses & Transits*, featuring the *Kepler Mission* and its objective of searching for transits of Earth-size planets orbiting other stars.

The reasons for the *Kepler Mission* participation were many:

- Communicates *Kepler Mission* science to the public
- Creates and tests unique activities to demonstrate transits, eclipses, and phases which are all essential astronomy concepts to understand the *Kepler Mission*
- Supports outreach by amateur astronomers
- Based upon thoughtful needs assessment of amateurs
- Demonstrated quality and effectiveness by NSN

2.3. Increasing recognition through awards for outreach

In addition to the ASP's annual amateur outreach award and a number of annual awards granted by astronomy-themed magazines, the Astronomical League (AL) established a new individual award for outreach in 2006.

<http://www.astroleague.org/al/obsclubs/outreach/outreach.html>.

Patterned on the Astronomical League's Observing awards, also referred to as "Observing Clubs," the Outreach awards have three levels of achievement. A pin and certificate are issued to awardees. In its first year, over 100 AL members were issued this award.

What makes the AL's Outreach award unique is that in the past, recognition of achievement as an amateur astronomer was primarily based on one's ability to observe and document those observations. The AL has over 25 different categories of observing awards.

The Outreach award helps to expand the idea that outreach is another valued way for amateur astronomers to pursue their hobby.

3. Conclusions

The role of amateur astronomers as informal science educators is becoming more widely understood, supported, respected, and recognized. Recent research has documented the impact and effectiveness of these dedicated volunteers. We look forward to the expansion of the Night Sky Network and other programs to support and recognize amateur astronomy outreach.

References

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