



Astroparticle Physics European Consortium

May 2016

LIGO and Virgo receive Special Breakthrough Prize



More than 1000 scientists and engineers involved in the detection of gravitational waves [have been awarded a special Breakthrough Prize in Fundamental Physics](#). The award of \$3 million will be shared between LIGO founders Ronald WP Drever, Kip S Thorne, and Rainer Weiss, and 1005 others in the LIGO-Virgo Collaboration as well as seven additional scientists recognised for their contributions to the success of LIGO.

Edward Witten, the chair of the Selection Committee said: "This amazing achievement lets us observe for the first time some of the remarkable workings of Einstein's theory.

Theoretical ideas about black holes which were close to being science fiction when I was a student are now reality."

Yuri Milner, one of the founders of the Breakthrough Prize, described the group's achievement as "a perfect science story."

The prizes can be shared by any number of scientists. All of the authors of the paper announcing the direct detection of the GW150914 event are included. The seven scientists in addition are Luc Blanchet, CNRS; Thibault Damour, IHES; Lawrence Kidder, Cornell University; Frans Pretorius, Princeton University; Mark Scheel, Caltech; Saul A. Teukolsky, Cornell University; Rochus E. Vogt, Caltech.

APPEC chair Frank Linde said: "The first direct detection of gravitational waves was extremely exciting, and has sparked more and more interest in the field. I am very pleased that this international group of pioneers has been honoured with a Breakthrough Prize, and it is a good reminder of the cooperation and collaboration needed to make great strides in science. And an excellent example for the Nobel committee to follow ..."

Nominations for the annual Breakthrough awards, including the prize in fundamental physics, are [open until the end of May](#). LIGO has also been awarded the [2016 Gruber Cosmology Prize](#), which will be presented during the 21st International Conference on General Relativity and Gravitation in July.

image: The SXS (Simulating eXtreme Spacetimes) Project

Cherenkov Telescope Array elects Science Coordinators



The Cherenkov Telescope Array Consortium Board has elected Dr Stefano Vercellone (Istituto Nazionale di Astrofisica) as Science Coordinator and Prof. Stefan Funk (Friedrich-Alexander University Erlangen-Nürnberg) as the Deputy Science Coordinator. They will jointly coordinate the science activities in the CTA Consortium and its science work groups. Stefano and Stefan start work as of 17 May, taking over from CTA Co-Spokesperson Rene Ong who has been serving as the interim Science Coordinator. The election was announced at the CTA Consortium Meeting in Kashiwanoha, Japan - you can see tweets from the meeting on [#CTAKashiwa](#).

image: CTA Facebook

New detectors deployed at KM3NeT-It site

The KM3NeT team deployed two new detection units for ARCA in early May. During a five-day sea campaign, the units were brought from the port of Malta to the KM3NeT-It site and lowered gradually into the sea. The new detectors were connected to the deep sea network and unfurled, before operational tests began. The team also deployed a tower equipped with 84 large photomultiplier tubes. [The KM3NeT YouTube channel shows the deployment](#).

Meanwhile, the [Global Neutrino Network](#) reports that the first cluster of the GVD neutrino telescope in Lake Baikal has been upgraded and commissioned. A new electro-optical cable has also been laid in preparation for second cluster.

Launch of the Lomonosov satellite: observing cosmic-ray air showers with the TUS experiment

April 28, 2016, the Lomonosov satellite was successfully launched from the new cosmodrome "Vostochnyi". Aboard the spacecraft, operated by Moscow State University, are seven instruments for a range of measurements including cosmic ray, x-ray and gamma-ray detection.



The primary instrument is the TUS (Tracking Ultraviolet Setup) instrument, which employs a large Fresnel-type mirror-concentrator to collect UV radiation over a two-square metre area and feeding it to a camera consisting of 256 photomultiplier tubes placed in the focal plane of the concentrator.

TUS will allow the detection of UV radiation of the Auger showers from particles penetrating into the night atmosphere. TUS makes use of the same observing technique as the JEM-EUSO (Extreme Universe Space Observatory), which has been intensively discussed among European astroparticle physicists and might be realized in the coming years.

Further information can be found on <http://lomonosov.sinp.msu.ru/en/>

image: Drawing of the Lomonosov satellite. The TUS camera is inside the yellow box at the bottom.

Congratulations to Frank Linde

APPEC Chair Frank Linde [has been selected as a member of the Royal Netherlands Academy of Arts and Sciences](#). Members are selected by their peers from within and outside the academy. Frank joins around 500 other members, and will be officially installed at a ceremony in September. Congratulations Frank!

If you have a news item, event, or announcement for the APPEC Newsletter, [please contact the Communications and Outreach Coordinator, Ruth McAvinia](#), based at STFC.

EVENTS & MEETINGS:

[Third International Meeting for Large Neutrino Infrastructures](#)

Ibaraki, 30 May - 1 June

[Imaging 2016](#)

13-16 June, Stockholm

[12th Patras Workshop on Axions, WIMPs and WISPs](#)

Jeju Island, 20-24 June 2016.

[RICAP16 6th Roma International Conference on Astroparticle Physics](#)

Roma, 21-24 June 2016.

[Neutrino 2016](#)

London, 4-9 July 2016.

[16th International Baikal Summer School on HEP and Astrophysics](#)

Bol'shie Koty, 8-15 July 2016.

[ISAPP Summer Institute on 'Using particle physics to understand and image the Earth'](#)

L'Aquila, 11-21 July 2016.

[IDM2016 Identification of Dark Matter 2016](#)

Sheffield, 18-22 July 2016.

[Lake Baikal Three Messenger Conference](#)

Listvyanka, 29 August - 2 September 2016.

["SENSE - a roadmap for the ideal low light level sensor development" Kick-off Workshop](#)

Munich, 27 September 2016.

RECENTLY IN THE NEWS:

[Coincidence of a high-fluence blazar outburst with a PeV-energy neutrino event](#)

18 April, *Nature Physics*

[Project news](#)

22 April, *LSST Website*

[LIGO mourns the loss of Vladimir Braginsky](#)

25 April, *LIGO Website*

[Fermi Telescope helps link cosmic neutrino to blazar blast](#)

28 April, *NASA website*

[Improving searches for point sources below 100 TeV](#)

3 May, *Ice Cube website*

[DESY Femto magazine](#)

May, *DESY Website*

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