

breathable air, then we have gained the most important constituency. It is, after all, the public who pay the taxes, who buy the products, and who vote in elections. Just as with other environmental issues, if the public is won over, then the engineers and policy makers (eventually) must follow along.

In this paper I highlight efforts around the world that have been particularly noteworthy in the cause of reducing light pollution by educating the public. Radio interference is also of great harm to astronomers, but it will be covered only briefly in this paper because very little has been done to educate the public about the radio problem. This is because radio pollution is a more abstract and technical concept for the average person, as well as because many of the problems are addressable at the international (World Telecommunications Union) and national levels. With light pollution, however, the battles are more often on a local stage.

The premier organization fighting light pollution and educating the public about it is the International Dark-Sky Association ([www.darksky.org/ida/index.html](http://www.darksky.org/ida/index.html)), based in Tucson, Arizona, USA, and with over 2000 members in 69 countries. Over the past ten years IDA, largely through the person of David Crawford, has been able to not only preserve dark skies for observatories, but more significantly convince a great number of lighting engineers and public officials that it's in their own best interest to use lighting systems that are also beneficial to astronomers. Exterior lighting for streets and buildings that does not shine upwards saves a great deal of money, does its job much more efficiently and safely, and is aesthetically more pleasing. An alliance has been forged between those on all sides who are "enlightened" and it is steadily growing in its size and influence. For the cause IDA has produced 7 slide sets, 120 information sheets, and 2 videotapes.

The best way to check other major efforts around the world is to visit the Web sites linked to IDA's site. For example, in the United Kingdom the Campaign for Dark Skies (CDS) has also been effective in its educational and political efforts. Their booklet *Starry, Starry Night*, produced in conjunction with the Council for the Protection of Rural England, is first-rate in promoting dark skies and good lighting practices. CDS has also promoted "Star Watch UK", a project for schools and other youth groups to count the stars visible in a well-defined area of the sky. This type of program has also been done in Canada and the USA, and especially in Japan, where it was funded by the national Environmental Agency. Based on these amateur data, maps were constructed for sky brightness all around Japan. Even more than the maps, the real value of such projects is the increased awareness they bring to the public of deteriorating sky conditions. Many other examples, from countries such as Switzerland, Holland, Italy, and Spain, are discussed in the full paper.

## **16. PUBLIC EDUCATION TO PRESERVE DARK SKIES AND ASTRONOMICAL WINDOWS WITH EAVESDROPPING AND ROBOTIC TELESCOPES**

**J. E. F. Baruch** (Robotic Observatories)

### *Abstract*

It is suggested that the only guarantee for the preservation of dark skies is the guarantee that exists in the hearts of the people around the world. This paper notes how rising living standards and increasing GNP are associated with light pollution destroying the heritage of the night sky. It argues that it is necessary to decouple light pollution from rising living standards. A contribution to this process is to provide indices that are easily understood and useable for measuring the quality of the night sky.

It is shown how robotic telescopes can provide access to the night sky for people in the developed world through programmes which provide education, involvement in astronomy research and access to the leading edge of astronomy through the new technique of eavesdropping. These education programmes will help to bring an understanding of the value of our heritage that belongs to our grandchildren: The Night Sky.

## **17. THE ISSUES OF SPACE DEBRIS AND NEAR-EARTH OBJECTS AT THE UNITED NATIONS**

**H. J. Haubold** (United Nations Office for Outer Space Affairs)

The focal point of the United Nations activities in the field of peaceful uses of outer space is the Committee on the Peaceful Uses of Outer Space (COPUOS), set up in 1959 by the General Assembly. Since its establishment, the Committee and its two subcommittees (the Scientific and