



Solvay Colloquium

Professor Roger Blandford
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The Music of the Sphere

There has been remarkable progress in observational cosmology since the discovery of the cosmic microwave background in 1964 and culminating in the recently announced results from the Planck satellite.

Essentially all reliable evidence is consistent with a remarkably simple description of the expanding universe that follows the laws of basic physics insofar as we have deduced them in the laboratory but has to be supplemented by three ingredients that we are only beginning to understand:

- an epoch called “inflation” that occurred during the earliest moments of the universe
- “dark matter” which is five times as abundant as regular matter
- a universal “cosmological constant” which was proposed by Einstein in 1917.

Each of these ingredients represents a frontier in fundamental physics.

In this talk, I shall discuss some of the ways through which we have arrived at this description, emphasising the use of a “wave” description of the cosmos to complement the “direct” description that we get from our telescopes.

I shall also describe some new approaches that can be followed to use these observations to advance our astronomical description of the overall arrangement of the luminous galaxies, stars and gas that we see around us today.

Tuesday 28 April 2015 at 4.00 P.M.

COFFEE AND TEA WILL BE SERVED AT 3.45 P.M. IN FRONT OF THE SOLVAY ROOM

SOLVAY ROOM

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