

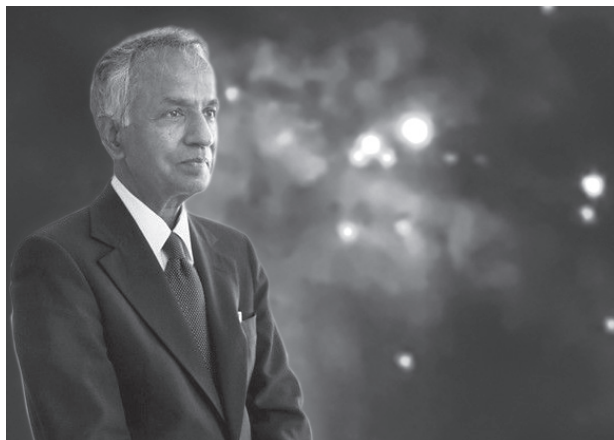
# **FLUID FLOWS TO BLACK HOLES**



**A Tribute to S. Chandrasekhar  
on His Birth Centenary**

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## A Tribute to S. Chandrasekhar on His Birth Centenary

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# Preface

Professor Subrahmanyan Chandrasekhar was a legend well within his own lifetime, and continues to be so after his death on August 21, 1995. Thus it is not surprising that many institutions, in India, in the United States, and elsewhere chose to celebrate in various ways the 100th anniversary of his birth on October 19, 1910. One of these celebrations took place at the University of Chicago, where he joined the faculty in January 1937. He remained there for the rest of his life.

The Chandrasekhar Centennial Symposium at the University of Chicago was held from October 15–17, with the International Planning Committee being co-chaired by Professors Robert Wald and Kameshwar C. Wali. It included both scientific and personal reminiscences by students and colleagues who had known him quite well, and reports by other scholars on topics that he had pioneered. A special issue of the *Bulletin of the Astronomical Society of India (BASI)*, published in March 2011, comprised written versions of some of those talks and additional articles covering topics not represented at the conference by other distinguished astrophysicists. This book contains a dozen articles published in this special issue of BASI, as well as a biographical portrait, his role in 20th century science and several personal reminiscences based on articles published in *Physics Today*, and an account of Chandrasekhar and the legacy of Ramanujan, and Chandrasekhar's impact on Indian astronomy.

One of us (VT) was the PhD student of Chandrasekhar's student Professor Guido Munch, and was lucky to know him at a level that entitled one to address him as Chandra. It has been a privilege for both of us to edit the issue of BASI and this book as a tribute to Professor Chandrasekhar on his birth centenary. We would like to take this opportunity to thank Ms Sandra Rajiva from the Indian Institute of Astrophysics and Ms Lakshmi Narayanan from World Scientific Publishing for their help in editing the special issue of BASI and this book respectively to celebrate Professor Chandrasekhar's birth centenary.

**D. J. Saikia and Virginia Trimble**  
Editors

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# Chandrasekhar Centennial Symposium (October 15–17, 2010)

October 19, 2010 marked the 100th anniversary of the birth of Subrahmanyan Chandrasekhar. The symposium was an occasion for those who knew Chandra to commemorate his memory and work, and for those who did not know him to experience firsthand some of the impact he had on 20th century science. The Symposium began with a reception on the 15th evening followed by two full days of talks on October 16 and 17.

Coincidentally, October 15, 2010 was the 100th birthday of Lalitha Chandrasekhar. The opening reception was devoted to the celebration of her birthday. Knowing her fondness for Indian dance and vocal music, a local dance troupe (Natraj Dance Company) and musicians were invited to perform. Although she could not be present in person, her being in good spirits and health was the occasion of joy for many who knew her well. A scroll expressing best wishes for her birthday and the commemoration of Chandra's centennial from Martin Rees, President, the Council and Fellows of the Royal Society of London was presented and read for the occasion by Robert M. Wald. It was later presented in person to Lalitha.

## International Planning Committee

Abhay Ashtekar, Naresh Dadhich, Valeria Ferrari, John Friedman, Giuseppe Muscato, Jayant Narlikar, Roger Penrose, Saul Teukolsky, Robert Wald (co-chair) and Kameshwar C. Wali (co-chair).

Funding for the Symposium was provided by the National Science Foundation and by the Department of Astronomy and Astrophysics, the Enrico Fermi Institute, the Kavli Institute for Cosmological Physics, and the Department of Physics of the University of Chicago.

**Speakers at the Symposium**

**Freeman Dyson:** Chandra's Role in 20th Century Science

**Clifford Will:** The Unreasonable Effectiveness of the Post-Newtonian Approximation.

**Roger Penrose:** Mathematical Properties of Black Holes and Colliding Plane Waves

**Jayant V. Narlikar:** Chandra's Impact on Indian Astronomy

**John Friedaman:** Instabilities of Relativistic Stars

**Kip S. Thorne:** Black Holes

**Valeria Ferrari:** Gravitational Waves from Perturbed Stars

**Martin Rees:** Chandra's Scientific Legacy

**James M. Stone:** Magnetohydrodynamics in Astrophysical Contexts

**Priyamvada Natarajan:** The Formation and Growth of Super-Massive Black Holes

**Ganesan Srinivasan:** Chandra and the Legacy of Ramanujan

**Jeremiah P. Ostriker:** Galaxy Structure and Formation

**Rashid A. Sunyaev:** Scattering of Radiation in the Universe: From the CMB and Last Scattering Surface to Clusters of Galaxies and Quasars

**Gordon P. Garmire:** The Chandra X-ray Telescope



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