The International Year of Astronomy: NASA contributions to the United States themes

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Abstract
The International Year of Astronomy 2009 (IYA2009) is a global celebration of astronomy and its contributions to society and culture. Partners throughout the United States have been working together to plan an engaging experience available to anyone interested in participating. NASA, through its Science Mission Directorate (SMD), has developed a strategy for its involvement that uses its unique resources and facilities to complement and enhance the overall US effort. This rapidly maturing programme will leverage exciting space science missions and science research results, and build from education and public outreach (EPO) projects already in existence within NASA and its partners. Additional information can be accessed through the NASA IYA2009 website, coming soon.

Introduction
Coordination of US IYA activities is being handled by the American Astronomical Society (AAS) through a Program Committee and a Development Committee. The overall IYA effort within the US is based upon the goal: To offer an engaging astronomy experience to every person in the country, and build new partnerships to sustain public interest. To meet this goal, the Program Committee has developed major themes to guide involvement. These themes are: Looking Through a Telescope; Dark Skies Are a Universal Resource; Astronomy in Arts, Entertainment, and Storytelling; Research Experiences for Students, Teachers, and Citizen-Scientists; Telescope Kits and Optics; Sharing the Universe through New Technology; and The Universe for Classrooms and Families. The NASA effort is complementary to the overall US programme, while contributing its unique perspective and resources.

Education and Public Outreach at NASA’s SMD
The unique aspect of the NASA SMD EPO programme is its direct tie to the NASA space science missions and research. By embedding EPO efforts within each mission, SMD ensures that students, educators, and the public have access to the most recent, timely and exciting science results and major mission milestones. The individual EPO efforts associated with each space science mission are affiliated through thematic Education Forums, either Heliophysics, Planetary Sciences, or Astrophysics. The Education Forums provide a key coordinating function, nurturing collaborations between space science mission EPO programmes and other interested partners.
NASA’s strategy for EPO within IYA2009

The Education Forums have hosted a series of community discussions with NASA mission EPO Leads and other partners, internal and external to NASA, to help them all contribute to very large programmatic events within IYA2009. These community discussions brought together experts representing NASA Headquarters, space science missions, schools, museums, professional societies, and other related organisations. Each of these partners brings their own resources and key expertise to the NASA IYA2009 effort. The outcome of these meetings has been the development of an overarching SMD IYA2009 strategy, and identification of a number of targeted activities.

The cornerstone of the NASA SMD strategy for IYA2009 is to ensure alignment with the US themes and goals, while contributing a wealth of resources, projects, and infrastructure already in the NASA family of education and public outreach partners and programmes. NASA will capitalise on the public’s interest and excitement about space science missions and discoveries through major mission milestones, like spacecraft launches, and through existing programmes, like professional development workshops for teachers. The NASA SMD IYA2009 effort will be accessible through the internet via a portal website, now in development.

Highlights from the NASA calendar

The NASA SMD EPO Community has compiled a calendar of major space science mission milestones that are naturally engaging for the public, and that provide great targets of opportunity for focusing IYA2009 programmatic interest. For example, in late 2008, Servicing Mission 4 will greatly expand the capabilities of the Hubble Space Telescope. Early in 2009, the Kepler mission will launch, and begin its search for Earth-size planets. It will continue transmitting data throughout the IYA2009 year. In February of 2009, there will be a thrilling artificial impact on the Moon, as the companion payload to the Lunar Reconnaissance Orbiter strikes the surface. And July 2009 marks the 40th anniversary of the Apollo Moon landing.

Specific activities supporting US IYA themes

The community is working together to identify a series of activities that can be leveraged to support one or more of the US IYA2009 themes. These cover a wide range of subject matter from spacecraft to the possibilities for life elsewhere in the Universe, and are presented through diverse channels including multimedia shows, podcasts, and live events. They target a number of different audiences including science centres, classroom teachers, planetariums, out-of-school time programmes, and more.

Current plans for featured activities include an unveiling of large-scale prints of celestial objects; multimedia broadcast programmes; and professional development workshops. NASA and the Space Telescope Science Institute will kick off the IYA2009 at various museums, science centres and schools with the public unveiling of large-scale images from the Hubble Space Telescope, Spitzer Space Telescope and Chandra X-ray Observatory. This event will also promote public observing opportunities including Night Sky Network star parties and use of MicroObservatory
online telescopes. Within the US *Sharing the Universe Through New Technology* theme, NASA will host radio and podcast programmes around the topic *Are We Alone?* These programmes will be used to build awareness of IYA before and throughout 2009. They will be hosted by Dr. Seth Shostak of the SETI Institute, and will focus on recent research relevant to IYA and NASA’s scientific explorations of the Universe. Targeting *The Universe for Classrooms and Families* theme, NASA will highlight its ongoing professional development opportunities for educators. This will include plenary speakers at major conferences, and coordinating workshops among mission EPO programmes for both classroom educators and out-of-school time programmes.

**Where to learn more**

The NASA SMD primary point of contact for the IYA is Dr. Hashima Hasan. Her deputy for the effort is Doris Daou. Dr. Denise Smith, Mary Dussault and Leslie Lowes are the NASA Forum leads responsible for coordinating the planning and implementation of the programme. As the programme continues to take shape, a specific internet portal will be put in place to access the NASA SMD effort.

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