



Università degli Studi di Padova



Dipartimento di Fisica



Istituto Nazionale  
di Fisica Nucleare

Istituto Veneto  
di Scienze Lettere  
ed Arti

L'iniziativa ha avuto il patrocinio di:

Accademia Nazionale dei Lincei  
Massachusetts Institute of Technology  
Istituto Nazionale di Astrofisica  
Università di Firenze

#### Sedi del Convegno

Archivio Antico – Palazzo del Bo, Via 8 Febbraio, 2 – Padova  
Istituto Veneto di Scienze Lettere ed Arti – Palazzo Franchetti,  
Campo S. Stefano, 2847 – Venezia

#### Segreteria Organizzativa

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**Padova - Venezia**  
**September 16 – 17, 2005**

## The Scientific Legacy of Bruno Rossi



A scientific colloquium  
in honour of Bruno Rossi  
on the 100<sup>th</sup> anniversary  
of his birth  
(1905 – 2005)

## Bruno Benedetto Rossi

(Venice, 1905 – Cambridge, Mass, 1993)

Bruno Rossi is one of the great physicists who in the last century renewed the modern science.

He studied at the University of Padua and received his doctorate in physics at the University of Bologna in 1927. He started his academic career at the University of Florence and held the chair in physics in Padua from 1932 to 1938, when the Fascist regime dismissed him, as a result of its notorious racial laws.

Bruno Rossi then spent short periods in Copenhagen, Manchester, Chicago and at Cornell University. From 1943 to 1946 he was at the Los Alamos Laboratory in New Mexico, where the atomic bomb was developed.

He went to the Massachusetts Institute of Technology in 1946 as a professor of physics, where he was named Institute Professor, a rank reserved for scholars of special distinction. After his retirement from MIT he was offered a chair as a professor in physics by the Italian Government and he chose to teach at the University of Palermo, where he remained from 1974 to 1980.

Dr. Rossi's career paralleled the evolution of cosmic-ray physics. His investigations of cosmic rays and their interactions with matter laid the foundation for high-energy particle physics. He proved the corpuscular nature of this radiation and its interaction with the Earth's magnetic field. He also discovered that individual cosmic rays, colliding with atoms, often generate large numbers of secondary particles, known as showers.

His interest in this bombardment from space led him into space research. He and his colleagues built a detector with which the Explorer X satellite in 1961 discovered the magnetopause. He also initiated the exploratory search for cosmic X-rays that in 1963 resulted in the discovery of the strong Scorpio X-ray source. The discovery marked the beginning of X-ray astronomy, which soon became a principal tool of astrophysics research.

He devised several instrumental techniques, starting from a fundamental electronic device for experimental high-energy nuclear physics and a basic element of modern computers.

As a teacher, he inspired leaders in higher learning and industry, and he formed a generation of talented researchers in physics and astrophysics.

The University of Padua in honouring the hundredth anniversary of his birth, renews its deep gratitude for his activity there and his great contributions to modern science.

## September 16

Archivio Antico – Palazzo del Bo

*Chair: Antonio Bassetto (Università di Padova)*

### **9.30: Welcome Address**

**10.00: George W. Clark (M.I.T.)**

#### **“Bruno Rossi: the Man and the Scientist”**

**11.00: Alberto Bonetti (Università di Firenze)**

#### **“Bruno Rossi’s Legacy”**

**12.00: Livio Scarsi (Università di Palermo)**

#### **“Fun in Cosmic Rays with Bruno”**

### **12.30: Lunch**

*Chair: Gianni Zumerle (Università di Padova)*

**15.30: Alan A. Watson (University of Leeds)**

#### **“Studying Cosmic Rays with Extensive Air Showers”**

### **16.30: Coffee break**

**17.00: Claude R. Canizares (M.I.T.)**

#### **“X-Ray Astronomy”**

## September 17

Istituto Veneto di Scienze Lettere ed Arti

*Chair: Massimilla Baldo Ceolin (Università di Padova)*

**11.00: Roberto Petronzio (Presidente I.N.F.N.)**

#### **“The Impact of Bruno Rossi on the Italian Physics after the War and his Legacy”**

**12.00: Bruno Coppi (M.I.T.)**

#### **“High Energy Plasma in the Universe”**

### **13.00: Lunch**

*Chair: Alessandro Pascolini (Università di Padova)*

**15.30: Paolo De Bernardis (Univ. di Roma “La Sapienza”)**

#### **“Experimental Cosmology”**

**16.30: Roman W. Jackiw (M.I.T.)**

#### **“The M.I.T. – Italy Connection”**

**17.30: Antonio Bassetto (Università di Padova)**

#### **Concluding Remarks**