



«ETTORE MAJORANA» FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE
TO PAY A PERMANENT TRIBUTE TO ARCHIMEDES AND GALILEO GALILEI, FOUNDERS OF MODERN SCIENCE
AND TO ENRICO FERMI, THE «ITALIAN NAVIGATOR», FATHER OF THE WEAK FORCES



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

22nd Course: *FROM COSMIC RAYS TO GRAVITATIONAL WAVES: NOW AND TO COME*

ERICE-SICILY: 30 JULY – 7 AUGUST 2022

Sponsored by the: • Italian Ministry of Education, University and Scientific Research • Sicilian Regional Government

PROGRAMME AND LECTURERS

Cosmic Gamma rays; Results from HAWC and other experiments plus astrophysical implications

• J. GOODMAN, University of Maryland, MD, US

Neutrinos from the Cosmos: Observations and astrophysical interpretation

• F. HALZEN, University of Madison, WI, US

Cosmic Rays below and above the spectral “knee” region Radio detection of UHE cosmic ray showers

• J. HÖRANDEL, Radboud University, Nijmegen, NL

Cosmic particles at the highest energies from Auger and TA and implications for origin of particles

• A. CASTELLINA, University of Torino and INAF, Torino, IT

The GRAPES cosmic ray observatory and new results on cosmic rays above the “knee”

• S. GUPTA, Tata Research Institute, Mumbai, IN

Cosmological neutrinos, atmospheric backgrounds, transport in galactic and extra-galactic space and oscillations

• T. STANEV, University of Delaware, DE, US

Cosmic ray electrons as astrophysical probes; Results from the CALET observatory on the ISS

• S. TORII, Waseda University, Tokyo, JP

Anisotropy measurements of cosmic rays, recent results and interpretations

• M. AHLERS, University of Copenhagen, DK

Gravitational Wave Observations and the neutron star merger event

• P. SCHMIDT, University of Birmingham, UK

Atmospheric Cherenkov Telescopes for VHE Gamma-ray Astronomy: new results and future plans

• C. STEGMANN, DESY, Zeuthen, DE

Retrospective on the ISCRA – 44years

• A. SMITH, Chorey, Lancashire, UK

PURPOSE OF THE COURSE

21st century Astroparticle Physics has seen many exciting discoveries that are constraining and guiding theoretical interpretations. How did these discoveries come about, how do they fit together into new understanding of our high energy universe, and what are the prospects for the future? These are the questions to be addressed in this 22nd course, through experts in the subfields reviewing the science and the progress, looking at today's developments, and assessing likely directions for tomorrow's research. Through lectures and informal discussions with the experts, young researchers will develop an understanding of how the difference pieces fit into the emerging picture of the high energy cosmos. New ideas often emerge as well as new, potentially important, contacts with likeminded scholars.

APPLICATIONS

Applications should be submitted via the website <http://agenda.astro.ru.nl/event/12/>, 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 2022. For questions not covered on the websites, please contact one of the directors.

Professor Jörg Hörandel – Jorg.Horandel@ru.nl
Professor Todor Stanev – stanev@bartol.udel.edu
Professor John Wefel – JWefel@Lsu.edu

• PLEASE NOTE

Participants must arrive in Erice no later than 12 a.m. on 30th July 2022.

POETIC TOUCH

According to legend, Erice, son of Venus and Neptune, founded a small town on top of a mountain (750 metres above sea level) more than three thousand years ago. The founder of modern history — i.e. the recording of events in a methodic and chronological sequence as they really happened without reference to mythical causes — the great Thucydides (~500 B.C.), writing about events connected with the conquest of Troy (1183 B.C.) said: «After the fall of Troy some Trojans on their escape from the Achaei arrived in Sicily by boat and as they settled near the border with the Sicilians all together they were named Elymi: their towns were Segesta and Erice.»

This inspired Virgil to describe the arrival of the Trojan royal family in Erice and the burial of Anchises, by his son Aeneas, on the coast below Erice. Homer (~1000 B.C.), Theocritus (~300 B.C.), Polybius (~200 B.C.), Virgil (~50 B.C.), Horace (~20 B.C.), and others have celebrated this magnificent spot in Sicily in their poems. During seven centuries (XIII-XIX) the town of Erice was under the leadership of a local oligarchy, whose wisdom assured a long period of cultural development and economic prosperity which in turn gave rise to the many churches, monasteries and private palaces which you see today.

In Erice you can admire the Castle of Venus, the Cyclopean Walls (~800 B.C.) and the Gothic Cathedral (~1300 A.D.). Erice is at present a mixture of ancient and medieval architecture. Other masterpieces of ancient civilization are to be found in the neighbourhood: at Motya (Phoenician), Segesta (Elymian), and Selinunte (Greek). On the Aegadian Islands — theatre of the decisive naval battle of the first Punic War (264-241 B.C.) — suggestive neolithic and paleolithic vestiges are still visible: the grottoes of Favignana, the carvings and murals of Levanzo.

Splendid beaches are to be found at San Vito Lo Capo, Scopello, and Cornino, and a wild and rocky coast around Monte Cofano: all at less than one hour's drive from Erice.

More information about the «Ettore Majorana» Foundation and Centre for Scientific Culture can be found on the WWW at the following address:
<http://www.csem.infn.it>