

GRAVITATIONAL WAVES

The announcement of a global discovery

ON THE VIRGO SIDE

+ May 2007 – Virgo starts taking data



■ Press Conference at EGO

■ INFN+CNRS

“Virgo and LIGO will work as a unique observatory...”

+ LIGO & VIRGO– Joint Data Analysis and communication

Since 2007 Virgo and LIGO have shared and jointly analysed the data taken by all the interferometers of the international network. After the start of the LIGO upgrade, Virgo took data until 2011.

Left: LIGO Hanford & Livingston Observatories

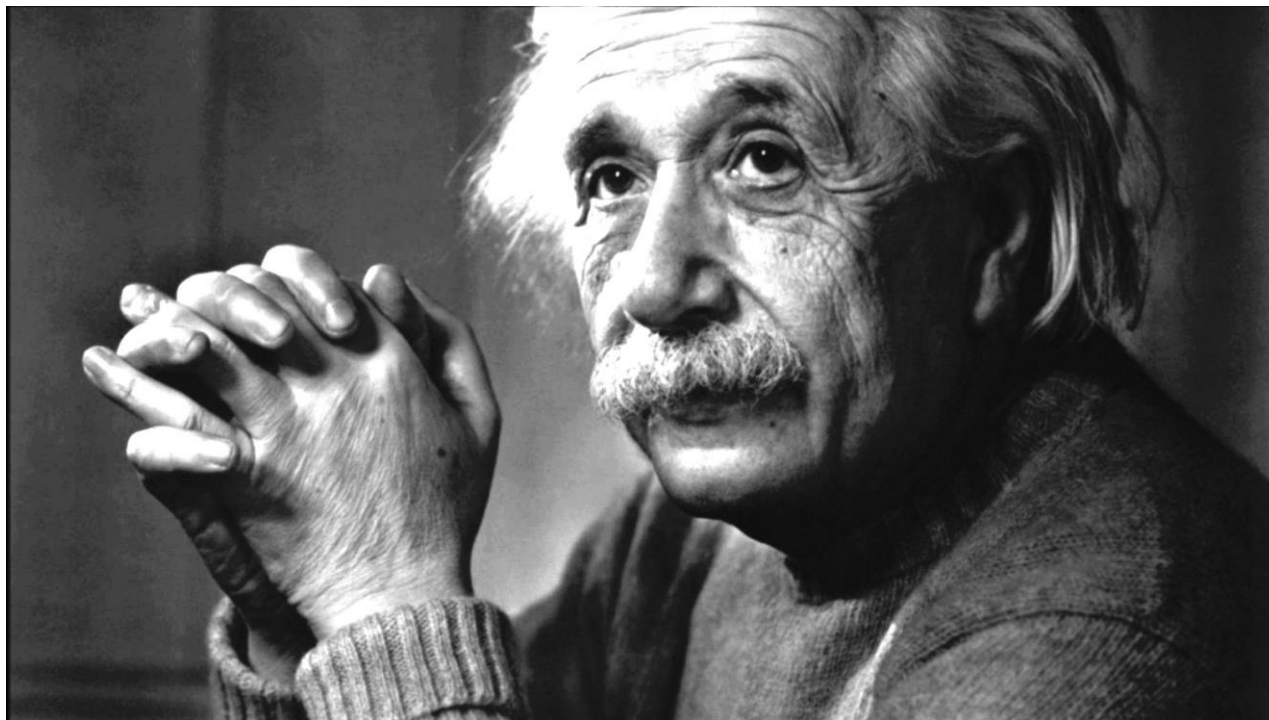


Virgo at Ego Observatory





LIGO & VIRGO– Joint Communication plan for a discovery announcement



- Common press release
- Joint press announcement

Seams easy...



But it means many delicate things to be decided

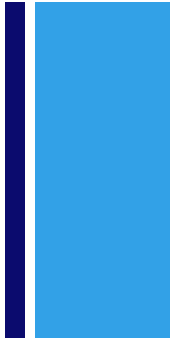
- Day of announcement
- Timing
- Headline
- Message
- Visibility of partners
- quotes



.. and agreed among many Com Partners



LIGO COM. GALAXY



- The LIGO Observatories are funded by [the National Science Foundation \(NSF\)](#), & were conceived, built, and are operated by [Caltech](#) and [MIT](#).
- The NSF leads in financial support for Advanced LIGO. Funding organizations in [Germany \(Max Planck Society\)](#), the [U.K. \(Science and Technology Facilities Council, STFC\)](#) and [Australia \(Australian Research Council\)](#) also have made significant commitments to the project
- LIGO Scientific Collaboration includes [the GEO Collaboration](#) and the [Australian Consortium for Interferometric Gravitational Astronomy](#)) and [Australia \(Australian Research Council\)](#) also have made significant commitments to the project.
- The GEO team includes scientists at the [Max Planck Institute for Gravitational Physics](#) (Albert Einstein Institute, AEI), [Leibniz Universität Hannover](#), along with partners at the [University of Glasgow, Cardiff University](#), the University of [Birmingham](#), other universities in the United Kingdom, and the University of the Balearic Islands in Spain
- + [Several US, UK, Australian Universities](#) involved at different stages



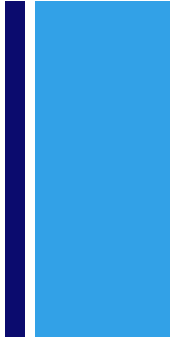
VIRGO COM PLANETARY SYSTEM



- VIRGO is based at the **European Gravitational Observatory (EGO)** in Cascina, near PISA (IT)
- Virgo was born thanks to the visionary ideas of Alain Brillet and Adalberto Giazotto.. The construction started in 1994 and it has been funded by **CNRS** and **INFN**;
- Virgo research is carried out by the **Virgo Collaboration**, consisting of more than 250 physicists and engineers belonging to **19 different European research groups**: 6 from Centre National de la Recherche Scientifique (**CNRS**) in **France**; 8 from the Istituto Nazionale di Fisica Nucleare (**INFN**) in **Italy**; 2 in The **Netherlands** with **Nikhef**; the **Wigner RCP in Hungary**; the **POLGRAW** group in **Poland** and the European Gravitational Observatory (**EGO**), the laboratory hosting the Virgo detector near Pisa in Italy.



A POPULATED AND CHATTY UNIVERSE



- LIGO Scientific Collaboration (LSC), a group of more than **1000** scientists from universities around the US and in **14** other countries.
- More than **90** universities and research institutes in the LSC develop detector technology and analyze data; approximately **250** students are strong contributing members of the collaboration.
- Virgo Collaboration, consisting of more than **250** physicists and engineers belonging to **19** different European research groups



AT THE INFN PRESS OFFICE



- **July 2015** a new version of the joint communication plan starts circulating among major partners while the restart of Advanced LIGO is approaching
- **Sept 18th** – LIGO is officially back in operations
- **Few days later** – Press office is informed that data may contain the detection of gravitational waves originated by the merging of 2 massive black holes. No other details
- **Sept 25th** – First big leak on twitter by Krauss



Lawrence M. Krauss ✓
@LKrauss1

Segui

Rumor of a gravitational wave detection at LIGO detector. Amazing if true. Will post details if it survives.

RETWEET
634

MI PIACE
667

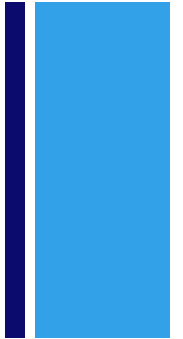


13:39 - 25 set 2015





Media love gossip..some researchers too



nature International weekly journal of science

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News & Comment > Column > Muse > 2016 > April > Article

NATURE | COLUMN: MUSE


Alexa Keefe

Has giant LIGO experiment seen gravitational waves?

An improbable rumour has started that the observatory has already made a discovery — but even if true, the signal could be a drill.

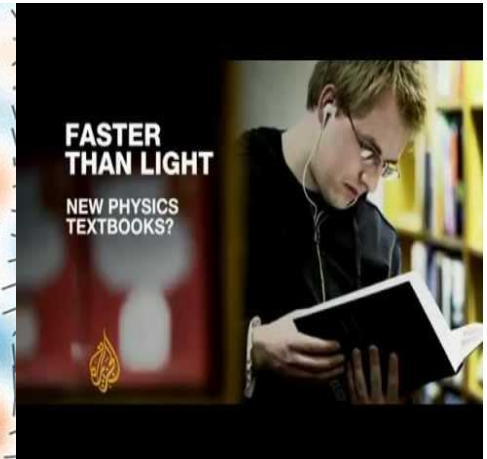
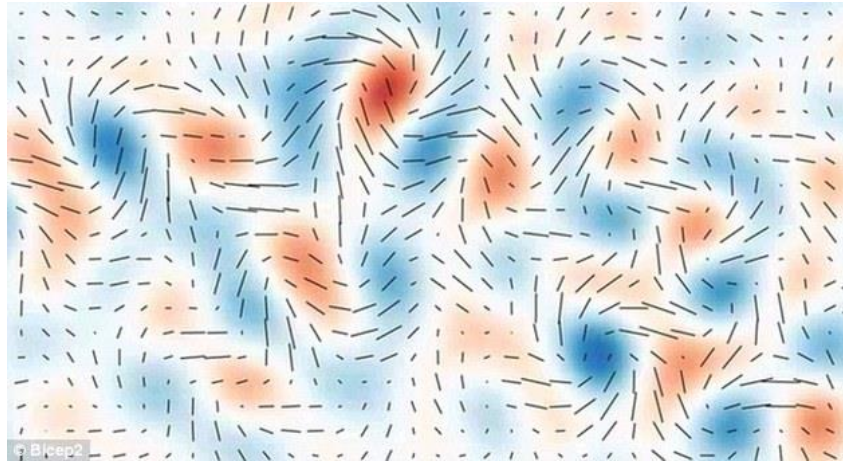
Davide Castelvecchi

30 September 2015



But previous Science and com crisis teach...

A dusty mistake? 'Groundbreaking' Bicep2 Big Bang signal was just interstellar debris in the galaxy, scientists reveal



- IMPACT OF A DISCOVERY ANNOUNCEMENT
- PUBLIC DIMENSION OF SCIENCE

+ Time & Secrets



*Do not tell secrets to those whose faith and
silence you have not already tested.*

Elizabeth I

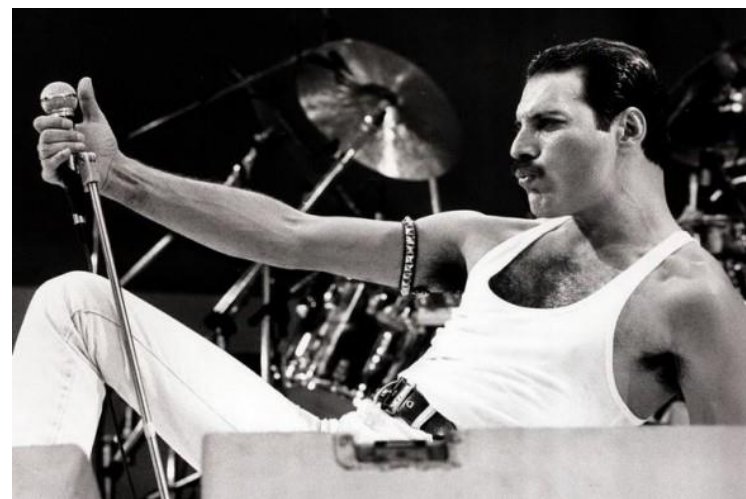


AT THE PRESS OFFICE is time for action



- Working on the joint press release with many email exchanges and multi-phone conferences with LIGO&VIRGO COM partner
- preparing backgrounders, with a national/European angle
- Collecting images and upgrading videos
- Preparing infographics
- A 1° list of scientists before announcement
- A 2° list of scientists after announcement
- Day of the announcement remained uncertain
- Journalists never stopped to call...

UNDER PRESSURE





THE ANNOUNCEMENT – FEB 11



- 2 contemporary press conference in English (Washington & Cascina) both in English. (+ other national media event: FR, UK..)
- Timing: 4 pm in Italy, very disadvantageous
- Press release with a first common first part and second free part
- Announcement given 48H in advance: “Scientist to provide an UPDATE on the search for GW”
- 1 journalist for each main contributor (6 in total) working under embargo
- Announcement via streaming – Cern operated the streaming for Virgo

NEWS RELEASE

For Immediate Release
February 11, 2016

GRAVITATIONAL WAVES DETECTED 100 YEARS AFTER EINSTEIN'S PREDICTION

LIGO Opens New Window on the Universe with Observation of Gravitational Waves from Colliding Black Holes

WASHINGTON, DC/Cascina, Italy

For the first time, scientists have observed ripples in the fabric of spacetime called gravitational waves, arriving at the earth from a cataclysmic event in the distant universe. This confirms a major prediction of Albert Einstein's 1915 general theory of relativity and opens an unprecedented new window onto the cosmos.

Gravitational waves carry information about their dramatic origins and about the nature of gravity that cannot otherwise be obtained. Physicists have concluded that the detected gravitational waves were produced during the final fraction of a second of the merger of two black holes to produce a single, more massive spinning black hole. This collision of two black holes had been predicted but never observed.

EGO sent out common press release

INFN, CNRS, Nikhef sent out PR with first common part + national angle



IMPACT: Social media

- Aggregate impressions on all tweets using #gravitationalwaves, #einsteinwasright, and #LIGO: ~70 million (source Caltech)
- The hashtag #ondesgravitationnelles got 10 million impressions over 24 hrs

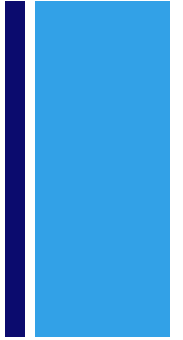
IMPACT: Streaming

- Cascina Press conference: 64.000 unique viewers (source Cern)
- Italian media that retransmitted the webcast: ANSA 20.000 viewers, IL FATTO QUOTIDIANO 9500 v., FOCUS.it 5.600, IL MESSAGGERO 3.000
- Webcast of the French press conference: 2.500 connections





IMPACT: Italy



- PRESS CUTS quoting VIRGO+INFN – 800
- TV+RADIO 80 quoting VIRGO+INFN
- Total people reached by INFN GW discovery post 167.000
- Feb 18th- Public Event in Rome “Einstein was right”- announced on the 12th went sold out in 2 days (700 seats)



Eleonora Cossi, INFN – Communications Office