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THE GRAVITATIONAL VOICE

EGO CRAL
Photographic Competition



News from EGO and VIRGO



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The content of this newsletter does not necessarily represent the opinion of the management.

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About one year after *h19*, another editorial brings our thoughts back to the beautiful times we had with Stefano Braccini.

This time the sadness for missing Stefano is mitigated by the announcement of the winner of the "Stefano Braccini Thesis Prize", that has been instituted in memory of Stefano by his friends. We publish in this issue the official report of the prize board, composed by Alain Brillet, Adalberto Giazotto and Steve Shore. We are happy since, as it is written in the report, the work of the jury has been made hard by the very high level of the competing thesis works. The authors of the best two theses will be invited to present their work in Cascina at the occasion of the Virgo week of next April.

In this issue, *h21*, Giovanni Losurdo's article on the take-off of Advanced Virgo is the most relevant for our future. The design phase is almost complete and the action era has started. From now on the real contributions to the success will not be given by underlining difficulties and obstacles on our path. The real contribution to this common enterprise will come from those who take problems on their own shoulders and offer solutions, making the advancement of the rest of the army both smooth and easy.

C. BRADASCHIA
Editor-in-Chief

Cover picture: "Personal care" winning photo of the EGO CRAL Photographic Competition, taken by Marta Budroni (EGO) with a Fujifilm at the Jama Masjid of Delhi on 27/12/2011.

Advanced Virgo taking off

On January 19 2012, at 12:45, the west end Virgo payload was disconnected from its superattenuator. This marked the end of the Virgo detector and the start of the upgrade to Advanced Virgo (though in fact, with the installation of the EIB-SAS in the laser lab, the upgrading had already started). I became fully aware that the realization of Advanced Virgo (AdV) had started and that the point of no return had been passed when my agenda started to be crowded with meetings named “Safety organization in AdV” or “Call for tender for the executive design of the infrastructure modifications”.

The discussion about upgrading Virgo to a second-generation detector started several years ago. In 2005 the Collaboration released a “White paper”, describing the “possible improvements” to make Virgo a second-generation detector. This happened late with respect to LIGO. The LIGO team had already undergone a NSF review of the Advanced LIGO project in 2003. In 2006 Virgo decided to appoint a coordinator in charge of coordinating the R&D activities and pushing forward the design of Advanced Virgo. More and more people in the Collaboration and EGO started to dedicate time to this effort. A “Conceptual design” was released in 2007 and a “Preliminary design” in 2008. The funding agencies decided to appoint an external review committee (ERC) to judge the project and Barry Barish, former LIGO Lab Director was the chairman. The ERC review started in November 2008 and lasted until May 2009, when the “Advanced Virgo baseline design” was released.

The ERC recommended the approval of Advanced Virgo. The formal approval came later, in December 2009.

Since then, a lot of work has been done to finalize the design. The Collaboration had to pass through a phase of long and often tense discussions to make design choices compatible with the available budget and the promised schedule. Finally, the release of the Technical Design Report is expected in early April (in these weeks the chapters are being reviewed by the Internal Project Review Board). It is a crucial step forward since this marks the moment when we fully enter into the construction phase.

We have started what the GW community (and especially that part devoted to data analysis) calls “the crossing of the desert”. Both LIGO and Virgo have been switched off and all the efforts are either on the construction of the advanced detectors or on the preparation of the future data analysis.

However, it is crucial to exploit this time and take the chance it offers to us. We have a great chance to re-think the crucial parts of the Virgo setup and implement new ideas. We have the chance to prepare the commissioning well in advance while keeping in close contact with the LIGO and GEO teams. We have the chance to think of the data analysis for the next years, when a detection is very likely.

Looking closer at Virgo, the main concern seems to be the manpower. It is a matter of fact that the recruitment of young physicist has become increasingly difficult in the last years. The Virgo population has become older on average and the groups are fighting to fulfill their commitments in due time.

However, the goal remains to complete the upgrade and start the commissioning in early 2015.

2016 is the centennial of the Einstein’s prediction of the existence of GW and we look forward to celebrating it with a discovery.

G. LOSURDO
AdV Project Leader

Stefano Braccini Thesis Prize

Report by the Jury

The Jury for the 2012 Stefano Braccini Prize for doctoral Theses on Gravitational Wave Physics has unanimously chosen the following PhD theses:

“First place” for the 2012 Braccini Prize is awarded to Dr. Aleksandr Khalaidovski (Hannover Leibniz University, Germany) for the thesis “Beyond the Quantum Limit-A Squeezed-Light Laser in GEO600” for the cutting-edge, complex, and successful experimental demonstration of squeezed light methods for reduction of shot noise in interferometric gravitational wave detectors.

“Honorable Mention” is awarded to Dr. Rutger van Haasteren (Leiden University, the Netherlands) for the thesis “Gravitational Wave Detection and Data Analysis for pulsar Timing Arrays” for the original techniques and infrastructure for data analysis aimed at detecting the Gravitational Wave Cosmological Background using the pulsar timing delays.

The Braccini Prize winner and the “Honorable Mention” winner will present general expository lectures on their thesis work on the day of the awards ceremony, to be held at the Virgo site during the Virgo Week

of 16-18 April 2012. EGO will take care of their travel and lodging expenses.

The selection process followed a thorough examination of the eight theses presented, and the Jury expresses its sincere compliments to all candidates for the extremely high scientific level of their works.

The Jury
Alain Brillet, Adalberto Giazotto
and Steve Shore

Remembering Jean-Marie

Jean Marie Mackowski died on December 22, 2011.

He was a special person, whom the older Virgo members will long remember: very generous, authoritative, and inflexible; in everyday life, passionate, secretive, intuitive for what concerned professional affairs. Working with him was not easy, but certainly very exciting, as his team-mates may confirm.

About twenty years ago, when the Virgo project was being evaluated, while accreting its future collaborators, it was not clear whether the stringent requirements for the mirror coatings could ever be met. Jean Marie and his team were becoming well known in the small world of optics. They had been successful in producing hard diamond-like coatings and had recently developed low loss coatings for military applications, and he immediately became interested in the prospect of developing this technology for large optics. It requested a whole new high tech metrology, and a much larger laboratory, with high quality clean rooms: a whole new and expensive project, that we finally got approved by our institutions after a long fight,

certainly made easier by the growing fame of the team at the international level. These were the years when we became good friends, in spite of many strong technical and budgetary discussions, but with the help of a common taste for good food and great wines.

When we remember his huge levels of activity and his enthusiasm, it is difficult to imagine that over these past years, Jean Marie has been weakened by a terrible illness. Let's remember his main creation: LMA (Laboratoire des Matériaux Avancés), the only place in the world where the very unique mirrors needed by GW interferometers can be successfully measured and coated.

A. BRILLET

About the GWIC

The Gravitational Wave International Committee (GWIC) was formed in 1997 to facilitate international collaboration and cooperation in the construction, operation and use of the major gravitational wave detection facilities world-wide. The members of GWIC represent all of the world's active gravitational wave projects. In 2008, GWIC invited the three pulsar timing collaborations which are searching for very low frequency gravitational waves to join, so now it represents projects covering gravitational wave frequencies from nanohertz to kilo hertz. Each project has either one or two members in GWIC depending on size. Because the GWIC representatives are generally the leaders of each project, GWIC has access to broad expertise from throughout the community. It is associated with the International Union of Pure and Applied Physics

as its Working Group WG11. GWIC also includes representation from the International Society on General Relativity and Gravitation and from the astrophysics, theoretical relativity and astroparticle community. The chairmanship has been held over the years by Barry Barish, Massimo Cerdonio, Jim Hough and presently Eugenio Coccia.

GWIC meets annually, with recent meetings in Cardiff (2011), Hannover (2010), Pasadena (2009), New York City (2009), Pisa (2008), and Sydney (2007).

GWIC convenes the biennial Edoardo Amaldi Conferences on Gravitational Waves, sponsored by IUPAP. The Amaldi meeting is considered by the gravitational wave community to be the most important international gathering. The members of GWIC serve as the Scientific Organizing Committee for the Amaldi meetings. Amaldi 9 was held on 10-15 July 2011 in Cardiff University, with an attendance of nearly 300 scientists and students.

In 2006, GWIC established an international prize, to be awarded annually for an outstanding Ph. D. thesis based on research in gravitational waves. The 2011 GWIC thesis prize was awarded to Haxing Miao, University of Western Australia, and presented at the Amaldi Conference in Cardiff. The number of theses nominated has grown every year since the prize was established, demonstrating the growing interest in gravitational waves. GWIC entered into an agreement with Springer, under which the winner of the GWIC Thesis Prize will be nominated (with the presumption of acceptance) to be published in the Springer Thesis Series. This will provide added recognition and an additional monetary award to the Thesis Prize winner.

In 2007, GWIC appointed a subcommittee to prepare a global road-map for the field of gravitational wave science with the

objective to optimize the global science in the field. The committee is tasked with covering both ground- and space-based detectors with a 30-year horizon. The committee obtained broad input from the communities involved in identifying relevant science opportunities and the facilities needed to address them. During 2011, GWIC completed and published this Roadmap (http://gwic.ligo.org/roadmap/Roadmap_100814.pdf). GWIC has used this document to provide inputs to both the OECD Global Science Forum and the ASPERA astroparticle roadmaps.

At its 2011 meeting, GWIC accepted the application of the Indian Initiative in Gravitational-wave Observation (IndIGO) as its newest member. IndIGO is a rapidly growing national collaboration. We were pleased to learn that IndIGO had received funding to set up an Indo-US Centre to facilitate exchanges of scientists and students and to build the capability of hosting a large scientific facility. There is a good possibility that the "third" LIGO interferometer will be set up in India, thus providing a southern observatory.

For more info, see <https://gwic.ligo.org/>

Eugenio COCCIA
Chair of the GWIC

An interferometer for every problem

Recently on a web newspaper (http://qn.quotidiano.net/primo_piano/2012/01/21/656502-nave_muove.shtml) appeared the news that the position of the grounded ship Costa Concordia was being monitored by a laser

interferometer supplied by the University of Florence. My curiosity was immediately triggered and I requested information from Professor Nicola Casagli, the owner of the instrument. He clarified that it is a radar interferometer, a device that works using the same principles as Virgo. However it uses electromagnetic waves with wavelengths of 1.0 – 10.0 cm instead of 1 micron as in Virgo. This is perfectly coherent with the respectively required measurement precision: millimetric at Giglio Island ultra-sub-micron at Cascina.

C. BRADASCHIA

Stories from Another World

We reproduce here a press release dispatched by the Vatican on February 2nd, 2012.

"Stories from Another World": Vatican Organises Science Exhibition in Pisa
Religion News Service - VATICAN CITY.

C. BRADASCHIA

Nearly four centuries after the Roman Catholic Church branded Galileo Galilei a heretic for positing that the sun was the centre of the universe, the Vatican is co-hosting a major science exhibition in his hometown.

The Vatican is teaming-up with Italy's main physics research centre to host "Stories from Another World. The Universe Inside and Outside of Us," in Pisa.

The exhibit is organised by the Specola Vaticana -- the Vatican-supported observatory -- and Italy's National Institute for Nuclear Physics, together with Pisa University's Physics Department. Objects on display include rock fragments from the moon and Mars, and original copies of the books of Isaac Newton.

Of course EGO and Virgo have been invited to participate; our contribution will be: the payload from the entrance of the EGO Main Building and the interferometer model built for the previous exhibition "Astri e Particelle", at Palazzo delle Esposizioni in Rome. The exhibition will take place in Pisa at Palazzo Blu, from March 10th to July 31st.

The Scale of the Universe

We would like to bring to the attention of our readers these two amazing websites:

<http://www.freewebarcade5.net/media/the-scale-of-the-universe-2.swf>

<http://www.atlasoftheuniverse.com/index.html>

In the first, you can ride, beginning from the entire universe, all the way down to the smallest scientifically hypothetical entities, comparing the sizes of the various objects you meet along the way.

In the second, you will see the cosmos as you would see it were you an external observer looking at our solar system from distances between 12 light years to 14 billion light years.

“La Musica e l’Universo”

“*La Musica e l’Universo*” (Music and the Universe) is the ambitious and evocative title of the innovative initiative held on the 19th of December at the Stazione Leopolda in Pisa.

The event is the second of the ‘Art and science’ programme, organised by EGO with a contribution from the CariPisa Foundation. An evening of notes and words, in which the key themes of the event (‘music and the universe’, of course) found a common path through which to recount themselves.

The first part of the evening was dedicated to the music. The Elisa Quartet played the 6th Composition of Pietro Grossi, a contemporary musician who passed away ten years ago. Giovanni Lippi, cellist of the group and student of Grossi’s, introduced it by speaking of the maestro as a great multi-faceted innovator. In fact, Grossi was the pioneer of electronic music in Italy. On his initiative, right here in Pisa, by the CNUCE, a group that experimented with the use of processors in the musical field was born.

Subsequently, the quartet played Mozart’s *Do Maggiore K465*, noted as the ‘Dissonance quartet’. A long applause by the public underlined the excellent execution of the musicians, who continued with an un-expected off-programme performance, playing Beethoven’s beautiful *Cavatina*, which was much appreciated.

And so, from the notes to the words. Getting to grips with the theme of the evening were Professor Andrea Frova, general physics and musical acoustics teacher at the La Sapienza University of Rome; Andrea Ferrara, cosmologist of the Scuola Normale and electronic musician; Adalberto Giazotto; Federico Ferrini; and

Giovanni Losurdo, whom the readers of ‘h’ already know well. Professor Frova opened the discussion with the Mozartian quartet, insisting on the importance of the first twenty-two beats (approximately one hundred seconds of music), which signal a break with respect to the musical conventions of the time. Composed in 1785, the introductory adagio caught the public of the day off-guard, because of the way in which it broke the harmony with which they were familiar. Nevertheless, for the contemporary listener, these notes do not provoke the shrill sensations to which they gave rise two centuries ago. Also for this reason, Frova explained, “the history of music can be told as a path along which man adapts to dissonances”.

The music of Beethoven, about which Adalberto Giazotto is passionate, proved even more ground-breaking. “Beethoven’s music”, he said, “kindles the same reactions of marvel and wonder in me, as are caused by the universe when I think about just how limited is our own comprehension”.

From musical dissonances, to

cosmic ones; from sonorous waves to gravitational ones. Andrea Ferrara explained how the unifying factor between electronic music and cosmology is the use of the computer: the algorithms used to study cosmological structures and to compose music are in fact very similar.

Federico Ferrini played the “sounds of gravitational waves”, in the form in which we expect to discover them. He subsequently explained what Virgo is and what is being done to improve its sensitivity and to improve the chances of a discovery that could change contemporary physics: the first direct measurement of a gravitational wave, foreseen by Einstein almost a century ago. Giovanni Losurdo explained the plans for Advanced Virgo to the public: 2015 could be the year in which a global network of advanced detectors starts to collect the data in which the search for the decisive event will take place.

The debate was also animated by several questions from the audience (approximately 120 people). The initiative was of great value, the proof that art and science do not belong to spheres of knowledge that are so distant and rigidly divided, as we are so often led to believe.

Angela FEO



Alan Turing

23 June 1912
- 7 June 1954

The 23rd of June of this year sees the 100th anniversary of the birth of Alan Turing. Turing was a noted mathematician, logician and computer scientist, but it is his for work as a cryptanalyst that he is most well remembered and for which, perhaps, we should be most thankful.

Turing spent his childhood in the English public school system, first at St Leonards-on-Sea, then at Sherborne School in Dorset. So keen was Turing to begin his studies at the famous independent school, that even the General Strike of 1926, which coincided with his first day of term, did not stop him. Instead of travelling by train, he cycled, at the age of 14, the 60 miles (97 km) from Southampton to the school, only stopping to spend the night in an inn.

His propensity for mathematics and science ran contrary to the belief of many of his teachers at the school that emphasis should rather be on the classics. His headmaster even wrote to his parents that, "I hope he will not fall between two stools. If he is to stay at public school, he must aim at becoming educated. If he is to be solely a Scientific Specialist, he is wasting his time at a public school". Regardless, he persevered, and, within a year, was already solving complex problems, despite never having studied even elementary calculus.

From 1931 to 1934, following his time at Sherborne, Turing studied at King's College, Cambridge, from where he graduated with first-class honours in Mathematics. The following year he was, at just 22 years of age, elected a fellow of the



The portrait photograph above was taken at the time of Alan Turing's election to a Fellowship of the Royal Society in 1951 (copyright belongs to the National Portrait Gallery, London).

college, on the basis of his dissertation proving the central limit theorem, despite the fact that it had already been proved by Lindeberg in 1922, a fact that the young Turing had neglected to check.

It was during this period, following his graduation, that Turing began to work more on the ideas that have since become so fundamental to computer science. He reformulated results relating to the limits of proof and computation, produced by Kurt Gödel in 1931, against a background in which David Hilbert, in 1936, had released his paper, "*On Computable Numbers, with an Application to the Entscheidungsproblem* (Decision problem)", to develop the idea of the 'Turing machines'. These were formal and simple hypothetical devices, which he showed to be capable of undertaking any mathematical computation, as long as it was presented in the form of an algorithm.

Between 1936 and 1938 he spent a great deal of time at the Institute for Advanced Study in Princeton, New Jersey, where he also began to study cryptology. His very English, public school upbringing also placed him

in confusing situations on occasion in the States. He once wrote to his mother how he could not understand why, when he said 'Thank you' to someone, they felt obliged to say 'You are welcome' in reply. Reflecting on how society and language change, it's interesting to note that this is now a reply which is as at home on the eastern side of the Atlantic, as it is on the west.

Following his time in the United States, he returned to Cambridge and began to work, initially on a part-time basis, at the Government Code and Cypher School (GCCS), at Bletchley Park. It was here that he began to develop an electromechanical device, the 'bombe', which was a further development of a machine, the 'bomba kryptologiczna' or 'cryptologic bomb', which had been designed by the Polish Cipher Bureau cryptologist Marian Rejewski, in an attempt to decipher the seemingly un-breakable code produced by the German Enigma machine. Following initial successes, Turing concentrated on breaking the naval Enigma, "because no one else was doing anything about it and I could have it to myself". This was to prove incredibly influential. At the time, Britain was an isolated outpost on the tip of Western Europe; the Battle of Britain was taking place in the skies above as Hitler fought to secure the dominance of the air that would have enabled 'Operation Sea Lion', the operation to invade Britain, to take place; the USSR was tied to a non-aggression pact with Hitler; while the United States were still some way from entering the war. As a result, Britain was heavily reliant on supplies arriving by sea from America, while the U-boat campaign against British shipping in the Atlantic was proving very successful at a time when the Royal Navy was heavily over-burdened. Against this back-drop, Turing helped to produce a device able to decipher the Enigma code and enable the Atlantic lifeline to remain open.

Even in these circumstances, the man known to his colleagues as 'Prof', and who would even occasionally run the 40 miles (64 km) to London from Bletchley and was apparently a first-class marathon runner, displayed an eccentric character. Jack Good, a colleague of his at Bletchley, is quoted by Ronald Letwin as saying:

"In the first week of June each year he would get a bad attack of hay fever, and he would cycle to the office wearing a service gas mask to keep the pollen off. His bicycle had a fault: the chain would come off at regular intervals. Instead of having it mended he would count the number of times the pedals went round and would get off the bicycle in time to adjust the chain by hand. Another of his eccentricities is that he chained his mug to the radiator pipes to prevent it being stolen."

At the conclusion of the war, in 1945, when he received the Order of the British Empire (OBE), although this remained secret for many years, he began to work at the National Physics Laboratory (NPL) in Teddington, London, where he developed the first designs for a stored programme computer, the Automatic Computing Engine (ACE). He left the NPL in 1947 because of frustrations in delays induced as a result of the secrecy involving Bletchley Park and ended his contribution to ACE, which executed its first programme in 1950.

He was appointed Reader at the Mathematics Department of the University of Manchester in 1948, where he continued his work on the computation of numbers, and, in 1949, became Deputy Director of the Computing Laboratory at the university. From 1952, up to his death in 1954, Turing worked on mathematical biology, taking a particular interest in Fibonacci numbers in plant structures. In 1952, he was found guilty of gross indecency under Section 11 of the

Criminal Law Amendment Act 1885, following his arrest for homosexuality, which was still illegal in the United Kingdom at that time. Given the choice between imprisonment and chemical castration, he chose the latter. His homosexuality had been apparent to his colleagues for many years. Indeed, while working at Bletchley, he had proposed to a fellow mathematician and cryptanalyst in 'Hut 8', his station, by the name of Joan Clarke, but their engagement did not last long owing to him having told her of his homosexuality, a revelation by which she was apparently 'unfazed', and deciding that he could not go ahead with the wedding. It is interesting to note that, at the time, homosexuality was illegal, but there seems to have been a tendency to have over-looked this fact in Turing's case, given that his abilities were so remarkable. However, his security clearance was revoked and his consultancy at Government Communications Headquarters (GCHQ), in Cheltenham, was discontinued. There was significant contemporary public anxiety in relation to the subject of homosexual entrapment by Soviet agents, following the recent discovery of the first two members of the so-called 'Cambridge Five', Guy Burgess and Donald Maclean, as KGB double agents.

Turing's death in 1954 is in itself an enigma. He was found dead, lay on his bed, by his cleaner on the 8th of June. Next to the bed was a half-eaten apple, which, although not tested for proof, was believed to have been the source from which the cyanide that killed him, entered his body. An inquest found that he had committed suicide, although this verdict was strongly contested by his mother, who claimed that she had long warned him that his careless storage and lack of hygiene with regard to dangerous chemicals as part of his experiments, would ultimately lead to mischief. In relation to the life of Alan Turing,

two petitions have been brought before the British Government over the past three years. The first, brought by John Graham-Cumming in 2009, urged the Government to apologise for the persecution of Turing as a homosexual. In response, then Prime Minister Gordon Brown made the following statement:

"Thousands of people have come together to demand justice for Alan Turing and recognition of the appalling way he was treated. While Turing was dealt with under the law of the time and we can't put the clock back, his treatment was of course utterly unfair and I am pleased to have the chance to say how deeply sorry I and we all are for what happened to him ... So on behalf of the British government, and all those who live freely thanks to Alan's work I am very proud to say: we're sorry, you deserved so much better."

The second petition, brought by William Jones in 2011, asked to: *"...grant a pardon to Alan Turing for the conviction of 'gross indecency'... This remains a shame on the UK government and UK history. A pardon can go some way to healing this damage..."*. The petition was ultimately rejected, with Minister of State for Justice, Tom McNally stating:

"A posthumous pardon was not considered appropriate as Alan Turing was properly convicted of what at the time was a criminal offence... It is tragic that Alan Turing was convicted of an offence which now seems both cruel and absurd - particularly poignant given his outstanding contribution to the war effort. However, the law at the time required a prosecution and, as such, long-standing policy has been to accept that such convictions took place and, rather than trying to alter the historical context and to put right what cannot be put right, ensure instead that we never again return to those times."

Pardon or not, today, Turing is

remembered for his important contributions in many fields and celebrations of his life and achievements are to be found in universities and public spaces around the world. This year, the 100th anniversary of his birth, a committee has been established, the Turing Centenary Advisory Committee (TCAC), to coordinate activities in his memory as part of the Turing Year. 100 years after his birth and nearly 60 years after his untimely death, and following a lengthy period of indifference, it seems that the importance of this curious and brilliant man to the modern world is finally being recognised.

For more information on Alan Turing's life, I can heartily recommend the detailed biography, 'Alan Turing: The Enigma', by Andrew Hodges, published by Vintage, Random House, London. It is a work of rare care and intelligence and very thorough.

For a shorter introduction to the life of the 'Prof', the Wikipedia page contains all of the main dates and details: http://en.wikipedia.org/wiki/Alan_Turing

Photo of the Bombe machine available here:

<http://en.wikipedia.org/wiki/File:Bombe-rebuild.jpg>

Photo of statue of Turing at Bletchley Park available here:

http://en.wikipedia.org/wiki/File:Alan_Turing-Bletchley.jpg

Photo of plaque dedicated to Turing in Sackville Park, Manchester:

http://en.wikipedia.org/wiki/File:Sackville_Park_Turing_plaque.jpg

G. HEMMING

A place in the sun for EXPLORER

After 20 years of continuous operation, the gravitational-wave detector Explorer has reached the



end of its long career at CERN. On 23 January it set off for a new life at the European Gravitational Observatory (EGO) in Cascina, near Pisa.

This announcement was published on the February 6 issue of the CERN Weekly Bulletin (<http://cdsweb.cern.ch/journal/CERNBulletin/2012/06/News%20Articles/1421236?ln=en>). There you can also access a video interview to Eugenio Coccia and an extended notice about Explorer on CERN Courier.

The availability of EGO to host Explorer is part of an ambitious goal: to create on our site an "Open Air Museum" of scientific instruments. This initiative has been proposed by EGO to the Comune di Cascina, in the framework of an

effort being made by the local administration to promote tourism in the area. The idea has been enthusiastically accepted, even if, for the time being, no budget contribution has been offered to EGO. Such a contribution is also necessary for

political reasons, in order to tighten the connection between EGO and Cascina.

We already have on-site several appropriate exhibits for such a museum:

1. A 15 m long section of the Virgo vacuum tube
2. Two Superattenuator prototypes with their vacuum chamber
3. Explorer
4. One (or more) parabolic mirrors for cosmic shower detection from the INFN 'CLUE' experiment in the Canary Islands
5. A microtron: a 1 m diameter particle accelerator and its bending magnet.

But there is some work to be done in order to create an appropriate installation. Most of the exhibits



have to be refurbished; some parts of the external walls have to be replaced with transparent material, in order to display the inside structure; explanatory panels have to be prepared and, most important of all, an outside area has to be paved and equipped with illumination, in order to become a real “Open Air Museum”. As a starting point, we have prepared the rendering showing a possible location, in the area between the site entrance and the Main Building.

C. BRADASCHIA, F. FERRINI
and L. PAOLI

The EGO CRAL Photographic Competition

With the conclusion of the recent cold snap, the EGO CRAL has begun to move back into gear. Activities have been kicked off with the prize-giving ceremony for the first EGO CRAL Photographic Competition, which took place at the EGO site on Saturday the 25th of February. A good crowd of

roughly fifty people was in attendance to see Marta Budroni awarded first place in the EGO-themed half. Her photo adorns the cover of this issue and she also received a smart new camera case and a bottle of bubbly. The ‘free-expression’-themed half of the competition was won by Jerome Degallaix, who was not on hand to claim his prize.

Roberto Cosci, the ‘brains’ behind the event, thanked everyone for coming together and making it such a success. His sentiments were echoed by Federico Ferrini, while Adalberto Giazotto made particular reference to the quality of the



Above: The attendees at the award ceremony also had the opportunity to follow Carlo Bradaschia on the usual site tour.

photograph taken by Marta.

Alongside Marta’s photo on the cover, this issue also finds space to display all of the twenty photos that qualified to be judged in the final round. The jury, composed of Roberto, Federico and Adalberto, along with ‘h’ Editor Carlo Bradaschia and photographer Silvio Pennesi, reached its verdict following much thought and deliberation.

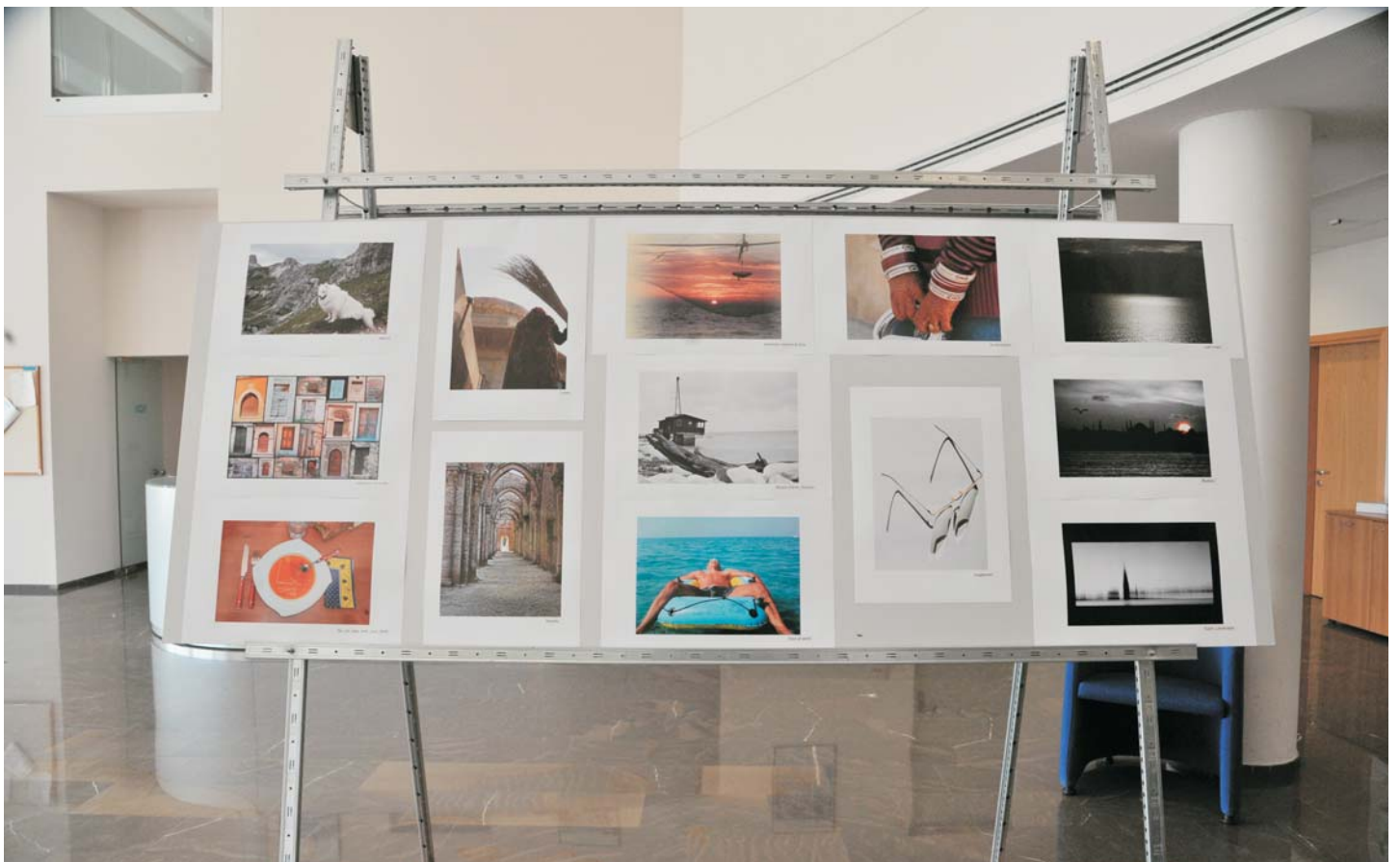
Thanks to the director, refreshments followed the prize-giving ceremony,

R. COSCI
EGO CRAL President

Below: “Do not play with your food”. In the free expression half of the competition this was the winning photo, taken by Jérôme Degallaix (LMA)



Most voted photos of the EGO CRAL competition



A National Champion at EGO

Dear readers, the editorial staff of *h* newsletter have learned that Federico Nenci is a national champion. This piqued our interest so we decided to investigate further. Please find hereunder an interview granted by Federico.

“FR: Dear Federico, we have heard that you are a national champion. I know that you are keen on electronics and quite good at motorcycle racing but what is this sport? You are in peak form which I suppose is linked but I have no idea about the competition for which you won the gold medal!

- FN: It's a sport even if not yet well advertised. I participated in the national Power lifting competition in the 74kg category. The competition is accredited by the Italian Federation FIPL® and 150 athletes were involved.

- FR: Wow! Congratulations. This explains your muscular arms but, hum, let me know, is there any link with the traditional weight-lifting competitions we used to see on TV?
- FN: Yes but such competitions belong to another Federation. I will take part in these competitions next May in the frame of national preselection.

- FR: Wow again! So explain the basic rules to us.

- FN: Each competitor had three opportunities to lift the heaviest weight from a horizontal position (bench press for the connoisseurs). Three referees adjudicate during the lifting. I personally lifted 117.5, 120 and then 122.5 kg. A lift is only valid if the position is held until the judge gives the “press” signal, which is given after several seconds. I failed



on the 122.5kg attempt but the 120 kg lifted earned me the gold medal in my category.

- FR: What gave you the idea to compete?

- FN: I have been training since I was 16 although I stopped training for a while to take care of my children. Two years ago I decided to go back to training to challenge myself.

- FR: How long does the training period last?

- FN: On average, one and a half hours, four times a week. The last month before the competition was devoted exclusively to weight lifting.”

So Federico, the *h* editorial staff wish you luck for next May, and we expect you to be asked in the immediate future to move the Mode Cleaner tower!

F. RICHARD
for the *h* team



EGO under the snow



Snow came late this year but in large quantities, as this photo testifies (photo: R. Cosci, EGO).

In Pisa, once upon a time

You may remember, many moons ago, an old feature from the earlier editions of *h*, entitled 'Out and about'. It involved showing how to get to a given destination, starting from the EGO gates. Well, now that you have had your memory jogged a little, let's see if we can resuscitate the beast into a new incarnation. The aim this time is to provide, in each issue, some information on a local place of interest, without the restriction of having to describe the journey required to arrive there from EGO. We will instead short-cut the space-time continuum and arrive directly at our destination; only neutrinos will be able to get there before us, apparently.

Now, you may or may not be aware

that, as of the last three years, Pisa has been home to a little nugget of a museum, which goes by the name of Palazzo Blu - easily identifiable along the southern banks of the river Arno, thanks to its pastel blue shade facade - and which has played host to a series of interesting and important exhibitions over the past three winters - on Chagall, Mirò and Picasso - but it is not the intention here to concentrate on this North Star, dazzling over all and sundry in the centre of town. Rather we will look at a little jewel, hidden away further up the Lungarno Galilei - Palazzo Lanfranchi.

The building was purchased by Alessandro Lanfranchi in 1539, who undertook a restoration of the edifice that gave it more or less the aspect that we see today. Ownership of the property passed to the Comune of Pisa in 1952 and another round of restorative work took place between

1976 and 1980. The Lanfranchis themselves were of noble lineage, even mentioned by Dante in his *Inferno*,

"This one appeared to me as lord and master / Questi pareva a me maestro e donno,

Hunting the wolf and whelps upon the mountain / cacciando il lupo e lupicini al monte

For which the Pisans cannot Lucca see. / per che i Pisan veder Lucca non ponno.

With sleuth-hounds gaunt, and eager, and well trained / Con cagne magre studiose e conte

Gualandi with Sismondi and Lanfranchi / Gualandi con Sismondi e con Lanfranchi

He had sent out before him to the front. / s'avea messi dinanzi da la fronte."

Canto XXXIII, 28-33.

Currently, Palazzo Lanfranchi is the location of the Graphic Art Museum - the 'Museo della Grafica' - which contains a collection including works by artists of the likes of Timpanaro, Raghianti and Argan, and is well worth a visit. It was also, for a period, home to Lord Byron. An interesting curio in relation to the romantic poet's tenancy involves the fact that his butler refused to sleep in the room initially allocated to him, as he believed it to be frequented by a ghost. Upon his

removal to a more accommodating abode elsewhere in the building, he complained that these new quarters were haunted by several ghosts. Also of interest to anyone familiar with the plan of the town of Pisa, is the fact that Byron would on occasion go hunting in the countryside surrounding Pisa, in an area known as Cisanello - now a built-up, residential area, also home to the new hospital.

Reaching Palazzo Lanfranchi is straightforward, simply head east from Ponte di Mezzo, in the centre of Pisa, on the southern side of the river, for approximately 200 metres. The building is located between Vicolo Lanfranchi and Vicolo Da Scorno.

More information is available here: www.museodellagrafica.unipi.it.

G. HEMMING

Other upcoming events

The annual Ludoteca Scientifica will be taking place from the 1st to the 31st of March at ITIS 'Leonardo Da Vinci', Via Contessa Matilde 72, Pisa. See www.ludotecascientifica.it for further details.

We also invite our readers to visit the Ludoteca Scientifica, which in 2012 will reach its 10th edition. The visit will be as enjoyable as in the past years and will help children and parents to understand a lot about science through direct participation in simple experiments.

"...tra le sicure maniere di conseguire la verità è l'anteporre l'esperienza a qualsivoglia discorso... non sendo possibile che una sensata esperienza sia contraria al vero."

"putting experiment before any talking is a certain path to reach the truth...it not being possible for a sensible experiment to be opposite to the truth."

Galileo Galilei, 1640

LUDOTECA SCIENTIFICA
DIALOGAR DI SCIENZA SPERIMENTANDO SOTTO LA TORRE



DECIMA EDIZIONE
dal 1 al 31 Marzo 2012

presso ITIS "Leonardo Da Vinci"
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INFORMAZIONI E PRENOTAZIONI
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LETTER TO THE EDITOR

After the publication of the Roman recipe in *h20*, I was expecting a comment by our "Latin (language) lover", Paolo La Penna. In the absence of any reaction I complained to him by e-mail. This time the answer was very prompt, just a few hours later I got this little masterpiece, where also the sender's name and his address are written in Latin:

Ave Carle. Maialis deh, non denotavit libellum ille, mea culpa, mea maxima culpa! Peccatum, oblivisci introspectiendi, cum libellus excellentissimus erat, merendus quidem pede libero pulsanda tellum: gratulatio tibi gratulationis. Et porcellum (fortasse mentio occulta discussura legi electoranda erat?) delicia optima esse debet, sine dubio propaganda et diffundenda,

apprecianda maxime in Cruccagna, ubi porcellum in omnibus coniectandis allecibus prelibenter devoratum est, maxima cum satisfactione populi istis lurcissimi.

Quare id faciam, gratias tibi ago et etiam tibi annum bonum ominor. Et quousque tandem: Ave atque vale

Servus, Paulus

Paulus Calamus

*Instrumentationis Cohors -
Accomodandae Opticae Centuria
Europaea Meridiana Specula
Carlus-Umbonigrus-Via, II
Garcingum iuxta Monacum
Germania Raetica*

Hello Carlo. Maiale deh (Livornese slang, literally “pig”, equivalent in English to one of many swear words), I did not notice that issue (ofh), that was my fault, my greatest fault! What a pity, to forget to read

it, since it was excellent, worthy of dancing footloose upon the earth (Horace, Odes, I, 37, 1): congratulations to you. And the piglet (perhaps it was a hidden hint to the “Porcellum” election law to be discussed in Italy?) must be an optimum delicacy, surely to be advertised and widespread, particularly appreciated in Krautland, where pork is eagerly eaten dressed with any possible sauce, with the greatest satisfaction of this guzzler folk.

How can I do this (“Odi et amo” Catullus ??), I thank you and I wish

you also a good year.

And at the end: hail and farewell.

Goodbye, Paul

Paul the Pen

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PERSONNEL MOVEMENTS

Departure

Virginie Bornes

worked 3 years at EGO as ET Administrative Assistant and left at the end of December 2011.



GOOD NEWS!

Welcome to Kara (left) who arrived in the Mohan Family on January 7th, 2012!



And welcome to Juan Diego (right), born on February 7th, 2012, and who has since been astonishing his parents, Paolo Ruggi and Angela.