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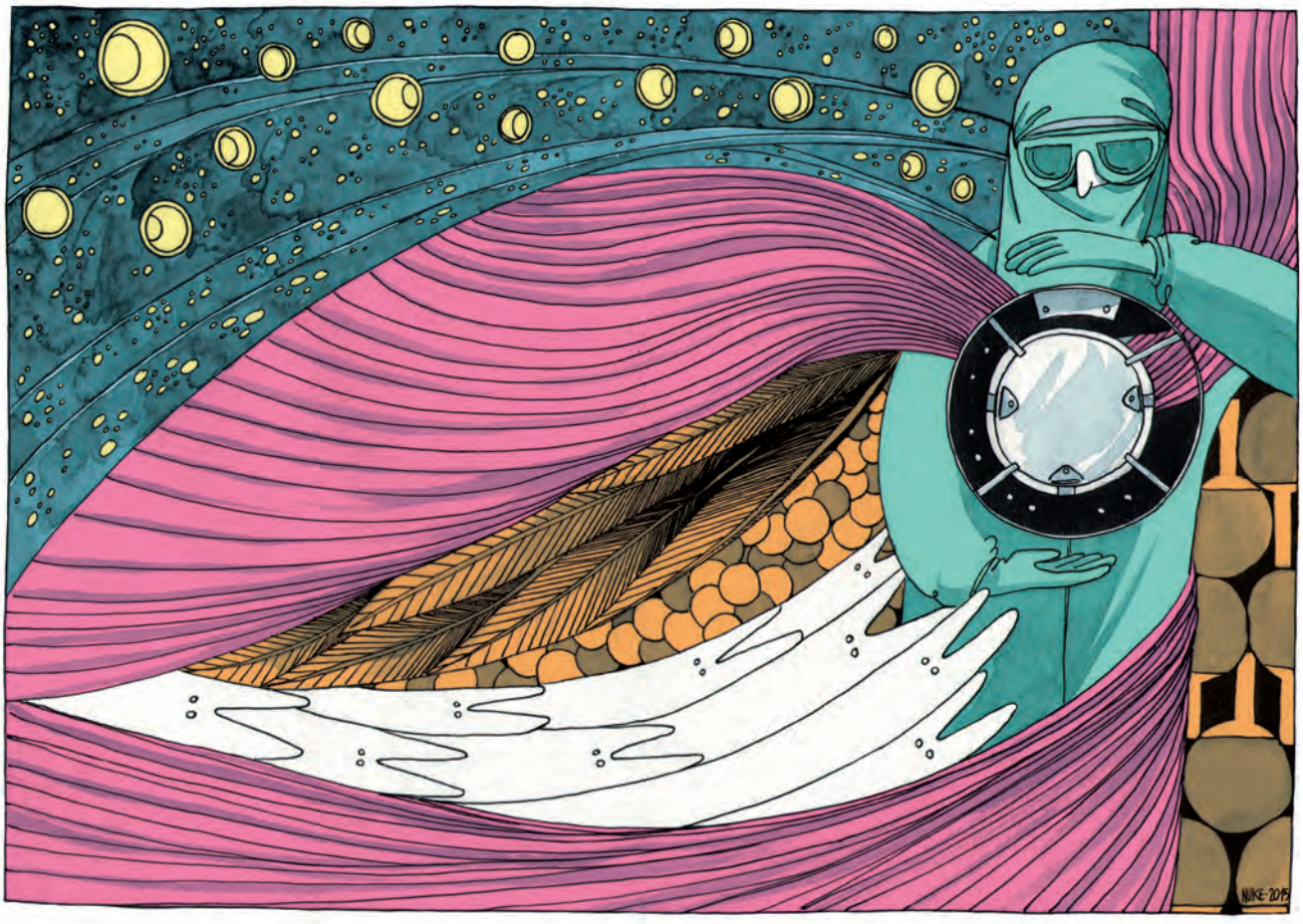

News from EGO and VIRGO

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

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EDITORIAL

This edition of h28 published on June 2015 marks the 10th year of life of our newsletter which was first published as h1 in July 2006. The composition of our editorial team has changed over the years depending of the availability of its members but the chief editor (a certain self-appointed Carlo) remains the same.

I feel that it is now time for a breath of fresh air. In agreement with the present editorial team we ask our readers to volunteer or to suggest names for a new chief editor. I do not foresee a formal election, but rather a friendly selection without a sharp dead line. Of course new members for the editorial team are also be welcome.

C.Bradaschia
Chief Editor

"The War on Science"

The front page of the March 2015 issue of National Geographic, the official magazine of the American National Geographic Society, features an article by Joel Achenbach with the title "The War on Science".

The article is about the surprisingly widespread belief in ideas that contradict scientifically-established knowledge. The article cited examples like the belief that the moon landing was in reality staged in Hollywood, that the theory of evolution is wrong or that vaccination causes autism.

While the belief in a faked moon landing may sound amusing, the question of whether to vaccinate or not can have a serious impact on the health of the individual and put at risk the herd immunity of the population by giving a disease the possibility of surviving by spreading among the non- vaccinated members of the group if there are enough of them.

Even worse, South African president Mbeki, denying the relationship between the HIV virus and AIDS and suspicious about western pharmaceutical companies, had access to anti-AIDS medicine ("poisons") obstructed, while promoting ineffective treatments like garlic and lemon juice.

During the nine years of his presidency, this is estimated to have caused the unnecessary death of hundreds of thousands of AIDS patients. So an "unconventional theory" is not always just innocent daydreaming.

The reasons for clinging to irrational ideas go farther than just confirming or dismissing facts.

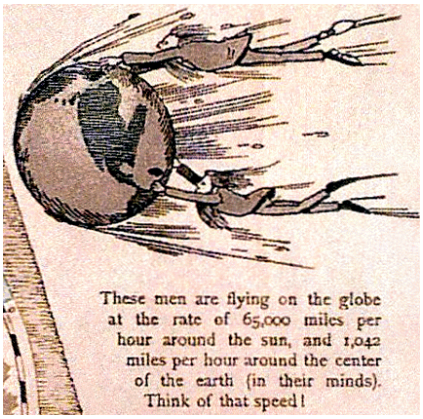
Scientific thinking is not built-in into our brain, which searches causal connections between sometimes unrelated facts in order to find an intuitively or emotionally compelling interpretation, rather than dry scientific reasoning, which is moreover unsatisfactory because it never yields "final" answers, but only current-state theories which are subject to being amended or overthrown one day.

Convictions and beliefs have also to do with the feeling of belonging to a group.
The fact of defending an argument is a sign of being inside a "tribe". Thus arguing about facts is not always helpful for convincing people. In an example cited in the article, it was the question "do you believe them or me?" which finally made the difference in the discussion.

Things don't get easier by the fact that some media, making a living from relating interesting facts, tend to give outsider ideas a disproportionately large amount of room compared to the unspectacular results of science, progressing slowly by assembling little pieces of evidence.

Moreover, in the era of the Internet, it is easy to set up a blog or a web page for diffusing information that would not make it into an established printed publication. This reinforces the so-called "filter bubble": people who are already convinced of something can feed on information, which reinforces their belief and ignores whatever contradicts it.

A particularly remarkable example is an anti-vaccine activist who said in a talk show: "The University of Google is where I got my degree" – an internet search engine on the same level as university education.



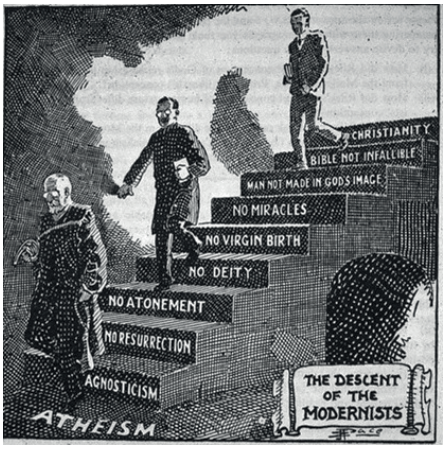
A detail of the Flat-Earth Map, drawn by Orlando Ferguson in 1893 for proving that the Bible is right and that the Earth cannot be a sphere.

One might actually think that better education makes people less susceptible to adhering to strange theories; yet, it rather seems that education polarizes, since people use their scientific knowledge for corroborating the convictions they already have.

Thus the doubt in science is more widespread among educated people. Even in serious research there is the danger of the "confirmation bias", which can lead researchers to unconsciously favour findings which are in favour of their preferred hypothesis and dismiss contradicting results as unreliable.

The boundary between conspiracy theories and justified concern is not always easy to draw. The article states that genetically modified food is considered dangerous by many people despite scientific research never having shown any danger. In Europe genetically modified food must be labeled, since skepticism is particularly large here.

The perceived fear is not only for health, but also for unpredictable long-term environmental risks; moreover, the benefit of genetically modified food for the consumer is less visible than the problems caused by patenting seeds or the dependency of farmers. Consider



Resist the beginnings!

Freckles, the genetically modified goat whose milk contains spider protein for potential future use in industry.

The benefit of this is, for the simple citizen, less impressive than the idea of a monstrous Frankenstein-like spider-goat. So reluctance with respect to this new technology is not surprising. It gets even more complicated.

A few years ago, the idea that some organisation would endeavour to collect and analyse all information about everything and everybody on the Internet would have been considered a far-fetched conspiracy theory.

The fact that such an absurd fact is today indeed reality certainly doesn't help in convincing people to abandon their strange ideas.

H. Heitmann

The Hollow World

As we are talking about strange theories in this issue of h, here is an interesting example.

As opposed to the theories in the other article, this theory is not taken very seriously and it certainly doesn't have nefarious effects on health, society or education.

You have certainly heard about the fact that the Earth is a sphere.

Not all believe this (see the picture in the other article), but the large majority do. However, it is rarely said how this sphere is configured.

All believe that it is a solid sphere surrounded by an (almost) infinite universe but who says that? Couldn't it be the other way round, namely that we live on the surface of a bubble inside a massive "universe" made of solid rock?

Then the sun, the moon, the stars and galaxies; everything would be in the small space inside the bubble.

If this is the case, shouldn't we see the other side of the bubble-Earth if we look up into the sky? No! Because, as is the case for many defendants of unconventional theories ("Dinosaur fossils were placed there to test our faith in Creation"), we have to adapt everything in such a way that reality is in agreement with our assumption. So, firstly, light doesn't go straight, but in curves.
Therefore, if you look up a little bit, your view will be deflected away from the border of the bubble in the direction of the center of the bubble.

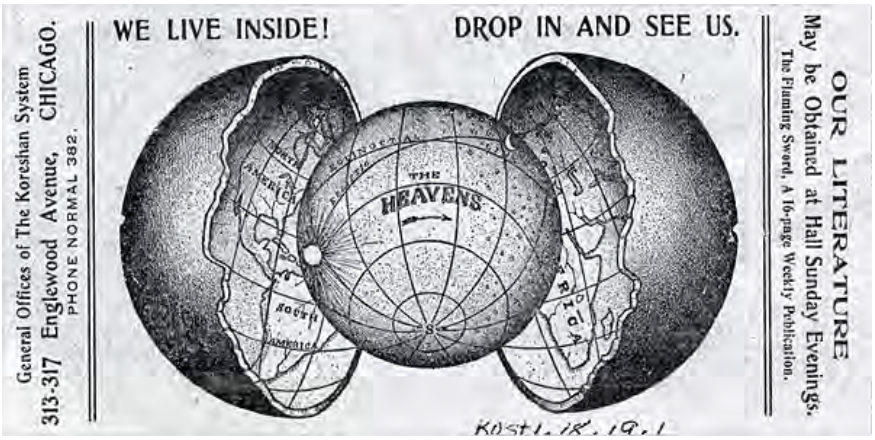
However, at some point it should hit the border again and one should see another continent, no? No, since… the light speed is not constant; light gets slower and slower as it approaches the center of the bubble. And so you will see the sun and all the stars, but never the other side of the Earth.

Scientific minds tried to prove this theory in 1897 (the Koreshan Geodetic Survey). For measuring the Earth curvature they couldn't use light, since, as we know, it doesn't go straight; so they used a system of wooden rulers.

After months of measurements at the border of the sea the result was: the Earth's surface is bent upwards instead of downwards as we all thought. So the theory must be true – unless they made a mistake during their measurements, always mounting one ruler at the end of the other, with rain and sunshine, salt and humidity …

If you make all the assumptions right, it might actually be as difficult to empirically refute the hollow-world theory as to prove it. In the end, it is just a complicated coordinate transformation, with corresponding adaptation of all the laws of physics.

We must fall back to Occam's razor, i.e. reject the theory because it is unnecessarily complicated without adding any prediction of a verifiable phenomenon.



A variant of the hollow-world theory, actually promoted by a group called Koreshans.

What about gravitational waves in this theory? Well… if you have spare time, why not become immortal by making your own hollow-world gravitational theory?

H. Heitmann

Genetically Modified Organisms

Publishing on such a controversial subject, our aim is to stimulate debate among our readers.

It will be very interesting to hear the attitudes of people in a frontier science environment, such as ours, on a subject that is often felt in an instinctive, not rational way. We hope to receive many letters on the subject.

To trigger the discussion we present here the opinion of an active scientist. The article was published in La Repubblica a few months ago and was written by Elena Cattaneo, a world-leading scientist working on neural stem cells at the University of Milan. She was appointed a Senator-for-life in 2013 by the then President of the Italian Republic, Giorgio Napolitano.

The following is a translation by Gary Hemming of the article, "*Vietare gli Ogm e' un grave danno. Non ci sono prove che siano nocive*", which appeared in *La Repubblica* on Saturday the 4th of October 2014, which has not been reviewed by the author.

Elena Cattaneo: Forbidding GMO is a grave loss when there is no proof that they are harmful

It is opportune and healthy, also as a function of the challenges that arise from the serious economic crisis in the country, that we return to talking calmly and in detail about genetically modified organisms (GMO); a controversial subject, which is, in my judgment, treated too emotionally. It is a new fact and this gives me hope.

During a recent convention, organised in Mantova by Lombardy and Veneto Confagricultura, a discussion was held on the reasons why it is not possible to do in Italy that which is being done in Spain, with all of the associated advantages for the environment and the economy: the cultivation of (among others) corn that has been improved with bio-technologies.

Many, many food products that are 'Made in Italy' exist thanks to GMO food, which we import from abroad. This obviously does not harm either health or taste. Yet, it harms our pockets considerably, given that the agricultural balance sheet has been in deficit to the tune of at least four billion euro a year for decades. These are certain and demonstrated data.

I am still searching for evidence against GMO (corn, soya, cotton). I am studying each of them one by one. It is quite a task. The scientific literature is difficult, but it is public and accessible to all.

With the help of several colleagues I have understood that for some GMO, such as corn, the evidence of environmental security and in terms of human health is exhaustive and certified. For others, such as rapeseed, this is not the case. In this case, there is a risk of mixing with similar plants.

In a few months the patent on GMO corn will expire, following the recent expiration of the patent on soya resistant to a herbicide. Some countries are organising themselves to take further advantage. We are not.

Against GMO the same arguments are heard as have been heard for fifteen years.

I ask myself how it is possible to ignore fifteen years of evidence and scientific publications on the safety of plants such as biotechnology corn or cotton, or GMO soya. The criticisms are always the same: 'They aren't safe'. 'We do not know what might happen over a long period'.

But these are just vague judgments. Opinions or premonitions. Meanwhile, in the United States (as in Spain), they cultivate them and, like us, they have been consuming them for twenty years.

The agency that certificates environmental and human safety, the European Food Standards Agency (EFSA) in Parma, the European Commission, the World Health Organisation, and a multitude of scientists used to international debate, have checked and concluded that, for example, biotechnology corn is safe.

Or rather, that is safer for the environment and for human health than traditional corn, dusted with insecticides, or than organic corn, which sometimes displays worrying levels of carcinogenic micro-toxins.

Is it possible that all of these public organisations authorise dangerous things? If someone has different data, preferably that has not been manipulated or is artificial, then they should make them available so that they may be checked.

The governmental and economic policy of the country cannot be based on 'sentiments' or opinions, but rather on scientifically validated facts.

In the interests of the country, decisions must be made through the comparison of facts, numbers and statistics.

These are the rules of scientific and, ultimately, democratic debate.

Otherwise, it is as if Galileo Galilei were never even born and we were still not able to understand what has made it possible to triple life expectancy, cure illnesses, heat homes, go to the moon, etc.

Today, we pay dearly for so-called organic foods, which guarantee to be free of GMO. This does not seem honest to me.

No Italian can be certain that they have never eaten for example, I don't know, an organic salami made from animals that have not been raised on GMO, and this guarantee will certainty not be available until at least 2018, and maybe later (as specified in the EC Regulation 836/2014, which renews the umpteenth waiver for chicken and organic pig feed).

I am not interested in discussing whether a food without GMO is better or worse, even if I would be curious to see an experiment to determine whether someone were able to note a difference in the 'typical Italian-ness' of salami obtained from animals fed on one feed or another.

I really want to discuss things as they really stand; that which we can prove. I am a scientist and therefore my first duty is always to say what has been proven up to now, to the best of our understanding. I ask the same of any counter-point, not opinions.

For twenty years the principle of precaution has been invoked in terms of GMO. For twenty years we have been experimenting with them, in-directly feeding on them and dressing ourselves with GMO cotton.

And I do not understand why the principle of precaution should not be applied to insecticides, which twice a year for decades, have been spread on hundreds of thousands of hectares of corn, with visibly damaging effects on biodiversity (butterflies, ladybirds, larvae) and

The neural stem cells laboratory of Elena Cattaneo in Milan
"Courtesy of Laboratory of Stem Cell Biology and Pharmacology of Neurodegenerative Diseases, University of Milan"

in terms of human intoxication, which has even been recognised by the Pontifical Academy of Sciences.

Italy, which is 'free from GMO', uses two and a half times as much pesticide as the United States. In the USA, both GMO and organic products are cultivated and are chosen on a case by case basis, without the need to deprive themselves of either type of agriculture.

We scientists cannot even study them. We cannot experiment in order to recover plants on the verge of extinction, such as, for example, the San Marzano tomato or Carnaroli rice. We were at the frontier of vegetal biotechnology.

These projects have been frozen for fifteen years in the drawers of the laboratories of our public universities (not of multi-nationals). A country that kills its own innovation through the use of bogeymen, without the use of in-depth analysis of the risks and benefits, is indeed singular.

I also do not understand the silence of a left-of-centre government, which dis-interests itself from those millions of citizens forced by the crisis to reduce grocery bills and who certainly cannot pay for organic food (of which only 2% of the population take advantage) – against which I am not, I repeat, contrary.

Finally, I ask myself how it is possible to have the political activist Vandana Shiva as Ambassador for Expo2015. Even after the interview published yesterday in this newspaper, in which she refutes none of the New Yorker's arguments. She admits that she does not have a PhD in Physics, but rather a Master's and PhD in philosophy.

She is not, therefore, a scientist in the physics field, as she had led to believe.

She no longer repeats that GMO seeds are sterile and is vague about the suicides of those farmers which she attributes to Monsanto's GMO cotton seeds. Previously, she said that there were two hundred and eighty thousand. Even her criticisms of patents are completely out of place.

The farmers are proprietors of the GMO seeds purchased and can re-sow them on their land as many times as they wish.

However, seeing as hybrid seeds (both GMO and non-GMO) become less productive if re-sown, the farmers re-purchase them. This has always been the case. And, if it is economically convenient, they also purchase those that are licenced. Thanks to GMO cotton seeds, India has, in just a few years, become the second-largest producer of cotton in the world, while 93% of India's farmers have chosen GMO cotton seeds.

Do we want to say that Indian farmers have all passed over to the purchase of GMO seeds because they yield more? And how can we not be sympathetic to our farmers when they request the same enterprising liberty: to (also) cultivate corn that has been modified using the same gene as that used to make Indian cotton so advantageous.

I conclude, by also expressing apprehension for the fact that forty thousand agricultural businesses, many of which would like to cultivate both organic and GMO in freedom and safety (because their co-existence is possible), close every year in Italy. While I learn that Coldiretti, which is against GMO, sells and uses GMO feed.

There is something deeply wrong in our country. The GMO issue is exemplary, in the same way as the issues of stem cells, animal experimentation, vaccinations, etc. It is the loss of the sense of what is 'true in a provable sense'.

Science looks for proof. Parties look for votes. The country needs a vision and a political culture that returns to the valuing of facts and expertise, as a prerequisite to the recovering of the trust of the electorate.

E. Cattaneo

L'Isola di Einstein

The ISOLA di EINSTEIN (http://www.isoladieinstein.eu/) is not only an international review of science shows, but it is also a real island. The island of Polvese (http://www.polvese.it/), which is in the middle of the Trasimeno Lake, not far from Perugia.

An event will take place on this island from the 4th to the 6th September 2015 which will combine science, technology, art, nature and innovation.

It is the new edition of a recently-born series of festivals in which scientists, communicators and street artists from all over the world provide scientific demonstrations. Visitors will be amazed and amused, regardless of their age and cultural background.

Over three full days, events will take place everywhere on the island, including on the boats and piers. Food and lodging is available.

These events have all been conceived and developed by Psiquadro, a branch of EUSEA (European Science Events Association – http://www.eusea.info/About).

Leonardo Alfonsi, the president of EUSEA, is a friend of EGO and Virgo. He was among the team of teachers at the 2015 GraWIToN School (http://www.grawiton-gw.eu/).

EUSEA is the platform for exchanging experience about the organisation of informal science learning events in Europe, which has developed into a platform for scientific communication.

It promotes dialogue between lay people and scientists using various formats, like science parliaments, citizen conferences, science cafés (as well as special ones called "science café for girls"), Children's Universities etc.

We suggest our readers spend some time at Lake Trasimeno, even if not the full weekend.

The 2014 Thesis Prizes

It is a pleasure to announce that the selection committee for the GWIC Thesis Prize and the Stefano Braccini Thesis Prize has reached a decision. This year there were a total of 15 nominated theses from 4 different countries.

GWIC Thesis Prize

The 2014 GWIC Thesis Prize is awarded to Leo Singer for his thesis "The needle in the hundred square degree haystack: The hunt for binary neutron star mergers with LIGO and Palomar Transient Factory."

Dr. Singer received his Ph.D. from the California Institute of Technology and was nominated by his adviser, Prof. Alan Weinstein. His thesis addresses the most challenging problem of joint observation of BNS coalescence events by gravitational wave and electromagnetic detectors. It has two main aspects:

(1) A new framework for a near real-time sky localisation scheme for gravitational waves (BAYESTAR), and (2) the development of wide-field searches for optical afterglow of GRBs using the Palomar Transient Factory telescope.

Stefano Braccini Thesis Prize

The 2014 Stefano Braccini Thesis Prize is awarded to Yan Wang for his thesis "On inter-satellite laser ranging, clock synchronization and gravitational wave data analysis". Dr. Wang received his Ph.D. from the Leibniz University of Hannover, and was nominated by his adviser, Prof. Karsten Danzmann.

Dr. Wang's thesis covers a diverse set of topics related to space-based gravitational wave detection using interferometric instruments such as the Laser Interferometer Space Antenna (LISA) and its brethren. The largest part of the thesis develops algorithms to synchronise clocks and improve the ranging accuracy via post-processing, thus significantly improving the ranging precision.

The prizes will be awarded at up-coming international meetings where the winners will be taking part.

C. Bradaschia

The 2015 GraWIToN School

The 1st GraWIToN School was held at EGO from the 20th of April to the 8th of May.

If we describe the School in "numbers", the depicted scenario is quite impressive. Besides the 12 GraWIToN ESRs (Early Stage Researchers), another 13 students participated in the school. 24 teachers from all over Europe contributed, with about 100 hours of lessons distributed over the three weeks.

The spectrum of the subjects presented during the school was very wide. The basic notions of gravitational wave (GW) research, elements of general relativity and astrophysics, basic concepts of optics and laser technology, a first approach to the simulation environments in GW research, notions of digital signal processing and science communications tools.

Team-building was a self-organised activity, by having the students share their spare time during the school (and the idea of hosting them in the same hotel in Pisa was quite positive).

Among the most "sparkling" sessions were the science communication lessons and the activities with the Arduino micro-controller during the digital signal processing session, where the students had to play with hardware, software and algorithms.

The comments of the GraWIToN students have now been collected, to evaluate the quality of the school

and improve the next school, which will be hosted in November 2015 by the Gran Sasso Science Institute (GSSI, L'Aquila) and will focus on astrophysics and data analysis.

In parallel to the school, other events were organised: the LIGO-Virgo electromagnetic follow-up meeting, with the participation of dozens of Astrophysicists and astronomers coming mainly (but not exclusively) from around Europe, and the Virgo Week (the periodic meeting of the Virgo Collaboration).

This overlap exposed the students to an international environment and demonstrated the good capacity of the EGO infrastructure and services to support international events.

A special thank you should be given to the persons that made everything possible: Erika Morucci, who anticipated or solved all of the administrative, organisational and logistical problems; Elena Cuoco, who was the main builder of the scientific content and structure of the school; the entire EGO Computing Department, in particular Andrea Matteini and Giuseppe Di Biase, who supported the school and its needs during these three long weeks.

M. Punturo

Hard at work at the GraWIToN School

GOLD - Global Open Lab Days

Light is a cosmic messenger and much more. In Virgo, we use light as a tool to measure space-time and detect gravitational waves. This is why Virgo scientists participated in the Global Open Lab Days (GOLD) initiative (http://www.light2015.org/Home/Event-Programme/2015/Other/-GOLD-Global-Open-Lab-Days.html) promoted by the committee of the International Year of Light (IYL2015).

During GOLD, labs across the world welcomed visitors to come and see how they study the nature of light or are using light to study Physics.

The European Gravitational Observatory (EGO) participated in GOLD, and opened its doors on May 9th, for an entire day dedicated to Virgo and its scientific goals.

The open day was a great success, with more than 300 visitors at the EGO site in Cascina, near Pisa.

The day started with guided tours of Virgo from 10 A.M. to 5 P.M.

About 150 people attended the tours and learned what gravitational waves are and how Virgo and LIGO will open a new window on the Universe.

"For EGO, the popularisation of science is an important task and we have always tried to engage the local population and schools, showing the research we do for the experiment Virgo" said Elena Cuoco, researcher and coordinator of the Education and Public Outreach activities at EGO.

There was also a special programme for the evening that started at 8:30 P.M. with a public

seminar dedicated to the wonders of the Universe and the Virgo experiment.

After the seminar, visitors had the chance to see a model of the Virgo interferometer and some interesting experiments about gravitation, including a modern version of the famous, yet fictional, free-fall experiment attributed to Galileo.

The programme also included guided visits to the control room of Virgo to see the status of the upgrades for Advanced Virgo. Thanks to the telescopes of the amateur astronomers in Pisa (Associazione Astrofili Pisani Galileo Galilei - http://www.astrofilipisani.it/) the visitors could also observe Venus, Jupiter, and other celestial objects in the deep sky. More than 150 people gathered at EGO for these evening activities.

For GOLD2015, we also inaugurated a special Twitter Wall for EGO and VIRGO, which was shown in the main hall and in the Virgo control room. Everybody can contribute to this Twitter Wall (https://twitter.com/ego_virgo), by simply tweeting us @ego_virgo.

"To improve our outreach activities we have set up a communications office on the EGO site and a European Virgo outreach group over the last months".

Cuoco then added, "The event organised on the site of EGO on May the 9th and its success, gives great satisfaction to all of us who worked on the event organisation".

Many adults and children were excited to learn more about Virgo and gravitational waves. There were many questions, answers and good science. This was how EGO provided its first contribution to the International Year of Light.

M. Razzano

Biathlon 2015

This year the Biathlon competition (the eleventh) will take place during the summer Virgo week instead of during the September Virgo week, as in 2014.

The race will start on Thursday July the 2nd at 7:00 P.M., followed by a buffet, kindly offered by the EGO Director.

h-readers and friends are warmly invited to set up strong, fast teams to repeat the breathless finish of last year.

An Indian Wedding (Part II)

The following is a transcript of an interview with Viswanath Bavigadda, undertaken by Gary, to hear just how things went at his wedding back home in India a few months ago.

GH: So, Vis, first of all congratulations on your marriage and the first question is how is married life?

Vis: {Laughs}

GH: Be careful, Vis!

Vis: Yes, there's more responsibility, of course. You know, it's someone to take care of, but, in another way there's someone who hears, good, bad, everything. It's pretty nice.

It's a new phase of life. I think my family is much happier, because my mother feels that I am settled now; ready to buy a new home. There's a sense of security. You know, we were four kids in the family and all of the others are older than me. They all have kids that are going to school. My mother would like to see my kids.

GH: So your mum now says 'now I can relax!'?

Vis: Yes!

GH: And so, tell us about the wedding then. How did it go?

Vis: The wedding went on for two days. The first day we were at my place and they did some ceremonies for the groom.

GH: So, to have an idea, do you live in a town, in a village?

Vis: My home town is a bigger village, a small town; thirty thousand people. We had a get together with my extended relatives. We had about two hundred people related to my family circle, who attended the ceremonies on the first day. My father passed away twenty years ago and so some of the ceremonies were related to him, and there were also other ceremonies; for example, every family has a god they believe in, so they do the prayers. And then we started to travel to the bride's place, where the marriage took place.

GH: And how far away was that?

Vis: It's a four-hour journey; about three hundred kilometres.

GH: Did you all jump in the car or what did you do?

Vis: Yeah, some of us went by car, others by train, minibuses. You know when you have three hundred people moving.

GH: It's a migration!

The family of the bride

Vis: Yeah! So, we arrived the day before the wedding, which took place early morning, about 7 o'clock, on the 17th of December.

GH: OK. So to have an idea, was the town you travelled to of a similar size?

Vis: It's bigger; about one hundred thousand people. At this place, the bride's family arranged things for us. We stopped in hotels and there was a big function hall. And then in the middle of the night there were some ceremonies, in which the people on the groom's side ask the bride to participate. It's almost like in the middle of the night; at twelve o'clock or something like that, and then it goes on for two hours or so, after which time she was almost asleep.

GH: So let me get this right, the groom gets to sleep all night in the hotel, while the bride is kept up all night by the family and friends of the groom!

Vis: Yes! It's because she has to get to know people from the groom's side of the family.

The interesting thing is that some important guests participate in this ceremony, are known people from both sides, reputed and have a good position in society and serve as witnesses. It's a ceremony in which both the bride and the groom's families present themselves and people look at the ways in which the bride carries herself. And also, it's important because, you know, if my wife and I have some differences or complaints, these people will be brought into the enquiry.

GH: So this is an important role that they have. It's not just a kind of maintaining tradition, you actually sew these witnesses into the wedding itself?

Vis: Yeah, exactly.

GH: And it makes it even more difficult to divorce, I suppose.

Vis: Yeah! And then from my side we woke up about four o'clock, to get ready, you know traditional dress, so there were these ceremonies. Before the midnight ceremonies there was a reception, organized by the bride's side; they invited all the friends and I had to stand up for almost four continuous hours. Everyone was coming and wishing me well and congratulating me.

GH: It wasn't too hot then I suppose.

Vis: No, it was OK, you know, it was in December.

GH: It would be worse if it was now!

Vis: Oh, yes! Too hot! So there was this reception, then the other ceremonies and then the wedding, where we actually tie a knot. The groom ties it three times around the bride's neck in a thread made of turmeric; it's a spice, yellow in colour, used mainly in good ceremonies. I think the yellow signifies something rich, related to life. It's close to gold. Obviously we can't use gold in everything. During the wedding there is a priest chanting mantras for two hours, asking us to follow his instructions. It started around five o'clock and finished around seven-twenty. And then that's it. That's the main wedding ceremony and then everyone throws rice. After that, there were a few more pictures, with close family. All the ceremonies were finished by the afternoon and my family left to return to my home town. After everyone had left, then I had to stay with my wife's family for two days.

GH: So you go to their house then for two days?

Vis: Yes, it's like, if the wedding takes place in my town then she has to follow these customs, but as it took place at hers, it was up to me.

GH: And traditionally do weddings occur at the groom's or the bride's place?

Vis: It depends. The families decide. In my case, everyone stays in different places. My father is no more and my mother can't take care of everything, so we thought it was not a feasible option, so we asked the bride's family and they agreed really happily, so we were glad that they took the whole thing on.
I went from here, like ten days before, and then I had to do all my shopping, and then meet a few friends, so it was not a feasible option to stay at my place.

GH: And did you go on honeymoon afterwards?

Vis: It's not mandatory for us.

GH: I guess you come here anyway right? I mean, where are you going on honeymoon? Oh, we are going to Tuscany!

Vis: Yes, exactly! So she had a three-month honeymoon!

G. Hemming

Viswanath e Susmitha

Nuke, a graphic novelist at EGO

When you come to the EGO site and find a shock of curly hair peering from the reception desk, a sudden smile comes to your face.

If Claudia Razzoli is on duty as receptionist then it is (at least) Thursday and the weekend is approaching.

But this is by no means the only reason we love Claudia.

With the recent issue of her latest book "Effetto Casimir" (Casimir Effect); we decided to find out more about Claudia's real passion: cartoon drawing.

Séverine and Antonino (S&A): Hi Claudia, we grabbed one of the first copies of your latest book "Effetto Casimir" and wanted to ask you some questions about it and about you.
First of all, your "nom de plume": why is it "nuke"? What do you think you are, an atomic bomb?

Claudia Razzoli (Nuke): Oh no, the origin of "nuke" is completely different. It comes from Japanese, not English and refers to a character of one of my preferred graphic writers: Ai Yazawa. Actually it is the name of her cat and it could be translated as a person who acts so silly that everybody thinks she is stupid.

S&A: It is surprising that you chose such a nickname. You do not seem stupid at all.

Nuke: Well, I started to sign my drawings as "Nuke" more than 15 years ago, when I was a teenager, with my share of problems and troubles. Now it is simply part of me.

S&A: You started drawing when you were barely more than a child.

Nuke: Yes, I started really young and it was clear since the beginning to me that this was what I wanted to do in my life. Actually, it was more than that: it was how I wanted to spend my life.

S&A: What got you into comic drawing in the first place? And why are you still doing it?

Nuke: At the beginning, it was my passion for movies that drove me to comics. I badly wanted to make a movie but it was too difficult. You needed too many people, too many resources. Drawing seemed to be a nice second-best. Then I discovered a completely different language in comics and now I can say that this is my own language, the way I express the stories I need to tell.

S&A: … your comics are really personal. We think about "I diari della Nuke" (Nuke's journals) for instance…

Nuke: All of my comics are personal, definitely. If you read "I diari", they are exactly what the title suggests: my journal. It was like, at some point of my life, I needed to express my thoughts, my inner feelings, so that I was not overwhelmed by them but it was even more than this. It was an inner exploration or, in a way, the very building of my inner self. It worked as good replacement for the treatment I could not afford (she smiles).

S&A: Have you ever tried to write a non-graphic novel? (We know you have, so do not lie).

Nuke: How do you know that?!? It is true, I must confess, I wrote a novel when I was thirteen: not my masterpiece.

S&A: What was it about?

Nuke: Oh please, it was so romantic… No actually it was more than this, it was schmaltzy, unreadable. Let's forget about it.

S&A: But you have your revenge now with "Effetto Casimir – Ordinaria disevoluzione di una coppia" (The Casimir Effect – Ordinary disevolution of a couple). It is still a romantic tale but far from being schmaltzy. You depict a couple's evolution (or "disevolution" as you say) with two metaphors: the Casimir Effect from Physics and the English mariner's knot.

Nuke: Actually, this book was a way to sort out some reflections about relationships that had been in my mind for some time. The Casimir Effect, you know better than me, is the phenomenon responsible for the attraction of two plates put at a very short distance from each other. It has a quantum origin; it is actually the vacuum outside the two plates that pushes the two plates towards each other.
You see the easy translation to describe the beginning of a relationship.

S&A: No need to explain further. And then there is this English-

knot effect…

Nuke: This is a very peculiar knot. It looks like it can link two ropes very tightly and make them stay together forever. But it is actually quite easy to unfold. It will unfold at the end.

S&A: Quite pessimistic…

Nuke: Well, not necessarily. In the first place, we are all human beings, so we cannot last forever. All what we carefully and sometimes painfully build is destined to "unfold", at the end. But this would still be the extreme case. Actually, relationships can unfold for a variety of reasons and if you based your whole life on being one of the ropes in the knot, then you are left unbalanced, you cannot give yourself a meaning anymore.
This is a dangerous situation, and it is when you are more vulnerable to the Casimir effect. When you feel that the vacuum is overwhelming you, then the easiest way out is to look for the person that is the closest to you at that moment.
By stressing that the knot will unfold, my story says: build upon yourself, not someone or something else. A message that is quite positive, in my opinion.

S&A: Agreed. Beside the phenomenon which gave the title to your book, did you find any other inspiration from working in this scientific environment?

Nuke: You're kidding? There is a whole character in the book which was shaped after my experience here at EGO. His name is Claudio Redi, Ph.D. He is a Physicist who works in optics and is a blend of all the Physicists I met here, especially the ones dealing with Optics.

S&A: Uhm, he seems kind of a jerk in your book.

Nuke: Well, he is like that for narrative needs, I do not think you guys are jerks. But I took many little features from all of you to build this character. And while those features make each of you lovely, I made Claudio behave like a jerk with everybody but his wife. This was functional to the storytelling, I promise…

S&A: Ok, at this point you have asked for. What is your impression about the Physics community after being here for two years as a receptionist? You can speak freely; we will not fire you if you are not kind.

Nuke (laughing): Well, to be honest, I was a bit afraid when they told me I would be working in a research institute with scientists all around but it took very little to understand that people are the same everywhere. No scientists have ever made me feel "unfit" for this place. And, then of course…

S&A: Then…?

Nuke: Well, the ping-pong matches! When I discovered how cute you are while playing ping-pong, and the way you included me in the crew… I thought you are cool, guys. Or to say better, we are cool.

S&A: It is nice that you say "we". We like it. Can we go for a last question? Your drawing style is kind of special, a bit fuzzy or even dreamlike. It seems you want to transform even painful experiences into something that you can accept…

(*) Sport wickedness worse than the worst manga

Nuke: Actually, my style is directly linked to the way I elaborate my experiences and just to be clear, I only speak about things that I have already elaborated and overcome. You will not find things that are still painful to me in my comics. The drawing styles, the irony, are the tools I use to dismantle and then reconstruct reality in my comics.

S&A: Your book has met with a great success. What are your next projects?

Nuke: First of all, becoming more active with "mammaiuto", the group of independent comics authors I belong to. We have this website where we upload much of our work for free. It is part of our belief that we have to share what we do. Everybody should have the right to read comics. Then, if you are so disposed, you can buy the book in order to help the author to write the next one.

S&A: Thank you Nuke for your time and for the beautiful drawings you gave us.

Nuke: My pleasure.

S.Perus - A.Chiummo