



«ETTORE MAJORANA» FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE

INTERNATIONAL SCHOOL OF COSMIC-RAY ASTROPHYSICS
«MAURICE M. SHAPIRO»

20th Course: "Particle, Gamma-ray and Neutrino Astrophysics in the 21st Century" 1-7 August 2016

PRESIDENT AND DIRECTOR OF THE CENTRE: PROFESSOR A. ZICHICHI

DIRECTORS OF THE COURSE: PROFESSORS J.P. WEFEL, T. STANEV, J. HÖRANDEL

Announcing the 20th Course

"Particle (Cosmic-ray), Gamma-ray and Neutrino Astrophysics are the three disciplines bringing an understanding of the High Energy Universe. Particles provide information on sources, acceleration and propagation including stellar and supernova shocks and possibly the decay of dark matter and the influence of dark energy. Gamma-rays have given information on High Energy processes within our galaxy and those occurring in distant galaxies such as hypernova. Neutrinos have the potential to point backwards to sources perhaps unseeable by other observables. All these studies provided input to theoretical models and are guiding experiments at accelerators. Slowly an understanding of the High Energy universe is being built from the fruits of these investigations. The School will cover the background, the latest results, their implications and address future prospects and expectations.

For young experimentalists and theoreticians it is, often, difficult to build an overview and perspective of the new high-energy astrophysics and how this has affected our understanding of the cosmos and generated new questions yet to be resolved. This course is designed to provide an overview from both lectures and from discussions with experts in the field who have been chosen, in the ISCR tradition, not only for their scientific work but also for their communication skills. It will also provide a perspective of what is expected from observatories/instruments in the future. Participants will have the opportunity to meet, informally, the researchers at the forefront of the fields, to ask about what excites/motivates them and where they believe the field is going. The lunch, dinner, and Marsala room discussions provide a unique view of the experts' view the field, and many anecdotes that never enter scientific papers, but which influenced the scientists and their careers. Many of the leading researchers in High Energy Astrophysics have attended the School.

Topics include: the highest energy particles and neutrinos, balloon, satellite and ground based measurements of cosmic rays and gamma rays, neutrino underwater and under-ice observatories, acceleration and propagation of high-energy radiation through the Universe, and the new space- or ground-based experiments of the near future.

More information is available on the web page <http://laspace.lsu.edu/ISCR>.

Secretariat of the Centre:

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Secretariat of the School:

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Financial Matters and Logistics:

The local expense fee of 700 Euros, payable in advance or upon arrival, covers lodging, meals, transportation between the Palermo airport and Erice (provided by the Centre) and all course activities. Participants dine at their choice of a number of Erice restaurants. (Beverages, including water with meals are not included and must be paid for separately.)

Participants needing financial assistance should apply as soon as possible. Partial assistance with local expenses will be offered mainly (but not exclusively) to (a) students from overseas, i.e., those requiring trans-Atlantic or trans-Pacific travel, (b) students from former East-bloc countries, and (c) students who demonstrate real financial need. Requests for financial assistance should accompany the application. There are no travel funds (e.g. airfare) available.

Qualified applicants who can defray all of their own expenses are usually admitted.

Application / Registration:

Applications from graduate students and post-docs should include a brief CV and a statement that travel funds are available. For students, a short note of endorsement by a senior scientist should be provided. There are no registration costs. Anyone interested in attending should apply as soon as possible since space is limited due to constraints at the Ettore Majorana Centre, and late applicants may have to be turned away.

Senior Participants are encouraged to attend and should contact one of the directors.

Applications should be submitted to the website <http://agenda.astro.ru.nl/event/6/> which is an Indicio page established for this course. You will need to be prepared to upload your CV/resume, and note of endorsement as PDF files. Response will be via e-mail, with the first selection of attendees in early 2016. For questions not covered on the websites, please contact one of the directors.

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