

ICRANet Scientific Committee  
Fourth Meeting  
December 14<sup>th</sup> -15<sup>th</sup>, 2009

The meeting starts at 9:00 am of the 14th of December 2009 in the ICRANet Center in Pescara. The following people are present:

Felix Aharonian (Representative of Armenia)  
Carlo Luciano Bianco (Representative of ICRA)  
João Braga (Representative of Brazil)  
Riccardo Giacconi (Representative of Italy, Chairman)  
Hagen Kleinert (Representative of the Vatican) with the proxy of William Stoeger  
John Mester (Representative of Stanford University, Co-Chairman)  
Remo Ruffini (Director of ICRANet)  
Gregory Vereshchagin (Representative of University of Arizona, Tucson) with proxy of David Arnett

Also in attendance:

Aniello Francesco Izzo (Expert of ICRANet)  
Federica Di Berardino (Head of ICRANet Secretariat)

Since the first three Years of Presidency of Prof. Riccardo Giacconi are over, the Director invites the Committee to proceed to the election of the President, as from Art. 10 of the Statute.

The Committee unanimously proposes the renewal of the position of the President to Prof. Giacconi, who accepts under the condition that Prof. John Mester continues to assume the position of Co-Chairman. Prof. Mester accepts and both positions are confirmed unanimously by the Committee.

The Director presents the three volumes of his report to the Committee.

At 10:00 am a public session starts with the signature of the agreement between ICRANet, GARR, the University "G. D'Annunzio" (Chieti-Pescara) and the Municipality of Pescara, which consents the exchange of the scientific data worldwide, through high-speed telematic connections;

The public presentation of the report of the Director starts at 11 am. The Director specifically illustrates:

- the status of the ICRANet Members and the ongoing discussion at the Italian Parliament on the Seat Agreement of the Pescara Center;
- the status of the Staff, visiting scientists and graduate students at the Pescara Center;
- the expansion of the premises in the Seat of Pescara, which has become fully operative, after the refurbishing works;
- the Agreement with the Municipality of Nice on the free allotment of Villa Ratti to ICRANet for thirty years, the financial support granted and received by the Conseil Général des Alpes Maritimes and the progress of the refurbishing works at the Seat of Villa Ratti in Nice;
- the large number of Students and the growth of the International Relativistic Astrophysics PhD Program, promoted by ICRANet with the academic support of the University of Rome "Sapienza", the University of Ferrara, the University of Nice Sophia-Antipolis, the ETH of Zurich, the Freie Universitaet of Berlin, the University of Savoy, the Institut des Hautes Etudes

Scientifiques, the Observatoire de la Côte d'Azur and the recently three adjoint Institutes: the Tartu Observatory, the Albert Einstein Institute in Potsdam and the University of Stockholm;

- that this first European PhD Program in Relativistic Astrophysics has grown and obtained the official recognition of the Erasmus Mundus program of the European Community. In this new extended activity it has been involved also the Indian Center for Space Physics (India) and the Shanghai Astronomical Observatory (China);
- the new and pre-existent Agreements with the BSU (Belarusian State University) in Minsk, the ENEA (Italian National Agency for New Technologies, Energy and Sustainable Economic Development), the ICTP (Abdus Salam International Center for Theoretical Physics), the INFN (National Institute of Nuclear Physics), the NAS RA (National Academy of Science of the Republic of Armenia), and also the Agreement of joint research and teaching activities with the University of Nice-Sophia Antipolis, the one with the University of Rome "Sapienza", including the new premises of ICRANet there for the research activities, and the Agreement with the State University of Rio de Janeiro (Universidade do Estado do Rio de Janeiro, UERJ);
- as celebration of the International Year of Astronomy 2009, promoted by the United Nations, ICRANet has organized a particular intense program of meetings, as follows:

- Zeldovich 95th Anniversary Meeting, April 20-23, 2009, Minsk, Belarus.
- Sobral Meeting, May 26-29, 2009, Fortaleza (Ceará), Brazil.
- XII Marcel Grossmann Meeting, July 12-18, 2009, Paris, France.
- 1st Galileo – Xu Guangqi Meeting, October 26-30, 2009, Shanghai, China.
- 11th Italian-Korean Symposium, November 2-4, 2009, Seoul, South Korea.
- 5th Australasian Conference, December 16-18, 2009, Christchurch, New Zealand.

In addition, in Pescara there were held:

- 6th Italian-Sino Workshop, June 29-July 1, 2009, Pescara, Italy.
- 2nd Italian-Pakistani Workshop, July 8-10, 2009, Pescara, Italy.

The scientific activities of ICRANet have been presented on selected topics

Prof. V. Belinski *Solitons in Einstein Maxwell Theory*  
 Prof. D. Bini *Quevedo Solution*  
 Dr. C. Cherubini *Astrophysics and Biomedicine*  
 Prof. G. Vereshchagin *Theoretical Astroparticle Physics*  
 Prof. C. L. Bianco *Canonical GRBs*  
 Prof. L. Amati *The Amati relation*  
 Dr. M.G. Bernardini *GRB Injection*  
 Dr. G. De Barros *GRB Dynamics*  
 Prof. M. Della Valle *GRBs at  $z \approx 8$  and GRBs and Supernovae*  
 Dr. B. Patricelli  *$10^{54}$  erg GRBs*  
 Dr. L. Caito *Disguised short GRBs*  
 Prof. F. Aharonian *UHE Astrophysical sources*  
 Prof. J. Einasto *Large Scale Structure of the Universe*

Dr. J. Rueda *A Novel Approach to Neutron Stars*  
Prof. G. Montani *Unified Theories*  
Prof. S.S. Xue *Electron and Positron Plasma*

The Director recalls:

- That the contribution of the Italian Government has been kept constant since the beginning of the ICRANet activities started in 2005;
- That the Board, following the Art.6 and Art.13 (item v) of the Statute, has reiterated in the Board Meetings on November 27<sup>th</sup>-28<sup>th</sup> 2007 and November 19<sup>th</sup>-20<sup>th</sup> 2008 a request for the increase of funding for the Italian contributions;
- The many contributions obtained in kind by the Municipalities of Pescara, Nice and Rio de Janeiro;
- The increase of international activities;

He announces the request of an increase of funding of 1 Million Euros from the year 2010 and following to be presented at the forthcoming meeting of the Board, in order to keep the leadership and guidance of Italy in the ICRANet activities.

The Committee:

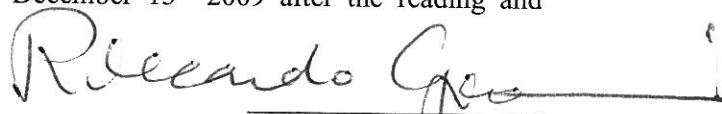
- recognizes the ample expansion of topics of Scientific Research at the highest international levels. Particularly important are the developments in the traditional field of research, such as the Physics and Astrophysics of Neutron Stars and Black Holes, as well as the mathematical foundations of the Solutions of Einstein-Maxwell Equations.
- records a new promising opening of scientific interests in the field of high redshift cosmology and the large scale structure of the Universe. Equally important is the progress toward field theories in extreme relativistic conditions made possible by the confrontation with data from X and Gamma ray satellites and Earth-based observatories in all wavelengths from the optical to the UHE gamma rays;
- underlines the vast activities in the organization of International meetings: especially remarkable has been the 12<sup>th</sup> Marcel Grossmann Meeting at UNESCO in July 2009, with the participation of more than 1000 scientists from 72 Nations. Also important is the institution and fostering of multilateral meetings such as the Italian-Korean Symposium in Relativistic Astrophysics in Seoul, South Korea, and the new Galileo-Xu Guangqi Meeting in Shanghai, China, as well as all the other activities related to the International Year of Astronomy 2009, sponsored by the United Nations;
- recognizes the strong commitment of teaching at graduate-student level, promoted by ICRANet in establishing the IRAP PhD in connection with some of the leading Astrophysical and Physical research Institutions of Europe, directly related to the activities encouraged by ICRANet in Brazil, China and India. Particularly significant are the presence of AEI – Albert Einstein Institute – Potsdam (Germany), Berlin Free University (Germany), CBPF – Brazilian Centre for Physics Research (Brazil), ETH – Swiss Federal Institute of Technology of Zurich (Swiss), Ferrara University (Italy), IHES – Institut des Hautes Études Scientifiques (France), Indian Centre for Space Physics (India), Nice University Sophia Antipolis (France), Observatory of the Côte d'Azur (France), “Sapienza” University of Rome (Italy), Savoie University

(France), Shanghai Astronomical Observatory (China), Stockholm University (Sweden), Tartu Observatory (Estonia). It is very important that such a PhD program is the only one in Physics and Astrophysics to receive the Label of ERASMUS MUNDUS of the European Community.

- stresses the strategic relevance of the signing of the Agreement between ICRANet, GARR, University of Pescara-Chieti "G. D'Annunzio" and Municipality of Pescara and strongly encourages establishing the link to all the astronomical data archives.
- witnesses the widening of scientific interest provided by the geographical expansion of the ICRANet activities. It welcomes the action by the Director to obtain funding and local premises for the seats by direct support of the local Authorities, which adds a substantial increase to the assets of ICRANet. Although all these foreign activities are self-funded, it is essential that the Italian Government supports the Italian activities in the ICRANet Center in Pescara to keep pace with the international partners.
- agrees under the above-mentioned premises the expansion of the Faculty, visitors and research Members is mandatory by the achievement of these ambitious scientific goals and it also advises the Director to open new appointments.
- is pleased of the actions of the Director to get the extraterritorial status in the Pescara Center and recommends that similar actions will be made in order to obtain the same status in the territories hosting the other seats of ICRANet.
- finally considers justified and of the highest priority the request by the Director for an increase of funds to be presented to the forthcoming Board Meeting, in view of the last year very successful scientific, teaching and international coordination of research activities of ICRANet and of the further expansion.
- asks the Director to express the profound gratitude to the Italian Government for the creation of this internationally recognized scientific Institution operating in one of the most advanced field of research and also gratitude for granting the extraterritorial Status to the Seat in Pescara.

In conclusion, the Scientific Committee recalls with gratitude that the Director has been the cofounder of ICRA and ICRANet and both institutions are bringing to the international attention the fundamental role of Einstein Theories in all fields of Astrophysics and creating the new research field of Relativistic Astrophysics. In the last five years ICRANet under his guidance has most successfully achieved its core program with ample international recognitions. ICRANet is extending the relativistic treatments to all major fields of current astrophysical interest, with an outstanding geographical extension of its teaching and research activities. We are witnessing a great interest expressed by many countries to join ICRANet. The Committee strongly indicates the necessity to foster the planned scientific activities of the Director by guaranteeing the adequate financial, political and diplomatic supports.

The meeting ends at 2:00 pm on the December 15<sup>th</sup> 2009 after the reading and unanimous approval of this report.



Prof. Riccardo Giacconi  
Chairman of the ICRANet Scientific Committee