

European Planetary Science Congress, 24 September 2008

Session: International Year of Astronomy 2009

Report by Lee Pullen



With IYA2009 seeming to approach faster than ever, preparations have gone into over-drive. [Europlanet's European Planetary Science Congress](#), held this year in the German city of Münster, is well-known for its sessions on public engagement. A morning of "Outreach and Amateur Astronomy" was dedicated to IYA2009 talks, keeping interested parties abreast of developments. The presentations proved popular, drawing a crowd of those directly involved with IYA2009, as well as those whose interest had been sparked by the conference programme.



Fig.1 - Jean-Pierre Lebreton, Europlanet Outreach Activities Coordinator



Fig.2 - Alice Wesser, JPL Outreach coordinator, Session Convener.

Jean-Pierre Lebreton, Europlanet Outreach Activities Coordinator, began by introducing the session and specifically praising Pedro Russo's efforts and highlighting how busy he is at this point. The [excellent material on astronomy2009.org](#) was stressed, as was the fact that multiple languages are featured. Then the [official IYA2009 trailer](#) was shown to the hushed audience, setting the scene for the morning's talks.

Web-Based Games to Engage Audiences

Kevin Hussey, Manager of Visualization Technology Applications and Development at the Office of Communications and Education, Jet Propulsion Laboratory, opened by giving a fascinating presentation called **Virtual space exploration: let's use web-based computer game technology to boost IYA2009 public interest**. He spoke about computer game technology, and how it can be used to boost public interest. To begin with he explained how web-based video games allow the people to “see” in space as if they were riding aboard a spacecraft as it conducts its mission. He stressed how web-based games must be far more compressed than those traditionally used on consoles such as Playstations. Typically, web-based games must be under 20MB.

An example was shown, called [Cassini at Saturn Interactive Explorer \(CASSIE\)](#). This was used on a computer to load a 3D model of the Saturn system and the Cassini spacecraft. It was graphically very impressive, especially considering the limits of web-based games. Another bonus is that it is easy to research additional information on the web, allowing curious users to pursue their own lines of investigation. Kevin then explained about “mission mode” and how it shows Saturn from Cassini’s perspective. Luckily the speed can be changed, so it doesn’t take several years to reach your destination! The data used in the software is scientifically accurate and specific events can be selected, massively boosting its educational use. This software has great potential to be an effective teaching aid, engaging people such as visual learners who benefit from the strong graphical elements.

In answer to a question from the audience, Kevin pointed out that the software is not a heavy load on the server, as graphics cards on users’ computers are used. In fact, hundreds of thousands of people could use this program simultaneously.

Kevin summarised by highlighting the need to find new ways to engage the youth in Solar System exploration. It was an excellent talk which made all in attendance excited at the prospect of using the software for IYA2009.

Cassini Scientist for a Day Program

Next came Mike Evans, and a presentation titled **European participation in the JPL Cassini Scientist for a day program**. [This venture](#) is an opportunity for children aged 5-11 to experience life as a planetary scientist. The Jet Propulsion Laboratory (JPL) provides Quicktime movies of Cassini engineers and scientists arguing the case for each of the targets. Students are given a choice of locations in the Saturnian system and then challenged to research an aspect, such as the rings, and present a scientific argument about why it will produce valuable results. They then write a 500 word essay explaining their decision, and these may be judged.

The JPL essay competition is currently primarily for students in the United States, but there is hope that this will change in the future due to the vast amount of interest. 1000 entries recently came from India, for example, which rather overwhelmed JPL staff.

The project has been adopted in Britain, headed by Queen Mary London University. This institution recognised the potential in Cassini Scientist for a Day and has run a version of the event for students aged 11-18. Mike praised JPL’s support and explained that Queen Mary staff judge the essays

themselves. This university has taken the next step and integrated Cassini Scientist for a Day into its wider programme of outreach activities, often in collaboration with other organisations.

As for essay writing competition prizes, winners are taken to London and participate in a JPL video conference where images are discussed and questions answered. Photo quality poster sized prints of the images are also presented. Impressively, winners are invited to a House of Commons reception hosted by the Parliamentary Space Committee. Winning essays are hosted on the JPL website. Queen Mary are planning on printing postcards advertising the Cassini Scientist for a Day project.

To date, nothing is certain regarding this outreach venture and IYA2009. There is certainly much hope that JPL will continue with it throughout 2009, and if so then Queen Mary will run competitions in Britain. Ideally, official participation of other countries will occur, but the language barrier problem is a hurdle to overcome as translating can be time-consuming.

The European Space Agency's Plans for IYA2009

Next, Jean-Pierre took to the stage more to explain **ESA's plans for IYA2009**. The central question to discuss was "what is astronomy today?" He emphasised that astronomy research and knowledge has been accelerating recently, especially considering the thousands of years where humans were limited with naked eye observations. Compare this with the last 40 years in space, and the current dynamic situation is clear. We may well be on the cusp of making new vitally important discoveries in the Solar System, and beyond. Jean-Pierre gave examples from the last ten years, including knowledge of the accelerating Universe, finding 300 exoplanets, and robotic exploration of worlds such as Mars and Titan. 2009 will no doubt continue this tradition, placing IYA2009 well within this flurry of activity.

He then stressed cutting-edge current research, such as Herschel, the largest space telescope, obtaining early images of the Universe, exploring Titan and riding on a comet. This led to his point that astronomy today is heritage and vision. It rolls over 15 year-long planning cycles, with the next being called Cosmic Vision.

As for ESA's IYA2009 themes, these will include European heritage, explaining the accelerating timeline of astronomy, "hot" discoveries, distance and reach, in situ exploration, and missions throughout time. It is a wide range which promises to have significant impact.

ESA's direct contributions will include a Cosmic Vision DVD and exhibition, an IYA2009 Opening Ceremony, The Planck Dome, Herschel Roadshow, and Herschel and Planck educational kit by Spektrum der Wissenschaft. Other impressive efforts are placing the IYA2009 logo on the ARIANE V faring for the launch of Herschel and Planck, live satellite observations to complement ground-based ones, spotting ESA satellites with telescopes, and a dedicated website, astronomy2009.esa.int.

Proving the value of face-to-face meetings such as this at the Congress, Jean-Pierre expressed interest in the Cassini Scientist for a Day project, and the potential for ESA contributions throughout IYA2009.

Finally, in the question session, a representative from Germany highlighted ESA's contribution toward the [Eyes on the Skies DVD](#), which will likely be shown in all German planetariums.

The Copernicus Project

Following Jean-Pierre was Elisabeth Ledersberger-Lehoczky, talking about **the Copernicus Project for IYA2009**. She is a Hungarian artist, specialising in mixing art with science. Her project is a three part exhibition: artifacts about Copernicus, astrophotography from early imaging systems, and then selected works from contemporary art. Individual cultural institutes throughout Europe sent samples for the exhibition, and the most appropriate were selected. It will be shown first in Hungary, then Austria, then Vienna.

For IYA2009, the exhibition will be made available to institutions throughout Europe. Using art to explain science is a useful way of engaging audiences unenthused with what are seen as technical subjects. Funding is being sought, and cooperations between institutions such as Europlanet and ESA are possibilities. Elisabeth then gave booklets to interested individuals.

Saturn Observing Sessions

Jane Houston Jones, JPL Cassini and Solar System Public Engagement, followed with: **What's up? Use the night sky to engage the public through amateur astronomy in IYA; What's Up monthly astronomy themed podcasts; Annual Saturn Observation Night world-wide celebration of Saturn Opposition.** [The Saturn Observation Campaign](#) is an international collaboration which boasts strong partnerships. Since 2003, groups of people around the world have banded together to observe the ringed planet, and then share their images.

Jane said that Saturn is *the* planet that people will look at throughout 2009. Two Saturn observations events have been done before, in 2007 and 2008, which were used to help prepare for the IYA2009 version. Thousands of people have participated in the past, with great enthusiasm. Some success stories were recounted, of young people observing Saturn and being inspired to study science further. The next Saturn opposition is on 8 March 2009. The Saturn Observing Nights will occur between 8-28 March, spread over time to avoid the full Moon and also help limit the effect of cloudy nights. It will be featured in the [IYA2009 NASA / JPL online schedule](#).

Finally, Jane mentioned her monthly podcast – [what's up in the night sky](#). This receives in the region of 1.5 million downloads, and she will tie in topics with IYA2009 events throughout next year.

Using New Media to Promote IYA2009

Veronica McGregor, Manager of Media Relations at the Office of Communication and Education, JPL, then gave a talk titled **How to engage the Media for IYA2009?** This topic was highly anticipated, as promoting IYA2009 is key to its success. She explained how newspapers and other “old” media forms are rapidly losing popularity, so “new” media methods must be explored. In 2003, JPL began web updates, podcasts and web videos. These are, however, a monologue to the public, and do not encourage interaction. She then provided some interesting statistics: as of 2008, there are 200 000 000 blogs, 73% of online users have a read a blog, 45% has started a blog, there are 100 000 000

videos on YouTube, 83% of online users watch video clips, and 57% of active users make use of a social network site. The impact of new media is undeniable!

A case study example was then given. [Twitter.com](https://twitter.com) is known as a microblog. Posts are limited to 140 characters (approximately two sentences) and it boasts an estimated one to two million regular users, although there are over 14 million accounts. Twitter is fast, simple, easy to maintain, is best used to promote dialogue, and can be managed by a single person.

A Twitter page, <http://twitter.com/marsphoenix>, was created to deliver Phoenix landing updates over a three day holiday weekend. The first “tweets” were posted three weeks before landing. Without any advertising except for blog mentions, they had 3000 followers by landing day, 25 May. Three days later, this number had risen to nearly 9000. This interest led to reports in the New York Times, Washington Post, ABC News, The Guardian, Nature.com and other media outlets. The result was like a rolling snowball, contributing to the current figure of over 35 000, and the blog is at number six in the Twitter top ten.

Veronica then explained the MarsPhoenix blog in more detail. She has personified the Phoenix lander by giving people updates as if she were the probe. Twitter only allows short messages, meaning that each post can only give people a single fact. Members of the public appreciate the personal approach and reply to posts with questions. Veronica answers them “in character” as MarsPhoenix. She remarked that as soon as she began opening conversations with users, the number of visitors rocketed.

She summarised by explaining that social media allows a dialogue with the public. Feedback is rapid and useful. The public “buys in” and trusts the answers. There is also potential to open up new audiences that may not have paid attention to space exploration in the past. It’s an easy yet exciting way for people to follow science developments.

Once the mission ends, the MarsPhoenix Twitter will promote IYA2009 by encouraging followers to connect to other missions and space events. Veronica stressed that it will not be successful if people are directed to missions, events or products that don’t follow the rules of social media: honest, transparent, responsive, compelling, interesting and human. Finally, she recommended that IYA2009 Twitter feeds will be more popular if they follow specific missions rather than advertising general news.



Fig.3 - During the IYA2009 Session in the Europlanet’s European Planetary Science Congress.

To Conclude

The IYA2009 session was well received, and the topics discussed provided food for thought. Europlanet's European Planetary Science Congress has a well-deserved reputation for its public engagement and outreach discussions, and this has been maintained in Münster. If the ideas mentioned come to fruition as intended, which they look set to do, they will certainly help IYA2009 achieve its goals.

More information:

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