

Editorial

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There are always a few among the scientists who are adventurous enough to take the road less travelled. Sir Fred Hoyle was one of the most creative astrophysicists of the last century. Many of his ideas struck gold, but many others have been controversial. He was also an excellent science communicator, and wrote books for general readers about the controversial topics in cosmology, evolution of life and others. As a result, he was often at the centre of heated debates.



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Hoyle made one of the most spectacular predictions in astrophysics when he argued for an excited state of carbon, which was not known then, because if it did not exist then stars would not be able to synthesize heavy elements. Since these heavy elements certainly exist, there must be this excited state at an energy of 7.6 million electron volts in the nucleus of carbon-12, he had claimed. Subsequent experiments by William Fowler established this excited state and Fowler was awarded the Nobel Prize in 1983, although Hoyle's bold prediction was not given due recognition.

Modern astrophysics is filled with such gems from Hoyle. Even when he ridiculed the concept of 'Big Bang' (he had coined the term in derision during a popular science broadcast), he worked out some of the basic results of nucleosynthesis for the now standard Big Bang model of the universe. As new and big telescopes try to fathom the era of primeval galaxies, Hoyle's ideas of how the first galaxies acquired angular momentum or how gas cooling is important for galaxy formation, remain all too important and topical.

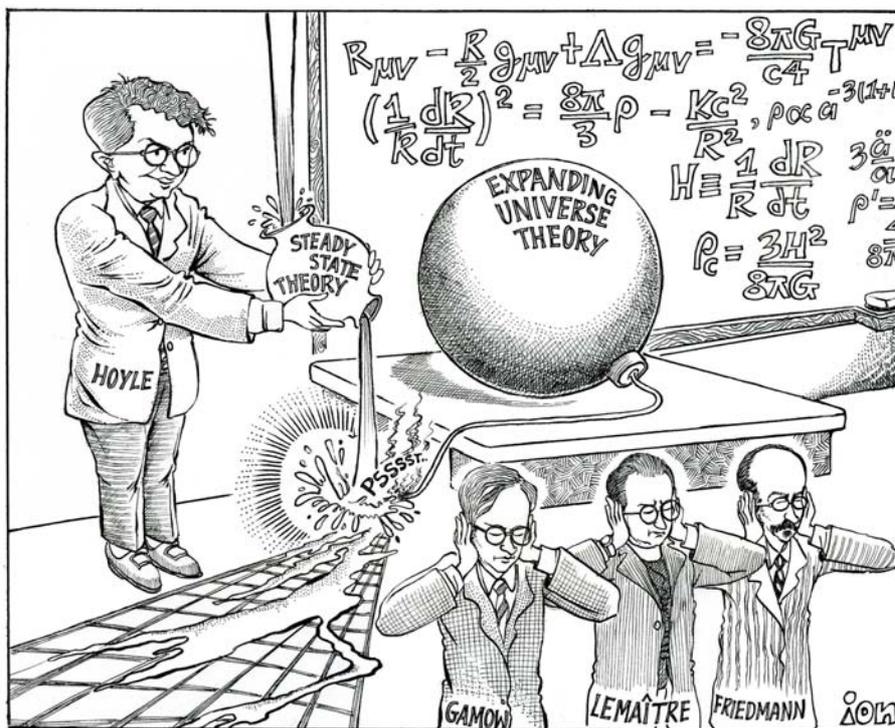
In this issue, Jayant V Narlikar describes many pioneering discoveries made by Hoyle, from stellar astrophysics to the frontiers

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of cosmology. Narlikar was one of Hoyle's prized students and perhaps it is not a coincidence that like his mentor Narlikar has been on the vanguard of communicating science to general readers, including writing science fiction.

Along with Hoyle, we also feature a few other articles related to astronomy, atomic and sub-atomic physics in this issue. S Ramasesha's article chronicles the evolution in our ideas of atoms, and another by Deshmukh and Libby explains the concept of symmetry principles in the physics of fundamental particles. V V Raman also reflects on the paradigm shift in science that came as a result of astronomical discoveries of Kepler and Galileo.



Relax gentlemen, you shall not hear a "BIG BANG"..

