



Physical Research Laboratory, Ahmedabad

Colloquium 16-01

Speaker: Prof. Pankaj S. Joshi
Professor, Dept. of Astronomy and Astrophysics, TIFR, Mumbai

Title: "Can I see a Black Hole?"
--Life and Death of Massive Collapsing Stars in the Universe"

Time: Wednesday, 06 January 2016, 16.00 hrs.

Venue: K. R. Ramanathan Auditorium, PRL

Abstract

The year 2015 was the 100th year of Einstein's theory of gravity, or the General Theory of Relativity, which is one of the most important cornerstones of modern physics and cosmology. Black holes and space-time singularities are amongst the most important predictions of the General Theory of Relativity. We shall review these predictions of the Einstein theory and in particular the current efforts to obtain a direct confirmation of black holes. Specifically, general relativity predicts three kinds of space-time singularities: the Big Bang, which is the origin of the observed Universe, those hidden within a black hole, and the ones which are visible or naked singularities. The latter two types arise from the gravitational collapse of massive stars, and when visible they offer an opportunity to test the Quantum Theories of Gravity or the Unification of Physics, as we shall discuss.

The Speaker

Prof. Pankaj S. Joshi is a Senior Professor at the Tata Institute of Fundamental Research (TIFR), Mumbai. Prof. Joshi did his M. Sc. (1975) from Saurashtra University, Rajkot and Ph. D. (1979) from Bhavnagar University, Bhavnagar and has been at TIFR since 1983. His area of research is general relativity and cosmology and his extensive analysis of general relativistic gravitational collapse has been widely recognized as providing significant insights into the final fate of massive collapsing stars in the universe, formation of space-time singularities and cosmic censorship. Prof. Joshi has published several research papers as well as monographs and books on the subject. He is a fellow of the Indian National Science Academy, the National Academy of Sciences India and the Gujarat Science Academy. He has been a past President of the Indian Association of General Relativity and Gravitation and has won several awards for his research. Prof. Joshi has also written a large number of books and articles, including in Gujarati, for young students of science and the general public, and has given a large number of public lectures.

Tea at 15:30 hrs.

ALL ARE WELCOME

