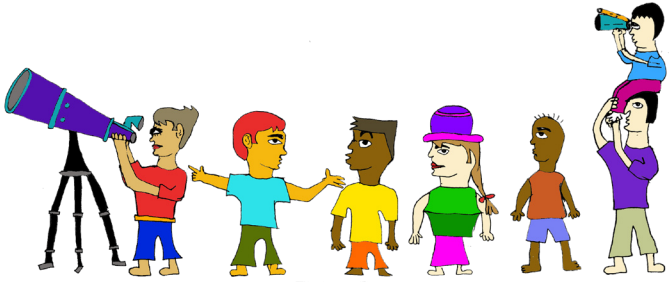
GALILEO
Teacher Training Program

# NEWSLETTER 2
# 2011

www.galileoteachers.org

# EDITORIAL



*May all the people in the world have the opportunity to look through the "eyes" of a telescope and wonder with the beauty of our Universe !!*

Welcome to our ***second edition of the Galileo Teacher Training Programme newsletter***. We hope that you find it useful and its reading interesting.

This issue is filled with a lot of new challenges and nice success stories. The citizen science is thriving and LCOGT is just warming up to present us several opportunities to enter the world of research and drive our student's interest to science to completely new and innovative grounds. Following the International Astronomical Union vision for its contribution to the developing world, an Office for Astronomy Development was created in Cape Town and is under the direction of the very talented Kevin Govender who shares his vision in this newsletter. Universe Awareness brings us good news of their European efforts with nice contributions to the construction of children awareness of our Universe. New and old campaigns fill the pages with their results for the school year just ending in the Northern Hemisphere. Educational games find their way through classroom and after school activities as Universe Quest gain the interest of girls in the US and boys and girls in Portugal. A very nice example of public outreach in Brazil with astronauts making the dream come true for hundreds of kids. And to finish, a new call for workshop proposal opening the possibility for your contribution to change the world teacher by teacher.

# LCOGT – Las Cumbres Observatory Global Telescope Network

*by Edward Gomez*

Many exciting things have been happening over the past few months. We have packaged up domes for our 1m telescopes and shipped them to our site in Chile. The progress of our 1m and 0.4m telescopes is still progressing well, with the pilot of each being commissioned in our Santa Barbara, CA headquarters.

Professional and citizen astronomers have used our network as part of international efforts to observe: a new supernova in M51; the Earth-orbit crossing asteroid 2011MD; occultations of Pluto and Charon. We were lucky enough to be featured on the US TV show Jeopardy! in April, which drove thousands of people to our website (and resulted in its melt-down!).

In the coming months we will be launching our first citizen scientist project, called Agent Exoplanet, and will be inviting all GTTP and GHOU members to take part.

One of the many star parties we have hosted at Sedgwick Reserve, CA.

*For more news, go to our website http://lcogt.net/*

# GLOBE at Night Citizen-Science Star-Hunt Campaign to Save Energy While Saving the Night Sky

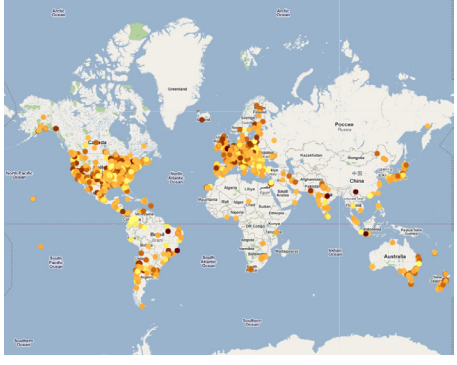
*by Connie Walker*

The GLOBE at Night program (www.globeatnight.org) is an international citizen-science campaign to raise public awareness of the impact of light pollution by inviting citizen-scientists to measure their night sky brightness and submit their observations to a website from a computer or smart phone. Light pollution threatens not only our "right to starlight", but can affect energy consumption, wildlife and health. The GLOBE at Night campaign has run for two weeks each winter/spring for the last six years. People in 115 countries have contributed 66,000 measurements, making GLOBE at Night one of the most successful light pollution awareness campaigns.

Check out the new web application data submission process. The website is easy to use, comprehensive and holds an abundance of background information. The database is usable for comparisons with a variety of other databases, like how light pollution affects the foraging habits of bats.

Once again the GLOBE at Night Team would like to express their thanks to all the participants who contributed measurements locally to make a global difference.

*http://www.globeatnight.org/*

# GLOBE at Night Results for 2011

*by Connie Walker*

More countries than ever before participated in the 2011 GLOBE at Night campaign. Nearly all of the 14,249 measurements were taken by 48 of the 115 countries. The top dozen contributing countries accounted for 85% of all GLOBE at Night measurements. Nearly half of all the measurements were from the United States (49 states plus the District of Columbia). 10% of all measurements (or 1400 measurements) were from Arizona. The country with the next largest contribution was Poland (with over 1200). India came in third with over 700 measurements. The other countries in the top dozen were South Korea, Croatia, Puerto Rico, the Czech Republic, Chile, Germany, Colombia, Canada and Japan (with measurements between 300 and 450).

Every 3 out of 5 measurements of limiting magnitude gave a value of 3 or 4 mag, typical of measurements contributed by medium to larger sized cities. 82% of the measurements (about 4 out of 5 measurements) were taken in light polluted areas and less than 18% (almost 1 out of 5 measurements) from areas where you could see the Milky Way Galaxy. (The numbers are consistent with what the International Dark-Sky Association finds for the United States.)

*Thanks to all who participated!*

# International Asteroid Search Campaign

*by Patrick Miller (IASC coordinator)*

Since October 2006, the International Astronomical Search Collaboration (IASC = "Isaac") has conducted asteroid search campaigns for middle school, high school, and college students. The program currently reaches 300 schools per year in more than 40 countries. Thus far, students have made 259 Main Belt asteroid discoveries and 2 near-Earth objects, one of which poses a potential hazard of hitting Earth.

Over the past year IASC has three new collaborators. The first is the Panoramic Survey Telescope & Rapid Response System (Pan-STARRS, University of Hawaii). This is the world's largest sky survey in search for transient astronomical events (e.g., moving objects, variable stars, supernovae).

The camera used by Pan-STARRS on its 1.8-m RC telescope covers 7o of sky and produces images with 1.4 billion pixels…in 40 seconds and to a background magnitude of 23. Images from this telescope are partitioned and distributed to schools in asteroid search campaigns.

The second is the National Astronomical Observatories of China (Beijing) using the 60-90 cm Schmidt telescope at the Xinglong Station near the Great Wall, a test search campaign was conducted with 15 schools from China. Finally, the third is Astronomers Without Borders in support of the Global Astronomy Month held April of each year. In 2012 IASC will organize one special search campaign and online Internet telescope sessions for middle school and high school students.

Starting in January 2012, IASC will change to 5-week campaigns. Currently the campaigns are 6 weeks, 8 per year. With 5 weeks, there will be 10 campaigns increasing the number of schools to 450 that can participate each year.

IASC asteroid search campaigns are provided at no cost to the participating schools. Teachers interested in having their students participate can contact IASC Director Dr. Patrick Miller at *iascsearch@hsutx.edu.*

# Office for Astronomy Development

*by Kevin Govender*

The OAD officially began its work on 1st March 2011 when I assumed the position of Director. The official launch took place in Cape Town on 16th April 2011 and was attended by several dignitaries including the South African Minister of Science and Technology Mrs Naledi Pandor. The first three months of the OAD have been dominated by logistics regarding the premises; reviewing the history of IAU activities; drawing up an implementation strategy and budget for the OAD; communicating with and meeting several potential partners and stakeholders; the launch of the OAD and steering committee meeting; developing the OAD website; and appointing other OAD staff. After an intensive selection process, Nuhaah Solomon was appointed in early June as the second staff member of the OAD. At the time of writing this the search is still underway for the third full time staff member. We also have an open call for volunteers, as well as a call for expressions of interest to host regional nodes, on the OAD website.

# Appeal for partners:

The OAD represents a significant milestone in the history of the IAU. It is a point of recognition and acknowledgement of the significant impact that the astronomy field can, should, and does have on society as a whole. The IAU has chosen to take this action of establishing the OAD to realise the tangible benefits of our field to humankind and the developing world in particular – the essence of its decadal strategic plan.

The vision of the OAD is simple: Astronomy for a better world! I appeal to every individual in the astronomy and related communities to partner with us in order to realise this vision and make the world a better place. We will target three areas for development: (i) university education and research; (ii) young children and school education; and (iii) public outreach. Why these areas? Education is probably the most sustainable form of development; and in the current state of the planet, the development of the human mind is at the root of ensuring a better world for all. Astronomy provides the fertile soil upon which to grow scientific method and rational thought. Its presence and influence in just about every culture around the world places it in a unique position to be used as a tool for positive impact on the development of our world. Our most important, immediate tasks at the OAD are twofold: (i) to set up regional nodes – organisations and individuals who will champion efforts in their regions; and (ii) to set up sector task forces which will operate globally in each of the three targeted areas of development. Such structures are essential as we recognise that one central office cannot possibly have the reach or the expertise required to achieve the vision. We need the people on board who know the local situations. We need the skills on board to deliver the astronomical content in a meaningful way. The OAD will facilitate and coordinate activities, striving to find the funding and resources that will feed these skills and realise the vision.

The process of setting up these structures is currently underway and we encourage you to visit the OAD website to register your interest in becoming a partner, either as an individual or an organisation. We also encourage you to join the OAD mailing list to stay informed and, if you are able, volunteer some of your skills towards the activities of the OAD. Everything you need to become involved is on the OAD website *(www.astronomyfordevelopment.org).*

I would also like to invite your input and suggestions at any time. The OAD will be shaped by a spirit that keeps it dynamic, transparent and humble – always welcoming input from its stakeholders. If you have an idea that uses astronomy for development, the OAD is here to help you make it happen!

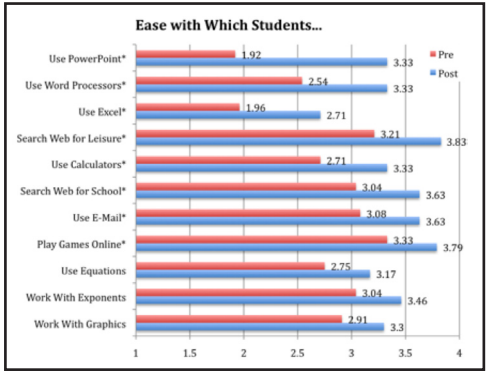
# Universe Quest Succeeds in Moving Girls in the Direction of the Stars!

*by Carl Pennypacker*

Over the past three years, the Universe Quest program has worked with two groups of students from economically challenged schools in not easy neighborhoods. The idea was that astronomy and computer activities would help change their technical self-efficacy. Through the process of the program, we have learned to help girls feel more confident about technology, all the while learning a lot of astronomy, which they love.
A total of 24 girls (19 from Elmhurst Alliance and 5 from West Oakland Middle School) completed pre and post surveys. The samples are too small to make meaningful comparisons by school; therefore all results are presented for the sample as a whole.

*Acquisition of information technology skills.*
Universe Quest girls reported a significant improvement in most of the skills on which they were surveyed. By the end of the program, they reported being able to do almost all activities without help save for using Excel. Girls even indicated being able to help others with searching the web for school and leisure, using email and playing online games. They reported the largest skill increases in their ability to use Powerpoint and word processors. In each case, they progressed from being able to do these activities with help to being able to work on their own. Smaller increases on skills such as using email and searching the Web may be due to high pre survey skill ratings that left little room for improvement.

*Figure-1*
*Self-reported Information Technology and STEM skills, UQ Cohort 2 (n=24)*




** Pre-post difference is statistically significant, p<0.05*

*Scale:*
1=I've never done this;
2=I can do this with help;
3=I can do this without help;
4=I can help others with this.

*Attitudes toward science and technology.*
Questions on the pre and post surveys asked students about their beliefs on gender differences in science, their interest in science, their perception of the importance of learning science, and their views on the relevance of science to the general public. Figure 2 displays responses to questions about gender and science. Girls significantly changed their attitude toward women's ability to get ahead in math and science careers. They were more likely to disagree on the post survey that there were gender differences. Pre-post differences to the other two gender in science statements were smaller and not statistically significant. For instance on the post, girls slightly strengthened their belief that girls who are good at math and science are just as popular with boys as other girls.

All in all, Universe Quest is succeeding, and we are getting closer to sharing our materials with all interested folks on the planet!

# Universe Quest in Portugal

*by Rosa Doran*

In Portugal the project had a slight different approach. It was inserted in regular school programs and astronomy clubs. All schools involved are already participating in other regular offers by NUCLIO (the association promoting Universe Quest in Portugal). The programme started with 10 schools in the Lisbon area. Half of them reached the final goals and had students producing pedagogical games.

*Escola Ferreira de Castro* – Students from 9th grade, studying under a special program (CEF) produced games with the purpose of enhancing their ICT skills and creating games with Physics content. Under the supervision of their Physics teacher, Prof. Francisco Lobo, they have successfully achieved the main goal. However their excitement was huge in the beginning, with the construction of the environments and characters choice, but highly decreased when they had to start collecting content for their game. Nonetheless their work was appreciated by a special board that assessed very positively their achievements.

*Escola Secundária da Cidadela and Colégio Pedro Arrupe* – Students from the 7th grade had as a project assignment in a discipline called Project Area to produce games with Physics contents. Their motivation and engagement varied within the group but, as stated by the teachers, gained several important skills among them the use of text processing, production of ppt presentations, creation of movies, creation and editing images, etc. They also trained the acquisition and selection of information on the web. Their work was performed under the supervision of the Physics Teacher, Prof. Leonor Cabral, and the History teacher Prof. Raquel Dias.

*Escola Matias Aires* – In this case we had students from an Astronomy Club preparing a challenge for the Astronomy Day in the school. They were very successful and attracted the interest of dozens of students that participated in a fun Astro-Paper about astronomy. Their work was all performed under the supervision of the Physics teachers, Prof. Luísa Carreira and in after school hours.


*Escola Leal da Câmara* – In this case we had students of the secondary level, leaving school to enter University next school year. Their objective was to produce games for primary school students and teach them topics related to their curricula, namely: Solar System and Celestial Bodies movements. They were very successful and highly motivated during the whole process. Their work was implemented in primary schools of the district. The work was supervised by their Physics teachers.

The projects ended in a competition were the students evaluated their peers work. ***It was a successful enterprise to be repeated next year.***

# Discovering the Universe

*by Elisa Abrantes, Filipa Ferreira, Gustavo Santa, Miguel Pina e Pedro Ferreira*


We are a group of 17 and 18 year old students from the 12th grade at Escola Secundária de Vergílio Ferreira in Lisbon, Portugal, and we developed the theme "Astronomy" in the school subject "Project Area". In this subject students are supposed to form work groups and create an annual project which contains a scientific and statistic investigation.

"Discovering the Universe" appeared after great reflection on various themes. However, only this one gathered all the potential we were looking for: it would allow us to involve the school community in the subject in an educational, dynamic and unusual way.

The main goal of the project was to motivate and create interest among the students and the school community in Astronomy. To do so, we decided to create an "Astronomy Week", a time dedicated to lectures performed by experts (Dr. Henrique Leitão, Dr. Guilherme de Almeida, Dr. Rosa Doran, Dr. Rui Agostinho and Dr. José Saraiva). During this time, we also organized a nocturnal observation of stars and other objects - promoted by NUCLIO, an exhibition about various themes related to astronomy and we also fixed the school's telescope.

However, the most important feature of this project was a 6x4 meter wall, painted by hand by the members of the group, representing a star chart. It took three months, 120 € and the presence of, at least, 3 people 6 hours per day. It was a big challenge. To guarantee the authorization of the school director we made the "Star Chart Project", in which we explained that we were going to paint a blueprint of the celestial sphere with the stars and constellations and also a clarifying caption to help with reading the map.


*Hand painted wall in Vergílio Ferreira Secondary School*

We didn't want to do just a good job. We wanted something perfect and scientifically correct. None of us has had Visual Arts classes in the curricula, so many students and teachers thought we wouldn't be able to do a good job. In the end, the whole school agreed that the final result was extraordinary.

To guarantee a correct and accurate work, we had to develop extensive scientific research. In order to do this, we had the support of the Calouste Gulbenkian Planetarium and of Dr. Guilherme de Almeida, one of the authors of the star chart we painted.

Through the development of this project, we acquired new working methodologies, knowledge in Astronomy, Physics and Astrophysics, good ability in statistic data analysis, time management skills, emotional intelligence, networking with different stakeholders, such as universities and institutes, and the bases for further research.

Having a good teacher in charge (Teacher Rita Lopes Marcelo) helped a lot since the person who guides you through the project has to be firm and determined. The teacher faces as many challenges among his peers as the students do. But both have to stay firm in their belief of being a good and capable team. **While doing projects such as this one, you may cross some people who tell you that you'll never be able to achieve your goals. Don't let them get you down. Instead of that, make yourself try even harder just to show them that you are capable of doing that and much more. Even if something is very unlikely to happen, don't lose hope and keep on fighting for it. You never know what you may find.**

# Light Pollution

*by Rosa Doran*


Students under the supervision of Nelson Alves Correia convinced school principal to turn-off light pollution lamps in the school. This activity was developed after the educator received training in light pollution activities during a training session promoted by Connie Walker in Lisbon, Portugal. Connie was invited by NUCLIO (Núcleo Interactivo de Astronomia). Connie promoted a training session during JENAM 2010 in which over 20 teachers participated and Nelson was one of the educators attending the venue.

The project is integrated in the Dark Skies Rangers Campaign that aims to create awareness among educators and students about the growing problem of light pollution. The main objective is to foster their active participation in the fight against this waste of energy and annoying star steeling factor.
*http://www.darkskiesawareness.org/DarkSkiesRangers/*

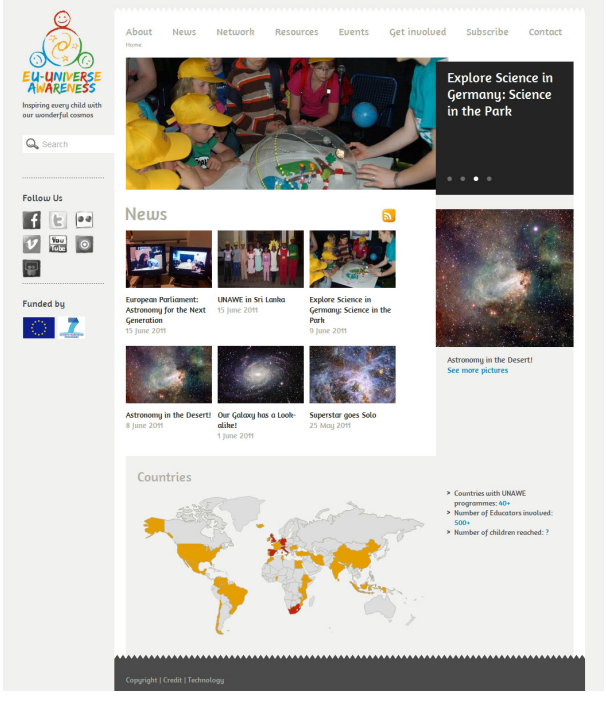
Nelson implemented the project during the school year of 2010/2011 and had successfully accomplished the main objectives. The students involved not only recognized the problem at the school but also actively promoted a positive change in the school.

Light polluting lamps

Students presenting the report to the school principal

The successful outcome

*The students and the teachers became the first Dark Skies Rangers in Portugal.*

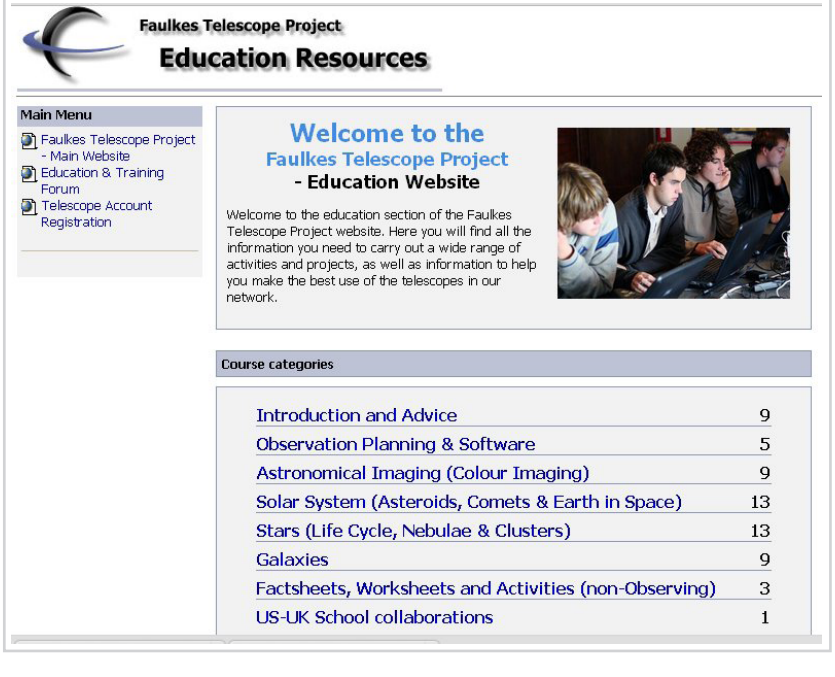



# European Universe Awareness

*by Pedro Russo*

Last year, the European Union awarded a grant of 1.9 million euros to the education programme Universe Awareness (UNAWE), which aims to use astronomy to inspire children aged 4-10 years to develop an interest in science and a sense of global citizenship. The grant will fund a three-year project called European Universe Awareness (EU-UNAWE), which builds on the work of UNAWE to develop programmes in six countries: Germany, Italy, the Netherlands, South Africa, Spain and the United Kingdom. A small part of this grant has been used to launch a new EU-UNAWE website, which is also the new hub for UNAWE activities around the world. The website features news, upcoming teacher training events, astronomy news stories for children, a repository of other UNAWE education materials, and much more!

*www.eunawe.eu*




# Faulkes Telescope Educational Resources

*by Sarah Roberts*

The Faulkes Telescope Project has many free resources available aimed at helping teachers teach Science and Maths in the classroom through the use of Astronomy. The resources contain paper-based activities, quizzes, posters and online activities and can be found at: *http://resources.faulkes-telescope.com*

# "Bajo un mismo cielo" Cartilla de Actividades "Under the same sky" Handbook of Activities

*GalileoMobile team*

This handbook is a compilation of 20 hands-on activities related to basic Astronomy, designed for students of different ages. The activities are described in a simple and comprehensive language and they can be carried out with low-cost resources. The first release of this handbook is available in Spanish.

Our methodology is to convey basic physical concepts in an interactive and playful way. We invite teachers and students to join their curiosity and creativity in an exciting trip around the Solar System, to sightsee around constellations, to explore the moon craters and make a trip through the Universe. The activities included in this handbook were especially adapted for the GalileoMobile project, which took place during the International year of Astronomy in 2009, when the project visited numerous schools in South America.

*"Under the same sky". Would you like to have a look?*

*Download link: http://www.galileo-mobile.org/node/25*
*Read more: http://www.galileo-mobile.org/*

*http://galileomobile.wordpress.com/2011/06/06/presentacion-en-sociedad-de-la-cartilla-de-actividades-debut-in-society-of-the-handbook-of-activities/*

estrelas e planetas

# Estrelas e Planetas
## Stars and Planets

*by Miguel Neta*
*(Loulé's Secondary School)*

'Estrelas e Planetas' (Stars and Planets) project was developed during the academic year 2009/2010 and was tested on three 3rd grade classes of D. Francisca de Aragão Primary School in Quarteira, Portugal.

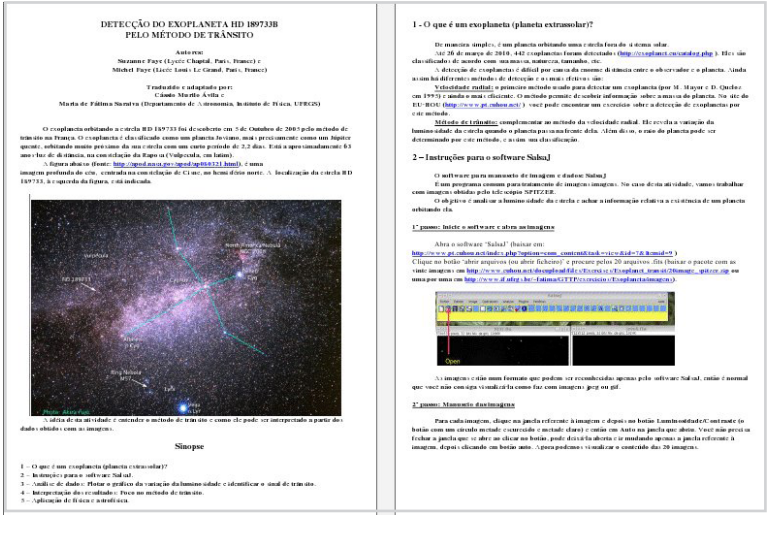
The aim was to encourage the learning of science and the natural and physical phenomena through the construction and manipulation of materials that promote the themes - in this case astronomy.

Throughout the project the students built a small book containing three themes of astronomy: differences between stars and planets, the solar system and the phases of the Moon. To each topic was devoted two sessions of about an hour each: the first to teach the theoretical aspects of the theme and the second session to assembly two pages of the book.


Two of themes the from the 'Estrelas e Planetas' book.

All materials used (for theoretical sessions and for the construction of the book) and videos of the finished book are available for free use in www.miguelneta.com/estrelaseplanetas.
So far there is only a Portuguese version but soon will be published in English as well.

This project won the Excellency Prize 2011 of Casa das Ciências, a portuguese site for teachers supported by the Calouste Gulbenkian Fundation (*www.casadasciencias.org*).



DETECÇÃO DO EXOPLANETA HD 189733B
PELO MÉTODO DE TRÂNSITO

Autores:
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O exoplaneta orbitando a estrela HD 189733 foi descoberto em 5 de Outubro de 2005 pelo método de trânsito na França. O exoplaneta é classificado como um planeta bvizinho, mas precisamente como um Júpiter quente, orbitando muito próximo da sua estrela com um curto período de 2,2 dias. Está a apro-ximadamente 63 ano-luz de distância, na constelação da Raposa (Vulpecula, em latim).

A figura abaixo (fonte: http://apod.nasa.gov/apod/ap060321.html), é uma imagem profunda do céu, centrada na constelação de Cisne, no hemisfério norte. A localização da estrela HD 189733, à esquerda da figura, está indicada.



A idéia de nesta atividade é entender o método de trânsito e como ele pode ser interpretado a partir dos dados obtidos e com as imagens.

Sinopse

1 – O que é um exoplaneta (planeta extrasolar)?
2 – Instruções para o software Salsaj.
3 – Análise de dados: Plotar o gráfico da variação da luminosidade e identificar o sinal de trânsito.
4 – Interpretação dos resultados: Foco no método de trânsito.
5 – Aplicação de física e astrofísica.

1 - O que é um exoplaneta (planeta extrassolar)?

De maneira simples, é um planeta orbitando uma estrela fora do sistema solar.
Até 20 de março de 2010, 442 exoplanetas foram detectados (http://exoplanet.eu/catalog.php ). Eles são classificados de acordo com sua massa, natureza, tamanho, etc.
A detecção de exoplanetas é difícil por causa da enorme distância entre o observador e o planeta. Ainda assim há diferentes métodos de detecção e os mais efetivos são:
Velocidade radial: o primeiro método usado para detectar um exoplaneta (por M. Mayor e D. Queloz em 1995) e ainda o mais eficiente. O método permite de colher informação sobre a massa do planeta. No site do EU-HOU (http://www.pt.rahoo.net/ ) você pode encontrar um exercício sobre a detecção de exoplanetas por este método.
Método de trânsito: complementar ao método da velocidade radial. Ele revela a variação da luminosidade da estrela quando o planeta passa na frente dela. Além disso, o raio do planeta pode ser determinado por este método, e assim sua classificação.

2 – Instruções para o software Salsaj

O software para manuseio de imagens e dados: Salsaj
É um programa comum para tratamento de imagens-imagens. No caso desta atividade, vamos trabalhar com imagens obtidas pelo telescópio SPITZER.
O objetivo é analisar a luminosidade da estrela e achar a informação relativa à existência de um planeta orbitando ela.

1° passo: baixe o software e abra as imagens

Abra o software 'Salsaj' (baixar em:
http://www.pt.rahoo.net/index.php?option=com_content&task=view&id=7&Itemid=9 )
Clique no botão "abrir arquivos (ou abrir ficheiros)" e procure pelos 20 arquivos .fits (baixar o pacote com as vinte imagens em http://www.rahoo.net/downloadFile/cExercicio/Exoplanet_transit/20image_spitzer.zip ou uma por uma em http://www.if.ufrgs.br/~fatima/GTTP/exercicios/Exoplanet/images/ )



As imagens estão num formato que podem ser reconhecidas apenas pelo software Salsaj, então é normal que você não consiga visualizá-la como faz com imagens .jpeg ou .gif.

2° passo: Manuseio das imagens

Para cada imagem, clique na janela referente à imagem e depois no botão Luminosidade/Contraste (o botão com um círculo metade contraído e metade aberto) e então em Auto na janela que abrirá. Você não precisa fechar a janela que se abre ao clicar no botão, pode deixá-la aberta e ir mudando apenas a janela referente à imagem, depois clicando em botão auto. Agora podemos visualizar o conteúdo das 20 imagens.

# Astronomy activities in Portuguese

*by Maria de Fatima Oliveira Saraiva*
*(Universidade Federal do Rio Grande do Sul )*

The exercise "Discovering and exoplanet by the transit method", presented by Michel Faye in the first GTTP session in South America, in 2009, is now available in the exercises page of GTTP – Porto Alegre site (http://www.if.ufrgs.br/cref/gttp/exercicios.htm), in Brazilian-Portuguese language. In this site we are putting together a varied list of activities for practicing astronomy in the classroom that may be useful for Portuguese speaking Science teachers.



# World Wide Telescope

*by Lech Manckiewicz*

WorldWide Telescope (or WWT) is a Virtual Planetarium by Microsoft. It is a free software, a tribute to memory of Jim Gray (*http://en.wikipedia.org/wiki/Jim_Gray_(computer_scientist)*).

WWT has been designed to let ordinary people wonder the Universe as astronomers see it. Capable of using scientific images stored in the Virtual Observatory format, WWT can takes you in a virtual journey through our Universe using images from variety of ground-based and space telescopes.

In fact, WWT allows you to make your own tours. A special program, WWT Ambassadors, *https://wwtambassadors.org/wwt/* run by Alyssa Goodman and Pat Udomprasert from the Harvard Center for Astrophysics helps to develop customized resources. You may even combine images from your backyard telescope with those from the Hubble in one tour, illustrated with music and narration. Does it sound like a tool which stimulates creativity?

WWT has been available in English and a few of European languages, but it can actually be easily localised (i.e. translated) into your national language. Polish Hands-On Universe team has developed instruction which you can dowload from *http://www.pl.euhou.net/docupload/files/Tools/WWTPoPolsku/Interface/WWTInterface.rar*

The crusial point is to translate the configuration file, englishfromwebtemplate.tdf, into your national language. It is ordinary text file which looks like:

1 Select your language
2 This will restore user settings to their default values. Are you sure you want to proceed?
3 Microsoft WorldWide Telescope
4 You need 3d Graphics and DirectX installed to run this application
5 Your tour has unsaved changes. Do you want to save the changes before closing?
6 Tour Editor

You should replace English phrases by ones in your language, keeping the format of one phrase per line. Text should be encoded in the encoding typical for your language (for Polish we have used UTF-8), so we recommend that your use programmer's text editors for translation, as they allow you to define encoding. Programs like MS-Word, which use their own formats to store text will not produce useful results. The package contains Polish .tdf file as an example.

After the file is translated, look into wwtinterfaceinnationallanguage.doc for instruction how to set up the interface in your national language. Note that printscreens are in Polish, so you have to imagine them in your national language.

*Have fun and enjoy trips through the Universe!*

## MOON MOSAIC

*by Jose Luis Garcia Herrero*

2-picture mosaic obtained by students (15-17 years old): Philips Tou webcam in 130m f5 Newtonian. Webcam control: K3CCDTools. Video edition: RegiStax + PhotoShop. This image was done under their volunteer work after class hours.

*http://www.iescarmenmartingaite.com/ficheros/matematicas/astro/mosaico%20luna.jpg*



## New supernova in M51

*by Sarah Roberts*

On the 31st May 2011, a new supernova now designated SN2011DH exploded in the Whirlpool galaxy M51. This galaxy has been imaged with the 2m Faulkes Telescopes.

# Ephemeris for April to June

*by Grom Matthies*

*All times in UT*
*Adjust for your time zone and daylight saving time*
*Separations for Moon with celestial objects valid for mid-northern latitudes*



| *Date* | *Time* | *Details* |
|---|---|---|
| 18.07 | 11:14 | Moon near Neptune, Neptune 5,9° S |
| 20.07 | 05:02 | Mercury at greatest elongation 26,8° East |
| | | Evening sky event. Great for Southern Hemisphere observing Mercury pos-dichotomy phase (past half-Mercury). Mid-Northern latitudes views depreciated by shallow angled ecliptic at sundown. |
| 21.07 | 07:30 | Moon near Uranus, Uranus 6,4° S |
| | | A mere statistical event, where a 3/4 lit waning moon passes near a light bluish, almost undetectable spec in the sky we call Uranus. A 6º field does not fit in most binoculars. |
| 21.07 | 22:44 | Moon at apogee (404345 km) |
| 23.07 | 05:02 | Moon at Last Quarter |
| 23.07 | 23:15 | Moon near Jupiter, Jupiter 4,8° S |
| | | A nice half waning moon hovers not too far from bright, shiny Jupiter in a region somehow lacking bright stars. |
| 26.07 | 07:11 | Mercury at aphelion |
| 27.07 | 18:05 | Moon near Mars, Mars 0,5° N |
| | | This is a pretty conjunction where a small waning moon is in the vicinity of reddish glowing Mars. |

| *Date* | *Time* | *Details* |
|---|---|---|
| 30.07 | 00:00 | Maximum of Delta-Aquarid meteor shower (ZHR ~10/h) |
| | | This shower favors Southern Hemisphere observers. |
| 30.07 | 05:11 | Sun's Carrington rotation nr.2113 begins |
| | | If you like to log your observations of the Sun this number is for you. |
| 30.07 | 18:40 | New Moon |
| 01.08 | 10:10 | Moon near Mercury, Mercury 1,1°N |
| | | Dusk. A small waning Mercury meets a tiny waxing Moon crescent. Unfortunately the Sun is just around the corner and only a few selected places on Earth should have a decent chance to capture both in a single frame. |
| 02.08 | 20:56 | Moon at perigee (365760 km) |
| 04.08 | 10:29 | Moon near Saturn, Saturn 7,3° N |
| | | The planetary Lord of the Rings has Porrima nearby, while the Moon has Spica just north. |
| 06.08 | 11:08 | Moon at First Quarter |
| 09.08 | 08:50 | Venus at perihelion |

| *Date* | *Time* | *Details* |
|---|---|---|
| 13.08 | 01:00 | Maximum of Perseid meteor shower (ZHR >100/h) |
| | | Full moon all night, bright sky prevents decent meteor sightings. Perseids are plentiful but not to bright, so find a location where the sky is as dark as possible. |
| 13.08 | 08:49 | Venus at apogee |
| 13.08 | 18:56 | Mercury at perigee |
| 13.08 | 18:58 | Full Moon |
| | | Deep sky observation seriously compromised by flooding moonlight. Around this day it is easier to read a newspaper in the dark than hunting galaxies with telescopes. |
| 14.08 | 15:26 | Moon near Neptune, Neptune 5,4° S |
| 16.08 | 12:08 | Venus at superior conjunction |
| 17.08 | 01:04 | Mercury at inferior conjunction |
| 17.08 | 13:33 | Moon near Uranus, Uranus 6,2° S |
| 18.08 | 16:16 | Moon at apogee (405161 km) |
| 20.08 | 13:29 | Moon near Jupiter, Jupiter 4,9° S |
| | | Our natural satellite meets the biggest planet we have to show in the solar system. Aries serves as the background. |

| *Date* | *Time* | *Details* |
|---|---|---|
| 21.08 | 21:55 | Moon at Last Quarter |
| 22.08 | 09:22 | Neptune at perigee |
| 22.08 | 23:26 | Neptune at opposition |
| | | As such, Neptune is now in season to be observed. |
| | | Neptune's methane filled atmosphere feeds on the red portion of sunlight, rejecting most of the green and almost all blue light. This makes Neptune looking so blue. |
| 25.08 | 15:03 | Moon near Mars, Mars 2,8° N |
| | | Early morning, Gemini hosts a meeting between Mars and a waning moon. |
| 26.08 | 10:45 | Sun's Carrington rotation nr.2114 begins |
| 29.08 | 03:04 | New Moon |
| 30.08 | 17:30 | Moon at perigee (360857 km) |
| 30.08 | 17:30 | Jupiter stationary, then retrograde |
| | | Follow this planet in its surrounding for a few weeks before and after this date and see why the celestial sphere and planets motions caused so much head scratching to ancient studiers of the sky. |
| 01.09 | 00:10 | Moon near Saturn, Saturn 7,4° N |

| *Date* | *Time* | *Details* |
|---|---|---|
| 01.09 | 13:00 | Maximum of Alpha-Aurigids meteor shower |
| | | Usually a low activity shower with ZHR around 9/h, but on burst situations one can count with up to 30 meteors/h under perfect conditions. |
| 03.09 | 05:56 | Mercury at greatest elongation 18,1° West |
| | | Sightings limited to morning sky observers only. |
| 04.09 | 17:39 | Moon at First Quarter |
| 08.09 | 06:49 | Mercury at perihelion |
| 10.09 | 20:20 | Moon near Neptune, Neptune 5,4° S |
| 12.09 | 09:27 | Full Moon |
| 13.09 | 16:38 | Moon near Uranus, Uranus 5,8° S |
| 15.09 | 06:13 | Moon at apogee (406065 km) |
| 16.09 | 12:00 | Pluto stationary |
| | | As if it were not hard enough to find Pluto amongst the central star rich region of our galaxy as background, Today you won't even discern it by its movement (or lack of it). |
| 16.09 | 17:36 | Moon near Jupiter, Jupiter 4,5° S |
| 20.09 | 13:39 | Moon at Last Quarter |
| 22.09 | 17:01 | Sun's Carrington rotation nr.2115 begins |
| 23.09 | 08:11 | Moon near Mars, Mars 4,6° N |

| *Date* | *Time* | *Details* |
|---|---|---|
| 23.09 | 09:05 | Equinox. Trees strip their leaves as autumn starts on Northern Hemisphere. Precisely the opposite happens on Southern hemisphere as spring begins. |
| 25.09 | 05:01 | Uranus at perigee |
| 26.09 | 00:15 | Uranus at opposition |
| 27.09 | 11:09 | New Moon |
| 28.09 | 00:57 | Moon at perigee (357556 km) |
| | | This years second nearest approach of the Moon, but still too far to throw stones at it and moonlight still needs a bit more than a second to reach us. |
| 28.09 | 09:04 | Moon near Venus, Venus 5,4° N |
| | | This will be tough to see with the sun just 11° away. |
| 28.09 | 14:06 | Moon near Saturn, Saturn 6,9° N |
| | | See row above |
| 28.09 | 20:16 | Mercury at superior conjunction |
| 30.09 | 11:05 | Venus near Saturn, Venus 1,4° S |
| | | This is a daylight event, requiring very careful searches with the sun just 11° W. Almost fully lit Venus seldom comes this close to the ringed planet. |

SPACE SCOOP

## Schools Combine to Shed Light on Newly Discovered Black Hole

*by Sarah Roberts*

In the beginning of June, schools from across the world have combined on two separate days to use the 2m Faulkes telescopes to image a newly discovered black hole system, known as MAXI J1659-152. By pooling the data from consecutive observing sessions, astronomers working with the Faulkes Telescope Project may be able to detect a periodic variability, which will indicate the orbital period of this binary system. This is important information in order to determine the mass of the compact unseen object and therefore its potential to be a good black hole candidate.

*http://www.faulkes-telescope.com/news/2368*

## EU-UNAWE Launches an Astronomy News Service for Children

*by Pedro Russo*

Astronomy is a dynamic subject, with our understanding of how the Universe works evolving as new research is announced. We want to bring the excitement of this journey of discovery to young children and to demonstrate that there is still much to learn about the Universe – research that they could contribute to in the future. That's the vision behind Space Scoop, a new astronomy news service for children. Space Scoop is produced by European Universe Awareness (EU-UNAWE) – an educational programme that is endorsed by the International Astronomical Union (IAU), which aims to inspire young children with our incredible cosmos.

Currently, Space Scoop is working with the European Southern Observatory to convert its press releases into child-friendly language, but the service will expand in the near future to include other partner organisations.

Space Scoop is specifically aimed at children aged 7-10 years, but it could also be used as a resource to teach younger children with the guidance of a parent or educator. We hope that teachers will print the latest Space Scoop and use it in the classroom to start a discussion about the latest astronomy news.

*www.eunawe.eu/kids/*
*http://www.eso.org/public/products/logos/spacescoop/*

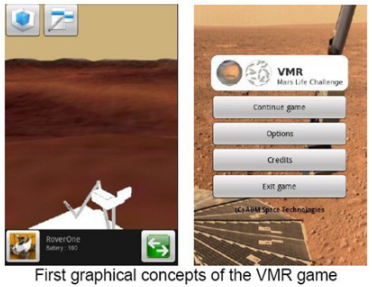
Europlanet A European Research Infrastructure for Planetary Science

# Europlanet

*by Thierry Fouchet*

EUROPLANET RI has installed the Europlanet Prize for Public Engagement with Planetary Science to recognize the achievements of outreach providers in planetary science in Europe and raise the profile of outreach within the scientific community, and the Europlanet Funding Scheme to develop new ways of bringing planetary science to audiences across Europe. The call is launched on an annual basis in autumn, and judged in March to be announced in spring. In 2011, height applications were received for the Prize for Public Engagement with Planetary Sciences, and eleven applications for the funds. The funding scheme was oversubscribed by a factor of six.

The 2011 Europlanet prize for public engagement with planetary science has been awarded to the Austrian Space Forum. The Austrian Space Forum is a national network for aerospace specialists and space enthusiasts. It is a volunteer organization led by space professionals, focusing on space research including human-robotic Mars exploration. Since 1998, it has developed an outreach programme that targets schools, teachers, the general public and the media. The spectrum of its outreach activities ranges from simple classroom presentations to space exhibitions reaching 15 000 visitors. The jury viewed The Austrian Space Forum as a model for organizations reaching out to the wider community, and was very impressed by the range of activities, by the innovative practices used to target different audiences, and by the numbers of visitors attending events.

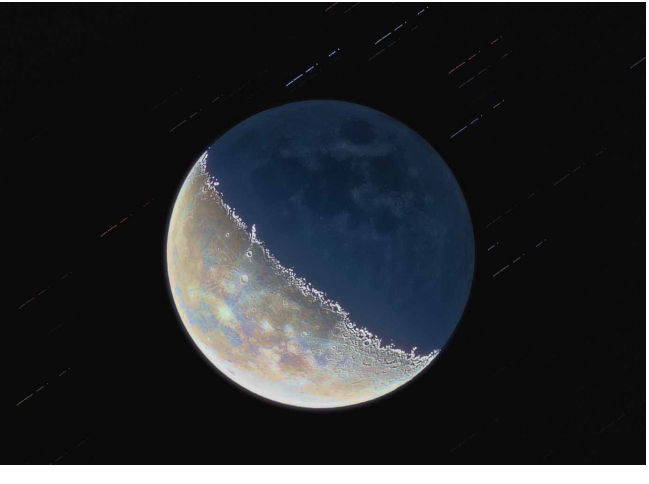


First graphical concepts of the VMR game

The award of 4000 Euros will be presented to the Austrian Space Forum at the European Planetary Science Congress and Division of Planetary Sciences (EPSC-DPS) 2011 Joint Meeting, which will take place at the La Cité Internationale des Congrès Nantes Métropole, Nantes, France, from 03 – 07 October 2011.

Two projects were funded in 2011 by Europlanet. A grant of 12 000 Euros was awarded to the Virtual Mars Rover (VMR) – Mars Life Challenge, a multiplayer game for mobile phones with Android OS (and later – other mobile OS). The creators belong to the Mars Society Polska and through the organisation will engage with space scientists who will moderate the game. The software created for the game will also serve as a simulator and a design environment for the development of robotic systems. Europlanet also awarded a grant of 4 000 Euros to the Astronomical Observatory – University of Valencia for the design and prototyping of a 3D tactile model of the Moon, to be used specially, although not exclusively, by blind and visually impaired people (see more information bellow).

*Find out more on http://www.europlanet-eu.org/*
*Twitter: @europlanetmedia*
*Facebook: Europlanet*



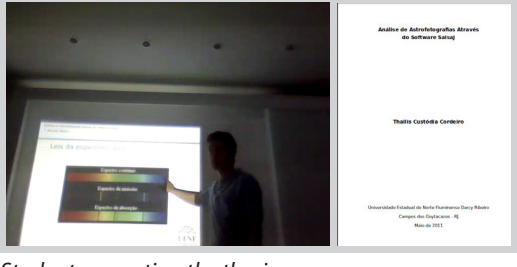
# The "Moon at you fingertips" receives a grant from Europlanet

*by Amelia Ortiz-Gil*

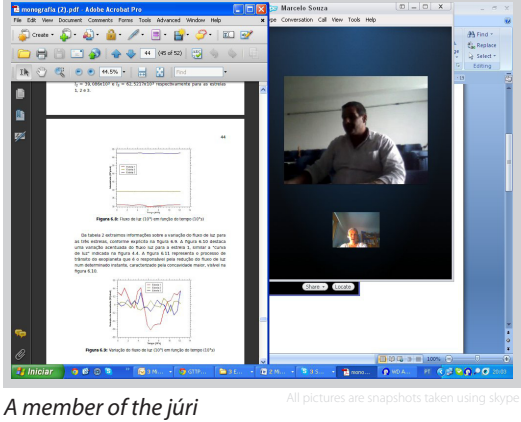
"The Moon at your fingertips" has been one of the awardees in the the 2011 Europlanet Outreach Funding Scheme. The project is led by the Astronomical Observatory of the University of Valencia (Spain), with collaborators in Portugal, Italy, the UK and France.

This project will design and build a tactile Moon sphere for the blind, the main goal being that of giving to this special kind of public an experience of the Moon as close as possible to the one felt by sighted people. We will use Clementine's lunar map to select the most relevant features that will be engraved on the sphere. Craters and maria will be labeled with letters in Braille. Then those labels will be linked to the names of the lunar features in a accompanying document in Braille.

We will use open software to produce a 3D computer model to be printed using a 3D printing service. The first prototype will be tested by different blind users and their feedback will be taken into account in the final design of the tactile Moon. This will be available for download by anyone who wishes to use it in outreach activities.
*http://www.nrl.navy.mil/clm/*




*Student presenting the thesis summary*



*A member of the júri*

All pictures are snapshots taken using skype

# Astrophotography Analysis through Software SalsaJ

*by Cordeiro T.C., and Souza M.O.*

*Laboratório de Ciências Físicas – Universidade Estadual do Norte Fluminense*

On May 10, 2011 was presented in Campos dos Goytacazes, Brazil, the first bachelor thesis using the software SalsaJ as the main topic. In this pioneer work, entitled "Astrophotography analysis through software SalsaJ", were performed image analyses of the proposed exercises by EU-HOU Project team, in order to publicize and show the potential of the powerful software.

Besides the chapter with the theoretical knowledge required for the understanding of the physical phenomena and essential for the discussion of results, the thesis presents an introductory chapter, similar to a short manual for the software version 2.0, that was used to develop this work . The activities that were chosen involved, building an H-R Diagram, the detection of a black hole at the center of the Milk Way and the discovery of an exoplanet by transit method.

The results were satisfactory and this fact is proven by comparing the values found with data reported in articles published in leading journals as "The Astronomical Journal" e "Monthly Notices of the Royal Astronomical Society".

The thesis presentation was accompanied via Skype by Rosa Doran (the chair of GTTP and the Portuguese representative of EUHOU).

## Two Years of Brazilian participation in the International Astronomical Search Collaboration

*by Gustavo Rojas - Universidade Federal de São Carlos - Brasil*

The International Astronomical Search Collaboration (IASC) is an educational outreach program for high schools and colleges, aiming to involve students from all over the world in original astronomical discoveries. Brazil has joined IASC in 2009, and since then there were 5 schools in 4 cities participating in 4 campaigns, with over 30 students involved.

A number of discoveries have been made, including 4 Main Belt asteroids and one Apollo-class Near Earth Object. Additionally, dozens of known asteroids had its positions measured by the students, helping astronomers to refine their orbits.
The successful identifications were intensely celebrated by the students, who were intoxicated with the thrill of discovering hitherto unknown objects. Local and national newspapers, magazines and TV stations covered the young astronomers' discoveries.

A record number of 5 schools in 4 different cities will participate in the forthcoming August 2011 campaign. At the current pace, it is only a matter of time until we host the First All-Brazil Asteroid Search Campaign.

## GTTP comes to Wales!

*by Sarah Roberts*

The Faulkes Telescope Project, working in partnership with the National School's Observatory have been awarded £5000 by the UK's Astronomy funding council, STFC, to run a series of GTTP training events across the UK. The first of these will be held in St Asaph, North Wales at the end of June. Teachers will be introduced to using robotic telescopes in the classroom, aswell as other educational resources for helping teach Science and Maths subjects in the classroom. For more information on this event, please contact *training@faulkes-telescope.com*

*Astronomy day*

*Clube Fair*

# Al Akhawayn Astronomy Club (Morocco)

*by Ilyass Garara*

Al Akhawayn Astronomy Club is a group of students from Morocco's Al Akhawayn University in Ifrane (AUI) with interest in sharing their passion and knowledge in the scientific field. The club members join force in organizing different activities both on and off campus such as the semestrial astronomy day, which is an event that generally serves to organize presentations and observing sessions that are geared toward the general public and, occasionally, toward young students in elementary schools. Club members have also actively participated in the International Asteroid Search Campaign on a semestrial basis for the last few years and were successful in making several Main Belt Asteroid discoveries and Near Earth Objects confirmations.

In addition to its regular activities, the Astronomy Club is currently participating in a project to build the first robotic observatory in Morocco. The project is the result of a cooperation between Dr. Hassane Darhmaoui, professor of Physics at AUI, and Dr. Carl Pennypacker from the University of California, Berkeley. This will be a one of a kind opportunity for Moroccan students and researchers to use a telescope in their own country, be it for advanced observations or the retrieval of important information about a number of celestial objects. Moreover, efforts have been made to ensure the presence of a remote access to the telescope in order to ease its use outside the university.

*http://meeting.passeiopeloceu.org/index-meeting.html*

# 4th International Meeting of Astronomy and Astronautics takes place in Campos de Goytacazes, Brazil

*by Marcelo Souza*

On April 21-23, 2011, was organized the 4th International Meeting of Astronomy and Astronautics, in Campos dos Goytacazes, located in the north region of Rio de Janeiro State, Brazil. The event had more than 800 participants and was enjoyed by all. The kids were able to meet with four astronauts: Apollo Astronaut Charlie Duke, Russian Cosmonaut Pavel Vinogradov, Russian Cosmonaut Oleg Kotov and Brazilian Astronaut Marcos César Pontes.

Invited speakers included, among other prominent guests, and participants from around the world, Dr. Jin Zhu (Beijing Planetarium - China), Rosa Doran (GTTP - Portugal), Mike Simmons (AWB - USA), Babek Tafreshi (TWAN Project - Iran), Manoj Pai (India), Virgiliu Pop (Romania), Enrique Torres (UNAWE and CIDA - Venezuela), Julio Blanco (GTTP - Uruguay), Joan Chamberlin (Southern Gems - Citizen Sky - USA), Michael Uberty (AWB - New York - USA), Dr. José Bezerra Filho (IAE/CTA)as well as representatives from Germany and Paraguay. You can find photos and videos from the event here. In result of this meeting, new national and international partnerships have been created.


# School of Astronomy and Astronautics will be born in Brazil

*by Marcelo Souza*

In Campos dos Goytacazes, RJ - Brazil, a new innovative project is being launched - the first School of Astronomy and Astronautics. Through the support of the foundation of the Brazilian Astronaut Marcos Pontes, this after school programme will be free to students from 11 to 18 years old. You can find more information on the school's homepage (in Portuguese). The students were selected and activities at the school will begin in August.

Projects with schools to build annalematic sundials have begun and a visit with members of Louis Cruls Astronomy Club, students and teachers to ESO facilities and observatories in Chile will happen in August 2011. The visit has the support of the Brazilian Government, by the Ministry of Science and Technology.

This project has full support of the Galileo Teacher Training Programme and under this support several initiatives are foreseen, among them a continuous teacher training programme and the free use of all Universe Quest assets.

More information here: ***http://cientistacriativo.org/***

# IASC in Portugal

*by Rosa Doran*

During the school year 2010-2011 this campaign continued gaining adepts. Teachers and students are ever more eager to participate and the results are truly amazing. We have at the moment a large waiting list of schools willing to enter the programme. We have successfully managed to accommodate all requests for the next school year. Hopefully it will be as successful as this one. We had 23 schools participating, 31 teachers and 270 students. The results were amazing: 117 observations of Near Earth Objects; 7 preliminary discoveries made by other schools confirmed; 21 preliminary discoveries from which 2 confirmed. By pure coincidence the school that had the 2 confirmations is the school were the coordinator of the project Ana Costa works. She mentored the students with the help of Rita Guerra. Ana is an active member of NUCLIO (the association in charge of this campaign in Portugal) and her work is contributing to change the way students understand astronomy and the work of real researchers. A big cheers to Ana and all teachers that every year encourage their students to engage in such activities!!

The kids were euphoric and the discovery attracted a lot of media attention, which was very good to capture teacher's attention to our projects and students interest for science. All main media captured the press release issued by NUCLIO and for a few weeks the students became stars:


SOCIEDADE
ESPAÇO

O 2011 BG16 é nosso!

Alunos de uma escola de Cascais identificaram um novo asteroide, que terá nome português

POR SARA SÁ

ÊXITO Os professores e os alunos da Escola Básica 2, 3 de Alvide, autores da descoberta

Primeira lição: a astronomia faz-se ao computador. A imagem do astrónomo ao relento, a espreitar pela lente do telescópio, ficou nos anais da História. Para os alunos da Escola Básica 2, 3 de Alvide, Cascais, esta não foi uma grande surpresa. Os dedos dominam as teclas e o ecrã é a sua brecha para o mundo. Mesmo que seja aquele por cima das nossas cabeças. A proposta de participar na pesquisa e identificação de objetos espaciais apareceu nas aulas de Física e ao serviço apresentaram-se meia dúzia de miúdos, do 7.º e 9.º anos. Na parte inicial da tarefa aprenderam a trabalhar com o software de auxílio na deteção de asteroides. Depois, veio a análise das imagens captadas por telescópios do Texas, nos EUA, e enviadas via net.

**CAMPANHA DE BATISMO**

A 25 de janeiro último, fez-se luz. O objeto cumpria todos os requisitos e o grupo de Alvide não tinha dúvidas de que se tratava de um asteroide desconhecido. A confirmação chegou uns dias depois, quando o coordenador da iniciativa internacional validou a deteção, após observação por outra equipa. «A parceria entre professores e alunos é muito proveitosa», diz Rosa Doran, responsável pelo NUCLIO (Núcleo Interativo de Astronomia), associação que visa a divulgação científica. «Os mais novos têm aptidão natural para as tecnologias, os adultos conseguem analisar e passar informação científica.» Rita Guerra, professora de Física, esclarece: «É uma atividade para todos – mas exige concentração e paciência.»

**Método**

**À caça de asteroides**

**Os passos necessários para detetar as desejadas sobras do sistema solar**

- São recebidas, por computador, imagens do céu, captadas por telescópios profissionais.
- Os objetos sinalizados são escrutinados por software, que descarta o que não interessa.
- Analisa-se as características físicas dos objetos que sobram, em especial a forma
- O potencial candidato recebe um nome provisório. A confirmação de que se trata mesmo de um asteroide só acontece se o objeto for novamente observado, por outras pessoas, na semana seguinte à primeira identificação.

Para já, o novo objeto, situado algures na cintura entre os planetas telúricos, como a Terra ou Marte, e os gasosos, como Júpiter ou Saturno, recebeu a designação 2011 BG16, atribuída pelo Minor Planet Centre. Mas o batismo definitivo ficará por conta da escola portuguesa. «Vamos solicitar a participação de toda a comunidade escolar e pedir sugestões de nomes», adianta Ana Costa, também professora de Física e formadora de docentes.

Além de encher o ego dos alunos, orgulhosos pela descoberta, a identificação de asteroides – sobras da formação do sistema solar – é muito importante para o mapeamento do céu. Conhecendo a sua trajetória, é possível prever o impacto de asteroides com a Terra ou traçar uma rota livre de perigo para as naves espaciais. Será a própria NASA, a agência espacial americana, a distinguir o trabalho, com certificados de participação para cada aluno e uma placa a colocar na entrada da escola.

Mas o mais importante para a astrónoma Rosa Doran, que percorre estabelecimentos de ensino de todo o País, sensibilizando alunos e professores para atividades nesta área, é mesmo despertar o interesse dos miúdos para a Ciência.

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Astronomia

**Crianças portuguesas descobrem novo asteroide**

Seis alunos da Escola Secundária 2,3 de Alvide (Cascais) descobriram um asteroide a partir do estudo de imagens obtidas por vários telescópios, no âmbito das últimas campanhas promovidas pela ISAAC — International Asteroid Search Collaboration (Colaboração Internacional para a Procura de Asteroides), onde participaram 15 escolas nacionais. O astro está localizado entre as órbitas de Marte e de Júpiter e chama-se 2011 BG16, mas em breve os alunos vão propor à União Astronómica Internacional um nome português.

All participants received certificates and this year they were delivered by the Mayor of Cascais.


International Astronomical Search Collaboration
CERTIFICATE

Escola Secundária 2-3 de Alvide

Has successfully participated in the International Asteroid Search Campaign and actively contributed to the discoveries, observations and monitoring of Near-Earth Objects and Main Belt Asteroids.

GTTP Chair Rosa Doran
National Promotor Ana Costa
IASC Coordinator Patrick Miller


International Astronomical Search Collaboration
CERTIFICATE

Ana Costa

Has successfully participated in the International Asteroid Search Campaign and actively contributed to the discoveries, observations and monitoring of Near-Earth Objects and Main Belt Asteroids.

GTTP Chair Rosa Doran
National Promotor Ana Costa
IASC Coordinator Patrick Miller


International Astronomical Search Collaboration
CERTIFICATE

Salvador Bruschy

Has successfully participated in the International Asteroid Search Campaign and actively contributed to the discoveries, observations and monitoring of Near-Earth Objects and Main Belt Asteroids.

GTTP Chair Rosa Doran
National Promotor Ana Costa
IASC Coordinator Patrick Miller

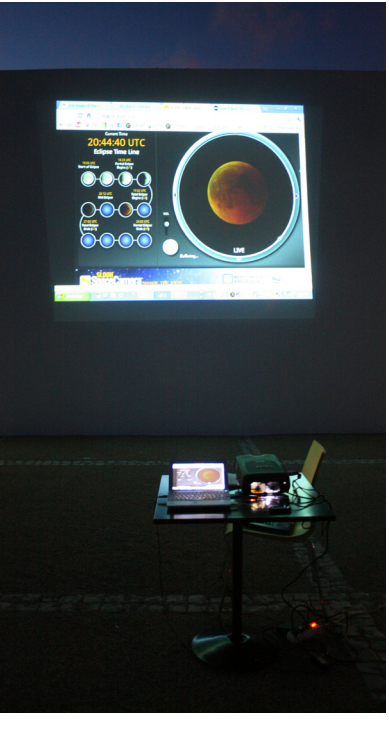
The municipality also awarded a telescope do Ana Costa's school and they were delivered by the mayor, Dr. Carlos Carreiras. This was a very precious moment to NUCLIO and all its associates.

*The mayor delivering the telescope to the school*

*The mayor delivering the certificate to one of the students that discovered a new asteroid. The only girl in the group.*

# Lunar Eclipse June 15th

Lunar Eclipses are very good events to promote public outreach events. Last June we had a very good opportunity to follow one. Hundreds of people participated in the venue worldwide. In Portugal we used the moment to explain to the participants the reason why eclipses occur. Many didn't realize before that in such events we can actually see a live proof that our planet is indeed round. Some had a hard time understanding that the Moon was crossing the Earth shadow. The media followed the event with us and we also had the opportunity to show the eclipse in other corners of the world projecting webcasts.







## First Galileo Teachers in Portugal

All teachers that have been trained on the use of modern tools and resources for science education can become a Galileo Teacher (GT). In order to do that they only have to send proof that they have implemented in school or in an after school programme the content they have learned during the training. The first GT in Portugal received their certificates and will soon have their name listed in the GTTP webpage. They have successfully implemented in classroom the use of modern technologies for science education.


Galileo Teacher Certificate

Galileo Teacher Training Program

Leonor Cabral

has successfully introduced modern tools and resources for science education in the classroom during the school year of 2010/2011

GHOU President

Carl Pennypacker

GTTP Chair

Rosa Doran

The Galileo Teacher Training Program is a Cornerstone Project of the International Year of Astronomy 2009.

www.galileoteachers.org | www.astronomy2009.org

## FT Schools begin European collaboration

Teachers from the European Hands-on Universe Community have a project of multidisciplinary and multilateral approach to the study of asteroids approved under COMENIUS Multilateral school partnerships - "In orbit with Europa!" . After meeting in an EUHOU training session in Poland, teachers from Ireland, Poland, Portugal and UK met in France to produce a very interesting proposal to be submitted in the latest Comenius call. During the project all participating schools will have the opportunity to visit each other, teachers and students, and implement real research projects in classroom. The main topics are: Motivate students from different backgrounds and abilities to participate more fully in science. With the help and advice of professional astronomers they will use available high quality robotic telescopes to get involved in a collaborative project to determine orbits, rotation and shape of asteroids. During all project they make a movie that brings together all activities of the project. The use of art, drama, film studies, fiction and other subjects not necessarily directly related to science will attract students, girls especially, who may not have otherwise become involved in the sciences. The first meeting will take place in October, in Portugal (Escola Secundária da Cidadela - Cascais), including 2 teachers (inc. principal) and 3 students from each school. This will be to plan the short story and the movie. Will also allow them to decide about the project as a whole.

Users of the Faulkes Telescopes from across Europe have come together in a joint collaborative project after meeting for the first time at a European Hands-On Universe (EU-HOU) Teacher Training Session in Poland earlier this year.


# GTTP call for workshop proposals 2011

We are pleased to announce that with the support of the Las Cumbres Global Observatory and Telescope Network (LCOGT) we are issuing a new call for proposals. The main aim of these small grants is to provide seed funding and basic support in order to stimulate teacher training workshops in developing regions. Note that although this funding is aimed specifically at "developing countries", exceptions with appropriate motivation will be accepted - the main concern simply being who the beneficiaries would be. Proposals should also be in alignment with the GTTP goals listed in detail in *www.galileoteacher.org*. These grants (up to 500 Euro) are intended to simply act as a stimulus to support organizations which are enthusiastic about improving the science teaching in classroom worldwide. Efficient use of these funds to train teachers capable of further train other peers and successfully implement the learned resources and tools in classroom would result in a solid start of a local community for the global GTTP effort.

The funds shall be used to: Produce educational material to distribution to workshop participants; Travel and subsistence for teachers attending the workshop, when needed.

You can help fund this effort: GTTP has already secured funding to support 8 workshops thanks to the generous contribution of LCOGT. You can help by making a small contribution. Learn how visiting announcement page: *http://www.site.galileoteachers.org/index.php?option=com_content&view=article&id=176:gttp-call-for-proposals-2011&catid=1:announcements&Itemid=28*

LCOGT.net

***Spread the news!!!***

# EUHOU training in Pampilhosa da Serra

*by Rosa Doran*

Last April took place in Pampilhosa da Serra the first EUHOU-Radio teacher training workshop. The project, "Connecting Classrooms to the Milky Way" intends to install "Small Radio Telescope" (SRT) in 5 European countries: France, Portugal, Spain, Poland and Romania. This project is being funded by the European Commission under Comenius Multilateral projects and intends to introduce several research studies in classroom via robotic use of the antennas: the Sun, Dark Matter, the role of ICT and electronics etc

The training took place in a friendly Portuguese village and had a major support from the municipality that lodged all the participants and provided all the needed support in terms of logistics for the venue.

During the venue other fun and very interesting activities took place: Sun and night sky observing sessions,

the exhibition of the movie "The First Orbit" in celebration of the 50 years of Yuri Gagarin first flight around our planet

and an attempt to receive the signals from the ARISAT satellite aboard the ISS.

*There will be other training venues. Keep tuned !!*

# COMENIUS EUHOU Training sessions

Registration for the EUHOU Comenius training sessions are open. There are 6 new training sessions planed and 2 seminars on radioastronomy. The pre-registrations and applications to national agencies are due for 16 September 2011 for the 2012 sessions.

To pre-register, you have to fill and send a document that is available on EUHOU website and send it to the organizers. There are training sessions taking place in France, Portugal and Germany

EUHOU: Hands-On Universe, Europe. Bringing frontline interactive astronomy in the classroom - 5-days training sessions (FR-2011-359-006)

For more information: *http://www.euhou.net/index.php?option=com_content&task=view&id=270&Itemid=49*

## Africa HOU Partner

*by Susan Murabona*
*Africa HOU leader*

Africa HOU partner and GTTP representative in Kenya was named Education and Outreach Officer of the newly formed African Astronomical Society.

*http://www.africanastronomicalsociety.org/officers-of-the-african-astronomical-society/*

Susan will certainly make a wonderful contribution to the AFAS. Cheers to the good choice.

## Outreach Prize of the European Physical Society

This year's Outreach Prize of the European Physical Society (EPS), High Energy and Particle Physics Division (HEPP), has been awarded jointly to Christine Kourkoumelis and Sofoklis Sotiriou (a representative of GTTP in Greece) and both partners in several projects (present and future ones). The prize recognizes their contribution for building educational resources to bring the research process in particle physics and its results to teachers and students, both nationally and across Europe. Congratulations to both!

UNAWE Resource Editor position announcement too -
*http://www.unawe.org/about/jobs/*

# CONTACT

*http://www.faulkes-telescope.com/node/2186*

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