



# Scientific Vision of Guru Nanak - the Universe and Stephan Hawking

Guru Nanak, critically examined the theories of creation of the universe prevalent in India before his advent,

## **Abstract**

*Cosmology deals with the problem of the creation of the universe. Almost all religions have dealt with the problem of creation of the universe from time immemorial in their sacred texts. Guru Nanak, the founder of the Sikh faith, critically examined the theories of creation of the universe prevalent in India before his advent, from pre-historic times to the end of 15th century. The seeds of modern cosmology, namely, the Big-Bang cosmology are explicitly visible in the sacred writings of Guru Nanak and his successors, compiled during 1604 in the form of Sri Guru Granth Sahib (SGGS), the Sikh holy book.*



**Fig. 1. Guru Nanak (1469-1539)**

During 5th Centenary of Guru Nanak, I presented my Paper "*Brahmand Di Rachna: Dharmic ate Vigyanic Pakh*" (Scientific and Religious Views on Creation of Universe) in Punjabi University, Patiala in 1969. Its English version was presented in a UGC seminar in Delhi Chaired by DR DS Kothari (former UGC Chairman) in 1974, who advised me to get my book "*Brahmand Di Rachna*" translated in Hindi for wider circulation. Veena Watni, a teacher in HMV Jalandhar, promised to do this work but failed. Recently, a modified version has been published under the title "*Sikh Dharam Ate Vigyan*" in 2017 [1-5].

How could Guru Nanak predict the creation of Universe 500 years before Scientists proposed the Big Bang Theory? is a million dollar question. Dr DS Chahal (Retired Director of Biotechnology, McGill University, Montreal) proposed in his book that Guru Nanak was a Natural Philosopher (Scientist) who proceeded European Scientists by 300 years. Many Scientists are writing their views after publication of my paper in 1969.

Guru Nanak was not a Scientist in the modern sense, as understood by our intellectuals.



**Fig. 2. Srinivas Ramanujan (1887-1920)**

I found the solution of 'My Predicament' in S. Ramanujan, the greatest Indian Mathematician, who wrote 3900 Formulae (Theorems) with answers but no solutions. His worth was recognized by Professor Thomas Hardy of Cambridge, who invited him to work on a Fellowship, despite all racial prejudices against this poor Indian young man, who had no university degree and formal training in Mathematics. He was the youngest Fellow of Royal Society. His research was interrupted due to first World War and he died at a very young age of 32 years after his return to India. How he wrote these complicated formulas, now being used to study Black Holes and String Theory? His reply: "My equations have no meaning unless it expresses a thought of God." He received the Solutions to his Theorems in his Visions revealed by the family Goddess *Mahalakshmi of Nammakal*.

Guru Nanak also claims assertively that the WORD (*Shabad* or *Bani*) is revealed to him by God (*Dhur Ki Bani*); hence his Visions about Universe reveal '*The Truth*' and are being confirmed by recent Scientific theories like Big Bang. Do our Universities in Punjab are up to the mark to create 'Awareness' about Guru Nanak's Scientific Vision?

**Evidence of Scientific Vision of Guru Nanak in SGGS:** Guru Nanak is emphatic and believes firmly that there is a CREATOR (U may call him God) of the Universe. Hence there is no

'Singularity' in Guru Nanak's vision. I quote some verses from SGGS to establish his viewpoint on Creation of the Universe [6, 7]:

*'God created the Universe by uttering a word.'*

ਕੀਤਾ ਪਸਾਉ ਏਕੋ ਕਵਾਉ ॥ ਤਿਸ ਤੇ ਹੋਏ ਲਖ ਦਰੀਆਉ ॥

*God created the air, from air came water and  
from water the world was created.*

*God spirit permeates all the beings.*

ਸਾਚੇ ਤੇ ਪਵਨਾ ਭਇਆ ਪਵਨੈ ਤੇ ਜਲੁ ਹੋਇ ॥

ਸਚੇ ਸੁਆਮੀ ਤੋਂ ਹਵਾ ਹੋਈ ਅਤੇ ਹਵਾ ਤੋਂ ਪਾਣੀ ਬਣਿਆ।

Surprisingly, there is a perfect correspondence between the epoch of 'Big-Bang' and the creation out of *Sunya* phase as enunciated by Guru Nanak in *Raaga Maru Solhe*, the most beautiful hymn on Sikh Cosmology [8]:

*'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."*

ਅਰਬਦ ਨਰਬਦ ਧੰਧੁਕਾਰਾ ॥

ਅਣਗਿਣਤ ਯੁੱਗਾਂ ਲਈ ਅਨੇਕ ਘੁੱਪ ਹੀ ਸੀ।

ਧਰਣਿ ਨ ਗਗਨਾ ਹੁਕਮੁ ਅਪਾਰਾ ॥

ਨਾ ਦਿਨੁ ਰੈਨਿ ਨ ਚੰਦੁ ਨ ਸੂਰਜੁ ਸੁੰਨ ਸਮਾਧਿ ਲਗਾਇਦਾ ॥੧॥

Guru Arjun Dev, the fifth Nanak and compiler of SGGS, describes in his well known composition, *Sukhmani (The Psalm of Peace and Happiness)*, the myriad forms of creation. The cyclic theory of creation is accepted as a norm in SGGS [9]:

*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 forever and ever."*

ਕਈ ਕੋਟਿ ਖਾਣੀ ਅਰੁ ਖੰਡ ॥  
ਅਨੇਕਾਂ ਕ੍ਰੋੜਾਂ ਹਨ ਉਤਪਤੀ ਦੇ ਸੋਮੇ ਅਤੇ ਮਹਾਂ ਦੀਪ।  
ਕਈ ਕੋਟਿ ਅਕਾਸ ਖ੍ਰਮੰਡ ॥  
ਕਈ ਕ੍ਰੋੜ ਹਨ ਅਸਮਾਨ ਅਤੇ ਸੂਰਜ-ਬੰਧਾਨ।  
ਕਈ ਕੋਟਿ ਹੋਏ ਅਵਤਾਰ ॥  
ਕਈ ਜੁਗਤਿ ਕੀਨੇ ਬਿਸਥਾਰ ॥  
ਕਈ ਬਾਰ ਪਸਰਿਓ ਪਾਸਾਰ ॥  
ਸਦਾ ਸਦਾ ਇਕੁ ਏਕੰਕਾਰ ॥

However, Guru Nanak does not enter into any mathematical rigmaroles to make an assessment or count of the celestial bodies comprising our Universe. After quoting the prevalent tradition or information available at that time, Guru Nanak records his own observations in SGGS in the form of his mystic reverie. He observes that the cosmos (universe) contains countless number of celestial bodies. The real number would be known only to the God, the creator of the Universe [10]:

*It cannot be possible to count (the celestial bodies in the universe)  
because the accounting person may reach the end  
of his life during counting, it will still be incomplete.  
He further says that the God is the Great,  
Who knows the account (of the celestial bodies in the universe).*

ਲੇਖਾ ਹੋਇ ਤ ਲਿਖੀਐ ਲੇਖੇ ਹੋਇ ਵਿਣਾਸੁ ॥  
ਨਾਨਕ ਵਡਾ ਆਖੀਐ ਆਪੇ ਜਾਣੈ ਆਪੁ ॥੨੨॥



Most of the Scientists, including Stephan Hawking, believe in creation out of 'Nothingness'. Guru Nanak does not want to formulate any hypothesis based on false assumptions and leaves this question open. The creation process is 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 quantum concept of creation out of nothing, as a vacuum fluctuation, is established in *Raga Maru Solhe* in SGGS [11]:

*'The creator was all alone,  
He created the air, water, earth and sky;...  
Even the sun and moon from this Sunya.'*

ਪਉਣੁ ਪਾਣੀ ਸੁੰਨ ਤੇ ਸਾਜੇ ॥  
ਸ੍ਰਿਸ਼ਟਿ ਉਪਾਇ ਕਾਇਆ ਗੜ ਰਾਜੇ ॥  
ਅਗਨਿ ਪਾਣੀ ਜੀਉ ਜੋਤਿ ਤੁਮਾਰੀ ਸੁੰਨ ਕਲਾ ਰਹਾਇਦਾ ॥੨॥  
ਸੁੰਨਹੁ ਬ੍ਰਹਮਾ ਬਿਸਨੁ ਮਹੇਸੁ ਉਪਾਏ ॥  
ਸੁੰਨ ਵਰਤੇ ਜੁਗ ਸਥਾਏ ॥  
ਇਸੁ ਪਦ ਵੀਚਾਰੇ ਸੋ ਜਨੁ ਪੂਰਾ ਤਿਸੁ ਮਿਲੀਐ ਭਰਮੁ ਚੁਕਾਇਦਾ ॥੩॥  
ਸੁੰਨਹੁ ਸਪਤ ਸਰੋਵਰ ਥਾਪੇ ॥  
ਜਿਨਿ ਸਾਜੇ ਵੀਚਾਰੇ ਆਪੇ ॥  
ਤਿਤੁ ਸਤ ਸਰਿ ਮਨੁਆ ਗੁਰਮੁਖਿ ਨਾਵੈ ਫਿਰਿ ਬਾਹੁੜਿ ਜੋਨਿ ਨ ਪਾਇਦਾ ॥੪॥  
ਸੁੰਨਹੁ ਚੰਦੁ ਸੂਰਜੁ ਗੈਣਾਰੇ ॥

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 the Benti Chaupai in Dasam Granth [12]:

*"Everyone explains the creation process according to his intellect,  
But no one can tell, O Lord,  
How you first created the universe"*

ਆਪੁ ਆਪੁਨੀ ਬੁਧਿ ਹੈ ਜੇਤੀ ॥  
ਬਰਨਤ ਭਿੰਨ ਭਿੰਨ ਤੁਹਿ ਤੇਤੀ ॥  
ਤੁਮਰਾ ਲਖਾ ਨ ਜਾਇ ਪਸਾਰਾ ॥  
ਕਿਹੁ ਬਿਧਿ ਸਜਾ ਪ੍ਰਥਮ ਸੰਸਾਰਾ ॥੩੯੩॥

**Albert Einstein and Stephan Hawking:** I always consider Einstein as the greatest Scientist of all times. Stephan Hawking tried to re-interpret his General Theory of Relativity. He was just 21 when diagnosed for a killer disease of ALS (*motor neuron failure*) and doctors gave him 2 years as lease of life. He survived 55 years in a state of paralysis due to his strong Will Power and predicted a new class of tiny black holes, yet to be verified experimentally.

Obituary writes ups are pouring in from celebrated Scientists from all over the globe. Hawking's children, Lucy, Robert and Tim said in a statement: "We are deeply saddened that our beloved father passed away today. He was a great scientist and an extraordinary man whose work and legacy will live on for many years".

His contemporary and renowned scientist from India, Dr Jayant Narlikar remembered Hawking from his college days when both were studying at Cambridge. "During our university days, I was told that Hawking had only two years to live and soon his physical deterioration started but he showed tremendous determination and willpower and did marvellous work in astrophysics," Narlikar said.

Stephan Hawking was an Atheist and a non-believer who relied on his Theoretical predictions without invoking any supernatural deity or creator God. He wrote there was nothing before Big Bang and Gravity created the Universe. His other predictions were: Time ends in a Black Hole; these are not dead bodies but emit radiation, called Hawking Radiation (yet to be detected). Most of his predictions are yet to be proved; hence he failed to get the Nobel Prize in Physics. His popular science books are rated The Best for intelligent layman. I hope Punjabi University, Patiala will undertake the translation of his books in Punjabi; I offer my services for this job.

Timothy Ferris, author of 'The Science of Liberty' writes: "For legendary astrophysicist Stephan Hawking, who redefined cosmology by proposing that black holes are mortal, the Nobel Prize for Physics remained elusive as his theory cannot be observed or verified. Even though his theory is now firmly accepted in theoretical physics, there was no way to verify if black holes are mortal." It will take billions of years to observe the explosion of Black Holes into gamma rays.



**Fig. 3. Stefan Hawking in TIFR, Mumbai with String Theorists (D. Gross & Ed Witten) during an International Conference on String Theory in 2001.**

## Bibliography

1. HS Virk, Cosmology: Religious & Scientific Aspects, Khoj Patrika, Punjabi University, Patiala, pp. 150-161, 1969.
2. HS Virk, Cosmology in Science & Religion, Proc. Summer School History of Science, INSA, New Delhi, 1974.
3. HS Virk, Cosmology in Science & Religion, Journal of Sikh Studies, Vol. 9(2), pp. 19-30, 1982.
4. HS Virk, Cosmological Ideas in Science & Aad Guru Granth Sahib, Omega: Ind. Journal of Science & Religion, Vol. 3(1), pp. 72-75, 2004.
5. HS Virk, Sikh Dharam Ate Vigyan (Sikh Religion and Science), Panj Pani Parkashan, D-12 Industrial Area, Phase I, Mohali.
6. SGGS, M1, p.19. (SGGS = Sri Guru Granth Sahib, published by SGPC, Golden Temple Press, Amritsar. This Holy Book of the Sikh Religion is treated as a Living Shabad Guru).
7. SGGS, M1, p.3.
8. SGGS, M1, p.1035.
9. SGGS, M5, p.276.



10. SGGS, M1, Jap 22, p. 5.
11. SGGS, M1, p.1037.
12. Guru Gobind Singh, Benati Chaupai, Dasam Granth, Published by Bhai Chattar Singh - Jeewan Singh, Amritsar, 1902, p.1387.