


NEWSLETTER
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discover the COSMOS

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Introduction



By Prof. Kourkoumeli Christina, National & Kapodistrian University of Athens, Coordinator of Discover the COSMOS project

Dear All,

We would like to welcome you in the 4th issue of Newsletters of the "Discover the COSMOS" EU funded project. In this issue you can have a quick but concrete view about the Discover the COSMOS lead stories referring to: **the International conference in Volos this summer, the inclusion of Discover the COSMOS project to the CERN communication about the societal benefits of research, the presentation of our project in CERN meeting at Brussels, other news, dissemination events and training workshops around EU, an article published in the Scientific American magazine presenting the combination of ART with physics and our agenda of upcoming initiatives.**

The project:

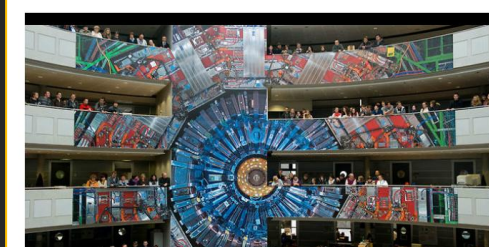
The "Discover the COSMOS" coordination action has reached its 21st Month (24 months total duration) and it provides a great number of educational resources (80.938 educational content and 558 learning activities so far) for science teachers and students through its portal (<http://portal.discoverthecosmos.eu/>).

The Discover the COSMOS community welcomes you to participate in its activities!

We hope that you will enjoy the 4th Issue of Discover the COSMOS newsletter!



Polish high-school students find inspiration at CERN
Angelos Alexopoulos



Lead Stories

International Discover the COSMOS conference

**02- 04 August 2013,
 Volos, Greece**



Discover the COSMOS consortium and Global Hands- On Universe Network join forces to organize a 3-day long International conference on "e-Infrastructures for an Engaging Science Classroom".

Educators, scientists, teacher students, education policy makers and interested stakeholders are cordially invited to participate in an International Conference that will take place in the city of Volos, Greece during 02-04 August 2013.

The visitors will have the chance to attend the **7th International Olympiad on Astronomy & Astrophysics**, parallel sessions and cultural activities that will be held during the conference.



For further information, click [here](#) to be transferred to the website of the conference.

Report by CERN

“Accelerating science and innovation Societal benefits of European research in particle physics”, a report published and produced by the European Particle Physics Communication Network for the CERN Council, May 2013

In the section “Society and Skills” of the report a special mention has been done to Discover the COSMOS project as a new way of bringing frontier science to schools!

As CERN council emphasizes “Particle physics has fired up a new generation of school children, informed teachers, stimulated students, ignited enthusiasm throughout Europe and even triggered a high school experiment for low-Earth orbit. It also changed the way we perceive the universe”.

Take a thorough look at the report following this link:

http://cds.cern.ch/record/1551933/files/Strategy_Report_LR.pdf

Discover the COSMOS @ CERN meeting in Brussels

At a special meeting (29-30/05/2013) hosted by the European Commission in Brussels, the CERN Council formally adopted an update to the European strategy for particle physics.

Since the original European strategy was put in place in 2006, particle physics has made considerable progress in elucidating the laws of nature at the most fundamental level. CERN’s Large Hadron Collider (LHC) has begun routine operation, producing its first major results, and the global particle physics landscape has evolved. The updated strategy takes these changes into account, charting a leading role for Europe in this increasingly globalised endeavour.

During the meeting 10 presentations have been implemented to all interested members of CERN Council, EU officials, Research ministers, etc.. Dr. Sofoklis Sotiriou (project partner: Ellinogermaniki Agogi) presented Discover the COSMOS project’s main features, tools,

educational activities and outcomes to the public and the policy makers creating a great atmosphere on how to bring schools closer to e-science infrastructures.

More info about the event: <http://home.web.cern.ch/about/updates/2013/05/cern-council-updates-european-strategy-particle-physics>

Discover the COSMOS in Sofia Science Festival (Sofia, 10-12 of May 2013)



Have you ever imagine that you could have access to science educational material with just one click?

Have you ever imagine that you could have access to one of the world’s largest experiment and its infrastructure, like CERN?

Have you ever imagine that you could operate large telescopes and realize astronomical observations from your classroom or even your home?

Have you ever imagine that you could have remote access to science laboratories and even make your own experiments from distance?

On the 10th of May the workshop, OPEN SCIENCE: a trip to the most innovative e-science applications, science resources, online labs and large-scale research infrastructures was realized in Sofia, Bulgaria as part of the Sofia Science Festival, and within the scheduled activities of the Discover the COSMOS project.

Teachers and students (around 40) from Bulgaria (visiting the Science Festival) had the opportunity to get answers to the abovementioned questions.



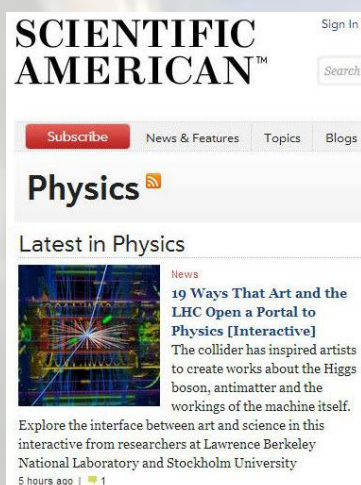
The session demonstrated innovative ways to involve teachers and students in e-Science through the use of existing e-infrastructures in order to spark young people's interest in science and in following scientific careers.

The programme included:

1. Short presentation of the project's activities
2. Presentation of the e-science applications concerning high energy physics and how we use them during the project's activities
3. Presentation of the astronomy applications and how we use them within the project's activities
4. Virtual Visit to the ATLAS Control Room and at the same time (for the first time ever) to the CMS experiment.

Furthermore the Project representatives (from IASA, Ellinogermaniki Agogi and Science View) had the opportunity to inform the Science Festival visitors in the Project's stand for the whole duration of the event (10-12 of May).

Article in Scientific American: 19 ways that Art and the LHC open a portal to Physics



We are proud to present the article published by the Discover the Cosmos partner **Lawrence Berkeley National Laboratory @ Scientific American**:

"Over the 16 years as outreach coordinators for the ATLAS Experiment at the LHC (which ended about a year ago), Erik Johansson and Michael Barnett (Lawrence Berkeley National Laboratory) made a concerted and ongoing effort to promote the development of art related to our project. This included photos, videos, the mural, the pop-up book, photo-book, neon Higgs sign, and much more.

Now much of that work is summarized in this online article that was just published by Scientific American. It is about art and the LHC and is at:

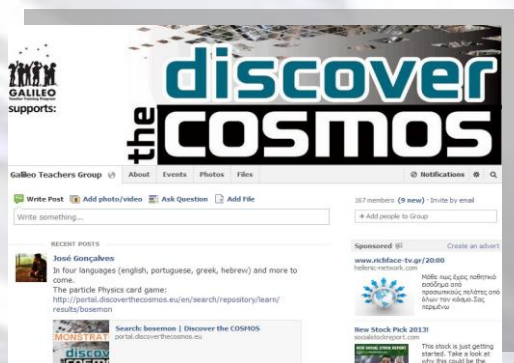
<http://www.scientificamerican.com/article.cfm?id=large-hadron-collider-lhc-art-physics>".

Do not walk on Moon during March! Introducing the Lunar Craters scenario

For the past 8 years, NASA astronomers have been monitoring the Moon for signs of explosions caused by meteoroids hitting the lunar surface. "Lunar meteor showers" have turned out to be more common than anyone expected, with hundreds of detectable impacts occurring every year. A boulder-sized meteor slammed into the moon in March, causing an explosion so bright anyone looking up at the right moment would have spotted it, NASA said. NASA's Meteoroid Environment Office is reporting the discovery of the brightest impact seen on the Moon in the eight years the monitoring program has run the National Geographic reports. About 300 lunar impacts have been logged over the years but this latest impact, from March 17, is considered much, much brighter than anything else observed. It is understood the space rock left a 20m-wide crater after it slammed into the Moon's surface at 90,000km/h.

You may be transferred in the [portal news](#) to read more.

Join us in Discover the COSMOS Resource of the Week!



Since the beginning of March, a resource of the week is being announced in the [Discover the COSMOS / GTTP](#) social network. Teachers are being advised to visit Discover the COSMOS resources and share their ideas with us.

Join the effort!

Latest news from Masterclasses around EU



On March 11th an ATLAS Masterclasses, organized by the Discover the COSMOS, took place at CERN. Twenty eight students and two teachers from the S Series Euro section, Lycée Saint Michel in the nearby city of Annecy, France visited CERN and became “researchers for day”. The activities included lectures, “hands-on” workshop with the HYPATIA analysis tool, a visit to the ATLAS control room and a video conferencing with three other schools across Europe.



Two Masterclasses organized by the Discover the COSMOS took place in the Greek island of Samos on **18 and 19th of April**.

Samos is one of the East Aegean islands with 35000 inhabitants, the birthplace of Pythagoras, just a few hundred meters away from the Asia Minor coast. The first Masterclass which included a morning lecture by the coordinator Prof. C.Kourkoumelis, a [virtual visit to the ATLAS](#) Control room, followed by an HYPATIA event analysis “hands-on “ workshop, took place in the town of **Karlovassi**, the second biggest town on the island with 4000 inhabitants, with a rich tradition in seafaring and ship ownership. The activity involved 30 students from the General High School and from the 1st vocational High School of Karlovassi. Students from the 2nd Junior High School of the island of **Leros** were also connected with the transmission of the virtual visit. Leros is a frontier island as well, very near the Asia Minor coast in the Southeast Aegean in the Dodecanese with 8200 inhabitants and a moderate touristic development. The 2nd Junior High School of Leros in the Lakki town has 140 students.

The second event took place next day in the capital of Samos, the town of **Vathi**. The program was similar to the one of Karlovassi, with a lecture, [a virtual visit](#) and an HYPATIA “hands-on” workshop. In Vathi about 40 students from the General High School and the Vocational High School took part in the activities.

In both towns of Samos the day before the activities, a lecture about CERN for the general public was given by **Prof. E.Tsesmelis**, member of the CERN directorate. Prof. Tsesmelis’ lectures were followed by an enthusiastic audience of about 80 persons, who asked lots of questions at the end.



One Masterclass organized by the Discover the COSMOS and Ellinogermaniki Agogi took place in the Greek island of Chios on **25th of April**. Chios is one of the East Aegean islands with 52000 inhabitants, the “claimed” birthplace of Homer, just a few miles away from the Asia

Minor coast. The Masterclass included two morning lectures by the coordinator Prof. C.Kourkoumelis and the Assistant Prof. D.Fassouliotis, a virtual visit to the ATLAS Control room and was followed by an HYPATIA event analysis "hands-on" workshop where the students analyzed real events from the LHC and looked for Higgs particle candidates. About 40 students from the 1st and 3rd Lyceums of capital of Chios 'Hora' participated. This was a full day activity followed by a public lecture from Prof. K.Bachas of Ecole Normale Supérieure, Paris in the Homirion town center Hall. The events coincided with the Greek International Conference for High Energy Physics (EESFYE) and were followed by a large number of young researchers.

Discover the Sky over Tyrol in Austria



At the annual fair "BildungOnline 2013" in Hall/Tyrol the Austrian Discover the COSMOS team disseminated the project and organised two training events for teachers and stakeholders, but also for interested students. Materials, tools and services offered by the project were presented in a workshop with concrete astronomical topics (solar system, impacts and black holes). Also representatives from universities, astronomical clubs and working groups took part and the event was completed by a visit to the private observatory Heiligkreuz. The participants responded positively to the demonstrators and the used software tools, e.g. Stellarium and SalsaJ, and online services like the robotic telescopes. Scientists at universities, research facilities and amateur astronomers are using different tools,

but for the educational sector and beginners these are the best choice in order to get familiar with scientific literacy and working processes.

Link: DtC at BildungOnline (dissemination and demonstration workshop)
<http://events.bildungonline.at/EventManagement/publicDetailedVeranstaltung.do?veranstaltungid=1461>

Link: Workshop Astro-Night Hall
<http://events.bildungonline.at/EventManagement/publicDetailedVeranstaltung.do?veranstaltungid=1457>

Agenda

Some of the upcoming events

- Teacher training session "Comenius / Hands-On Universe - Europe / Discover the Cosmos", **27-31 May**, Université Pierre & Marie Curie (Paris):
<http://www.fr.euhou.net/index.php/nouvel-les-mainmenu-49/193-27-31-mai-2013-stage-a-paris>
- 14^e Salon Culture et Jeux Mathématiques, **30 May - 2 June**, Cité des Sciences (Paris):
<http://www.cijm.org/>
- International conference The Future of Education: Discover the COSMOS will be presented in the conference (Florence, Italy, **13-14/06/2013**)
- HSCI 2013, Hands-On Science conference: presentation of Discover the Cosmos / EU-HOU during the plenary session, **1-5 July**, Kosice (Slovakia); <http://hsci2013.info/>
- **Physics Experience day**: Researchers and PG students demonstrating to students and teachers PP experiments with emphasis on data taking and analysis (Birmingham, UK, **01/07/2013**)

- [EWASS 2013](#), European Week of Astronomy and Space Science: Presentation of Discover the COSMOS during the special session: Astronomy education and public outreach (Turkey, Finland, **08-12/07/2013**)
- **ICNFP 2013**, International Conference on New Frontiers in Physics 2013 (Crete, Greece, **28/08-05/09/2013**)
- **International Discover the COSMOS Conference**: will be organized under the collaboration of the International Olympiad on Astronomy & Astrophysics (IOAA) in Volos (Volos, **02-04/08/2013**)
- **EPSC – Europlanet Science Congress 2012**: Presentation of Discover the COSMOS during the special session: Outreach, education and policy <http://www.epsc2013.eu/> (London, **26-27/09/2013**)



Further Information

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