

Observing the X- and Gamma-Ray Sky

Astrophysical Spring School, Cargèse/Corsica April 2006

Our understanding and knowledge of the sky at high energies has improved in many ways over the past 10 years, thanks to studies performed with *Chandra*, *XMM-Newton*, *RXTE*, *BeppoSAX*, *INTEGRAL*, *HESS*, *Swift* and *Suzaku*. This school (April 3-14, 2006), dedicated to PhD students and young researchers, will clarify our actual knowledge of the X-ray sky and give the opportunity to learn about the observatories and tools which are available. The school topics will cover most of the physics relevant for X-ray astronomy, from Galactic to extragalactic objects, through their radiation processes, their temporal behaviour, and our actual understanding of these objects.

1 Programme

The lecturers selected for the school are leading scientists in their field. Below you find the list of topics, the confirmed lecturers, and the duration of the contributing presentations.

History of high energy astronomy (J. Paul; 1h30)

Fundamental Physics

- Introduction to MHD (M. Tagger; 1h30)
- Accretion (A. King; 3h)
- Particle Acceleration (M. Baring; 3h)
- Thermal and non-thermal radiation processes (M. Longair; 3h)

X-ray and Gamma-ray instruments and analysis techniques

- X-ray and gamma-ray instrumentation (P. von Ballmoos; 1h30)
- Ground based gamma-ray instrumentation (G. Hermann; 1h30)
- How to build/develop an entire mission? (J. Paul; 45 min)
- First results from *Suzaku* (K. Mitsuda; 45 min)

Astrophysical Objects

- Active Galactic Nuclei (A. Fabian; 3h)
- Clusters of Galaxies (M. Arnaud; 3h)
- Galactic X-ray binaries: Black holes, neutron stars and CVs (T. Belloni; 3h)
- Gamma-ray bursts (F. Daigne; 3h)
- Relativistic jets (S. Corbel; 3h)

- Sgr A*: The black hole at the centre of our Galaxy (A. Eckart; 3h)
- Pulsars, anomalous X-ray pulsars and soft gamma-ray repeaters (W. Hermsen; 3h)
- Source populations in other galaxies: ULXs, IMBH and XRBs (G. Fabbiano; 3h)
- Supernova remnants: Nucleosynthesis, acceleration (J. Vink; 3h)
- Diffuse emission (J. Knödlseeder; 1h30)
- General relativity in compact objects (L. Stella; 1h30)
- Pulsar wind nebulae (I. Grenier; 1h30)
- Stellar coronae (M. Güdel; 1h30)

2 Location of the School

The school will take place at the Institut d'Études Scientifiques de Cargèse on the western coast of the french island of Corsica April 3-14, 2006. You can reach Corsica by ferry from Italy and France, or by air fly to Ajaccio. The participants will be accomodated in the village, in flats (from studio to 4 rooms flats) where they will share kitchen and bathroom. On school days, lunch is included and served at the institute. Outside school days, lunch is at the care of participants. Breakfast and dinner is at the care of participants and not included. No transportation is necessary between the village and the institute, which is only about 15 minutes by foot.

3 Registration and more information

The fee for the school is **600 Euros, including accomodation (11 nights), transportation from and to the Ajaccio airport, lunch (10 school days), a banquet diner, and a sight-seeing tour**. Registration deadline was January 15, 2006. For more information go to our webpage:

<http://universe.gsfc.nasa.gov/Cargese2006>

4 Contact

To contact the local organising committee¹ send e-mail to **cargese@cea.fr**

The scientific organising committee consists of: V. Beckmann (NASA/GSFC), T. Belloni (OAB Merate), G. F. Bignami (CESR), S. Corbel (CEA/Saclay), T. Courvoisier (ISDC), A. Decourchelle (CEA/Saclay), K. Ebisawa (NASA/GSFC), A. Fabian (IoA Cambridge), N. Gehrels (NASA/GSFC), G. Ghisellini (OAB Merate), I. Grenier (Universite Paris 7), J. Greiner (MPE), L. Maraschi (OAB Milano), A. Parmar (ESA/ESTEC), J. Paul (CEA/Saclay), P. O. Petrucci (Grenoble), R. A. Remillard (MIT), J. Rodriguez (CEA/Saclay), R. E. Rothschild (UCSD), and M. Tagger (CEA/Saclay).

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