

Cosmological Ideas in Science and Aad Guru Granth Sahib (The Sikh Scripture)

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Abstract: cosmology deals with the problem of the creation of the universe. It has been dealt with from time immemorial in all religious texts. Scientific evidence supports the big-bang model of cosmology. Cosmological ideas enunciated in aad guru granth sahib are most scientific and describe vividly the creation hypothesis.

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Cosmological Ideas in Science

Cosmology deals with the problem of the creation of the universe. It has played a decisive role in the conflict between science and religion. Various cosmological theories and models have been proposed in both science and religion. Newton's approach towards cosmology was metaphysical and he considered the creation of the universe as an act of God. In his system, space and time appear as absolutes and the earth occupies a unique position in the universe. More than a century later, Kant and Laplace put forward their views, together known as the Gas-Cloud hypothesis. It considers the creation of the universe out of gases and vapors such as hydrogen, methane, carbon dioxide, cyanogens and water. The planets and the sun were created out of the same nebular gas medium. A similar view has been expressed in Aad Guru Granth Sahib: "God created the air, from air came water and from water the world was created. God's spirit permeates all the beings."²

Evidence collected by astronomers during the last 50 years confirms the hypothesis of the expanding universe, and is the basis of Big-Bang cosmology. Its ambitious and detailed theory is that of George Gamow and collaborators. They suppose that the universe started from a very dense, hot mass of neutrons which decayed into protons and electrons. These combined to form complex nuclei. The temperature during the Big-Bang phase was 10 billion degrees Centigrade, and most of the elements were built up during the first 30 minutes of the expansion. Driving the universe backwards, we can arrive at a state of infinite density, with all the matter compressed into a mathematical point, a singularity. We will have to bring in God as creator of the universe to explain the singularity state where all the mathematical equations fail.

Alan Guth of MIT proposed the Inflation theory³ to explain the rapid expansion of the universe. According to this theory, the size of the universe doubles every 10^{-35} of a second, and the age of the universe is about 15 billion years. Quantum physics allows the universe to appear out of nothing, as a vacuum fluctuation. Chaotic inflation led to the sudden expansion of the universe out of a quantum fluctuation. The seed of the universe is considered to be a 'magnetic monopole' according to a new version of the inflation theory. The Hubble Telescope may provide useful data to clinch the issues in Big-Bang Cosmology.

The Cosmological Ideas in Aad Guru Granth Sahib (AGGS)

The cosmological ideas, as enunciated in AGGS, have been found to be most scientific and compatible with the modern cosmological theories of science. Guru Nanak challenges the Hindu worldview as archaic and based on dogma and mythology. In *Japuji*, Guru Nanak sums up his ideas about the creation of the universe, which he elaborates further in the most precise and scientific manner in the *Raga Maru Solhe* in AGGS. The creation hypothesis is summed up as follows by Guru Nanak: "God created the universe by uttering a word."⁴

Thus the problem of 'singularity' faced by the Big Bang model of the universe is solved by the Guru by bringing in God as the creator of the universe. Once this riddle is solved, the sequence of creation, its epoch and extent is described in AGGS in a most rational manner. Guru Nanak poses the next question in *Japuji*:

What was the time and the moment the day and the month, When the world was created?⁵ In the next stanza, Guru Nanak provides the answer: neither the Pundit can find this date by looking through the Purana texts, nor can the Qazi tell from the Koran, neither the Yogi nor any one else knows the day, week, season and month of creation. The creator who creates the World He alone knows the time.⁶ Guru Nanak does not want to formulate any hypothesis based on false assumptions and leaves this question open. The creation process started under the command of God, the creator of the universe. The Guru envisages the creation of the universe out of 'Sunya' which is devoid of matter but not of energy. Hence, a beautiful analogy with the quantum concept of creation out of nothing as a vacuum fluctuation is established in *Raga Maru Solhe*: "The creator was all alone, He created the air, water, earth and sky; even the sun and moon from this *Sunya*."⁷

This wonderful drama of creation is elucidated further by Guru Nanak in his mystic reverie. Surprisingly, there is a perfect correspondence between the epoch of the Big Bang and the creation out of *Sunya* phase as enunciated in *Maru Solhe*, the most beautiful hymn on Sikh cosmology:

For billions of years, there was nothing but utter darkness. There was neither day nor night, nor moon, nor sun, but the Lord alone sat in profound trance. Neither there was creation, nor air, nor water. There were no continents, nor underworlds, nor seven oceans nor rivers, or the flowing water. There was neither death, nor time. There was no Brahma, nor Vishnu or Shiva.

When He so willed, He created the world and supported the firmament without support. He created Brahma, Vishnu and Shiva and extended the love of mammon. He founded the continents, solar systems and underworlds, and from the Absolute self, He became manifest.⁸

Guru Arjan Dev describes in *Sukhmani* the myriad forms of creation:

There are millions and millions of galaxies and solar systems in the universe. The phenomenon of creation has occurred so many times. But the one Lord remains for ever and ever.

The riddle of creation of the universe will remain an enigma for cosmologists, and there is no final word yet in cosmology. About the

present theories and models, we may conclude with a quotation from *Benti Chaupai* in *Dasam Granth*, 10: "Everyone explains the creation process according to his intellect, But no one can tell, O Lord, How you first created the universe."¹⁰

Notes

1. Prof. H.S.Virk was formerly professor of Physics at the Guru Nanak Dev University, Amritsar.
2. *Aad Guru Granth Sahib* (AGGS) (Amritsar: SGPC), M.1, p. 19, 2001.
3. John Gribbin, *Watching the Universe* (Universities Press, Hyderabad, 1998) pp. 202-220.
4. AGGS, M1, p. 3.
5. AGGS, M1, p. 3.
6. AGGS, M1, p. 4.
7. AGGS, M1, p. 1037.
8. AGGS, M1, p. 1035.
9. AGGS, M5, p. 276.
10. *Dasam Granth* (Amritsar: Chatar Singh-Jiwan Singh), 1902, p. 1387.