



Professor Jamal Nazrul Islam: The Scientist Wandering in Theoretical Science, Astronomy, and Cosmology

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OBITUARY

Jamal N Islam (24 February 1939 – 16 March 2013) was a Bangladeshi mathematical physicist and cosmologist. He was a professor at the University of Chittagong, served as a member of the advisory board at Shahjalal University of Science and Technology, and was a member of the syndicate at Chittagong University of Engineering and Technology until his death. He also served as the Research Center for Mathematical and Physical Sciences (RCMPS) director at the University of Chittagong. He was awarded Ekushey Padak in 2000 by the Government of Bangladesh.

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1 Family and Education

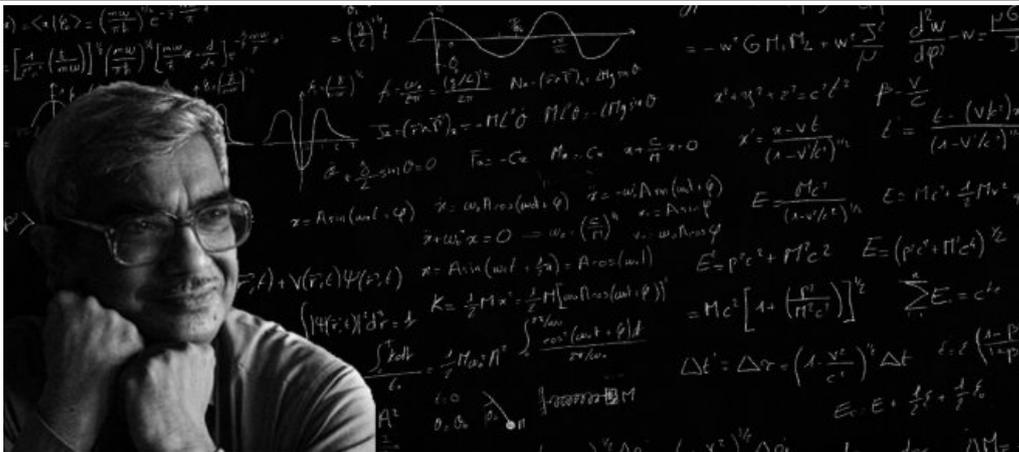
Jamal Nazrul Islam was born on 24 February 1939 in Jhenaidah, Bengal Province, British India, because of his father's posting there, but his root is in CTG. His ancestral home is at Jujkhola Narayanhat of Fatikchhari Upazila of Chittagong District, East Bengal. His father, Khan Bahadur Sirajul Islam, was a sub-judge in British India. His family contact with Nawab family in Dhaka along with the King (Badshah) of Jordan. Nevertheless, it was a very simple lifestyle. He has four brothers (Kamal Ziaul Islam, Tarek Moinul Islam, Helal Shomsher Islam and JNI) and four sisters. Mother Rahat Ara Begum culture an enthusiastic writer and could sing well. She translated the 'Daakghor' (Post Office) of Rabindranath Tagore to Urdu and praised them. Kazi Nazrul Islam used to visit their home in Calcutta. The name of Kazi Nazrul Islam inspired JN Islam's name. His mother died when he was only 10 in 1949. He used to miss his mother very much till his last breath.

Because of his father's job, Islam spent his early school years in Calcutta. His father was transferred to Calcutta when he was only one year old. Jamal Nazrul was first admitted to the Model School in Calcutta. From this school to the next children's school. He studied in this school till the fourth class. Later go back to model school again. After model school in Calcutta, he moved to Chittagong. Here he took the exam for admission to Chittagong Collegiate School. He was admitted directly to the

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sixth class with "Double Promotion" for his special achievement in this admission test. He studied at Chittagong Collegiate School and College until ninth grade. Then, he went to Lawrence College, Murree in West Pakistan, to pass the Senior Cambridge and Higher Senior Cambridge exams. He received a BSc degree from St. Xavier's College, affiliated with Calcutta University. In 1959, he got his Honors in Functional Mathematics and Theoretical Physics from Cambridge University. He completed his master's degree in 1960. As a student at Trinity College, he finished the Mathematical Tripos. Jamal N Islam obtained his Ph.D. in applied mathematics and theoretical physics from Trinity College, Cambridge, in 1968, followed by a DSc in 1982. The special case was that he finished his Ph.D. before the time limit, even before the academic period to submit the dissertation; hence he got special permission to join Post-Doc to avoid delay in completing his Ph.D.

Figure 1.1 Jamal Nazrul Islam(1939-2013).



He was then awarded a Doctor of Science (DSc) in 1982 by Cambridge University. He spoke about himself in an interview with Bishad Sangbad, a monthly mouthpiece of Bishad Bangla, a cultural organization in Chittagong. In 1957,

I graduated from Calcutta with honors and went to Trinity College, Cambridge University, to do Tripos in Mathematics. Usually, it is a three-year course, but I finish in two years. My classmate, there was later the famous Indian mathematician Narlikar. Another classmate was Brian Josephson, awarded the Nobel Prize in Physics in 1973 at 33 for his Ph.D. thesis. Cultural Organization of Chittagong Details My one-year senior was James Marley, who won the Nobel Prize in Economics in 1998. John Popal was awarded the Nobel Prize in Chemistry in 1998, the same year that Amartya Sen received the Nobel Prize. He was my teacher at Cambridge. I am saying this to show how rich our learning environment was at that time. That being said, my Ph.D. thesis was on particle physics. Three or four years later, I started working on Einstein's General Theory of Relativity. Cosmology was later added to it. These three are the main areas of my interest and work. Later, of course, I also worked on fluid dynamics.

2 Academic career

From 1963 to 1965, Islam served as a Doctoral-Northern Fellow at the University of Maryland in the United States. Jamal N Islam worked at the Institute of Theoretical Astronomy in Cambridge (now the Institute of Astronomy) from 1967 until 1971. Here he worked on Einstein's theory, and in this way, he became acquainted with Steven Hawking.

From 1971 to 1972, he worked as a Visiting Assistant at the California Institute of Technology. From 1972 to 1973, he worked as a Senior Research Fellow at the University of Washington.

Figure 2.1 Cambridge University.

Later he worked as a researcher at the California Institute of Technology and the University of Washington. From 1973–to 1974, he served as the faculty of Applied Mathematics of King’s College London. In 1978, he joined the faculty of City University London until he returned to Chittagong in 1984. He returned to Chittagong in 1981 and joined the University of Chittagong as a professor of mathematics 1981 with a monthly wage of 2.8k BDT only. The university syndicate never agreed to offer him 3k BDT. He continued his job here with a 2.8k BDT salary. This is where he has to face an unexpected event. After one year of his teaching life at CU, he had to fly to London for some research-related issues and some personal issues. But the University authority did not grant his leave application, so he resigned from his job and flew to London and later sold all the permanent houses and lands in the United States and moved to Chittagong, Bangladesh. This time the University authority of CU agreed to offer him 3k BDT and also granted the intermediate period as education leave.

Figure 2.2 Jamal Nazrul Islam.

After two more years, in 1984, he returned to Bangladesh permanently with his family and joined Chittagong University (CU) as a Professor in the Department of Mathematics. As there was no vacancy for a Professor in the Department of Physics, he started teaching in the Department of

Mathematics and launched a research center for astrology and theoretical physics at CU. Many graduate students are doing their world-class research works nowadays at this center. In 2006, he was made Professor Emeritus at the University of Chittagong, and it was here that he worked with distinction until the last days of his life as Professor Emeritus. His time at Bangladesh was not smooth. Prof. A M Harun-Or-Rashid, Dhaka University, wrote a supplement to the magazine ‘Kali O Kolom’ after the death of JN Islam. He wrote,

My closest acquaintance with Jamal was in 1974 when he decided to move from Cambridge to Chittagong. One day, he told me from London that he wanted to move to Bangladesh over the phone. I said, ‘This is a very good decision. However, if he sends his application to me immediately, I can talk to the Vice-Chancellor of Dhaka University and advise him to take appropriate action. Then I was not ready to listen to what he said. He said he would not go to Dhaka, and he would go to Chittagong because there is his ancestral building. I tried to persuade him that I did not think he would get very good students in Chittagong, and maybe his research will be hampered there. But he did not listen to them at all. He said that I should meet the Vice-Chancellor of Chittagong University immediately with his application. I did so. One morning I bought a ticket for Chittagong by train and reached Chittagong. Arrangements will be made to immediately bring him into the professor’s post in the Department of Physics. Sadly, a few days after returning to Dhaka, I heard that some complications had occurred. It will not be possible to create posts in the physics department. So a few days later, a post was created in the mathematics department, and that too for the second time after visiting Chittagong University and making a special request to everyone. However, in the end, with the sincere efforts and unwavering co-operation of everyone, Professor Jamal Nazrul Islam was able to come and join Chittagong University.

His research areas include Applied Mathematics, Theoretical Physics, Mathematical Physics, theory of Gravitation, General Relativity, Mathematical Cosmology, and Quantum Field Theory. In 1997, Islam was invited to the International Symposium on Mathematical Physics in memory of Subramanyam Chandrasekhar with a special session on Abdus Salam arranged by Calcutta Mathematical Society in Kolkata-India. Professor Narayan Chandra Ghosh, a mathematician of India, was the director of the noted symposium.

3 Fellowship

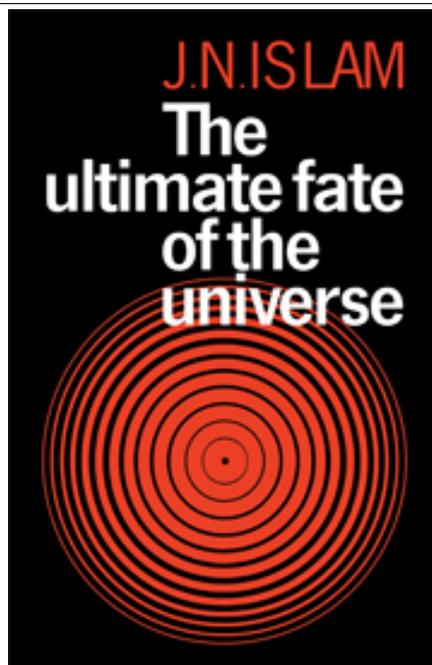
- Third World Academy of Science (1985),
- Cambridge Philosophical Society,
- Royal Astronomical Society,
- Bangladesh Academy of Sciences (1983),
- Islamic Academy of Sciences.

4 Death

Professor Jamal N Islam died at 84 in a private hospital in Chittagong on Friday night, March 17, 2013. His wife and two daughters survive him. He was buried at Garibullah Shah Mazar Cemetery after Janazah at Jamiatul Falah Mosque in Chittagong on Sunday.

5 Awards

- Gold award from Bangladesh Academy of Sciences (Senior group; 1985),
- Medal Lecture award from Accademia Nazionale delle Scienze (1998),
- Bangladesh National Award for Science and Technology (1998),

Figure 6.1 Cover of the book: The Ultimate Fate of the Universe.

- Ekushey Padak (2001),
- Razzak-Shamsun Lifetime Achievement Award in Physics from the University of Dhaka (2011).

6 Scientific Literature's (books authored-coauthored)

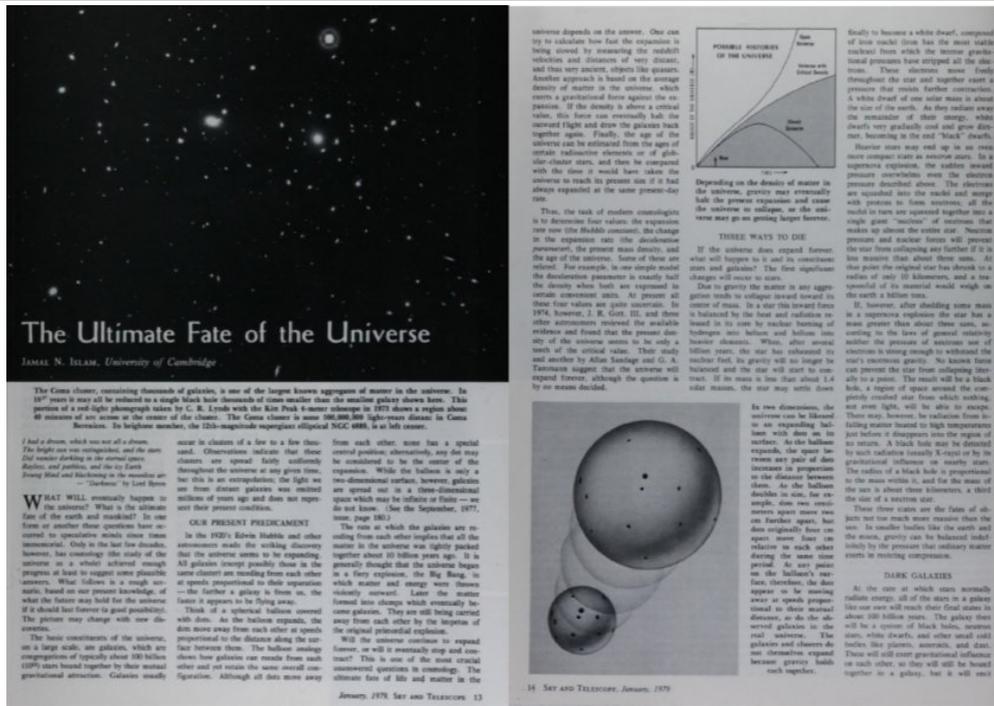
Islam authored, co-authored, or edited more than 50 scientific articles, books, and popular articles published in various scientific journals. Both in Bangla and English, he wrote a total of six books. Three of them are world-famous. Universities like Oxford and Cambridge refer to his books.

- His book 'The Ultimate Fate of the Universe' was translated into different languages like France, Japanese, Portuguese, Italian, etc. But the unfortunate fact is that this book was recognized to be translated into Bangla after being published in other languages. 'The Ultimate Fate of the Universe' was his first book published by Cambridge University Press in 1983. Before publishing this book, he published a short article summarizing the topics of this book in the *Sky & Telescope*, a monthly American magazine covering all aspects of amateur astronomy, including the following: current events in astronomy and space exploration; events in the amateur astronomy and many more.

In the preamble of this book, he wrote,

In 1977, I wrote a scientific paper entitled "Possible Ultimate Fate of the Universe". The research paper was published in the Quarterly Journal of the Royal Astronomical Society. Some of my colleagues found the research paper quite interesting and excellent. Soon after, Steven Weinberg's book The First Three Minutes appeared in the world of science. On the one hand, my colleagues have been very enthusiastic about my research paper; on the other hand, Weinberg has written a book about the universe's beginning. Combining these two aspects, I thought it would be nice to write a book about the end of the universe. Shortly afterward, I received a request from an astronomy magazine called Sky and Telescope. Let me write my research paper on the ultimate outcome of the universe in a language that is useful for everyone.

Figure 6.2 Article by Jamal Nazrul Islam in Sky & Telescope Magazine.



The article was published in the January 1979 issue of the magazine. The title of the article was 'The Ultimate Fate of the Universe'.

Figure 6.3 The cover of the January 1979 issue of Sky & Telescope Magazine, Jamal Nazrul Islam's article was published in this issue.

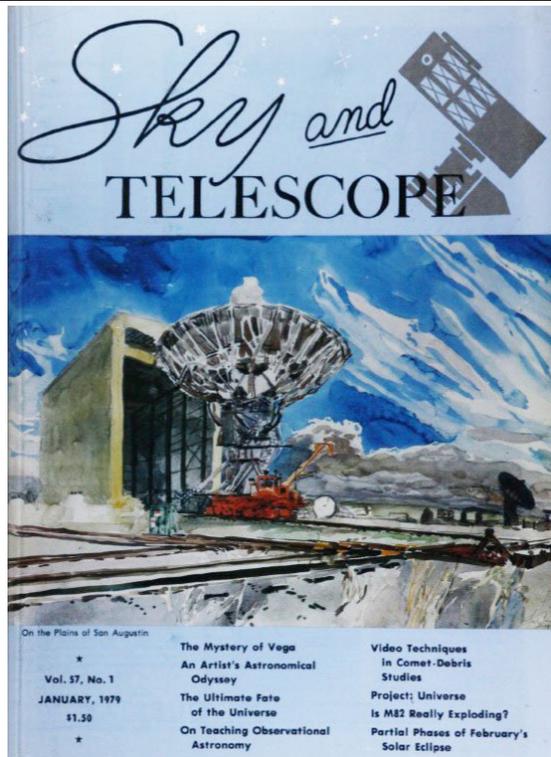
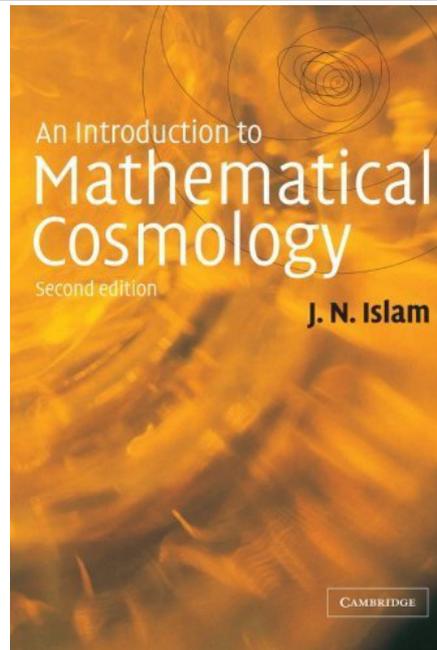


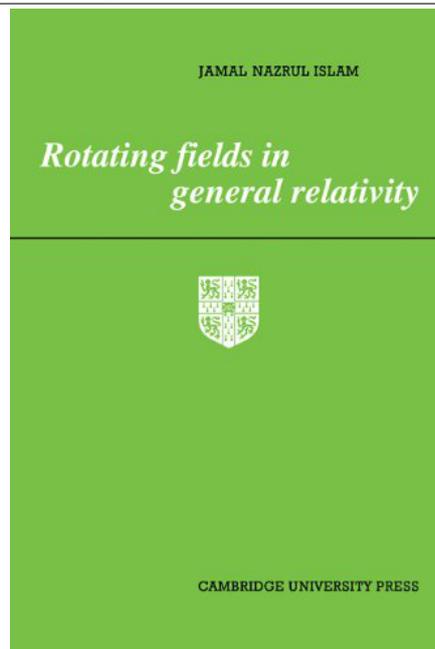
Figure 6.4 Cover of the book, An Introduction to Mathematical Cosmology



After it was published, the response I received prompted me to write a book on the subject. It is not bad to write a book discussing this subject in detail. The present book is the combined result of these events.

- His another famous books are ‘Rotating Fields in General Relativity’ and ‘An Introduction to Mathematical Cosmology’.

Figure 6.5 Cover of the book, Rotating Fields in General Relativity.



- He published six consecutive proceedings in the Proceedings of the Royal Society. Maintaining

the rule of the Royal Society, the submission needs recommendation letters from at least one fellow of the society. JNI's submissions got recommended by giants like Stephen Hawking and Fred Wheel. The topic for these proceedings was 'On Rotating Charged Dust in General Relativity.

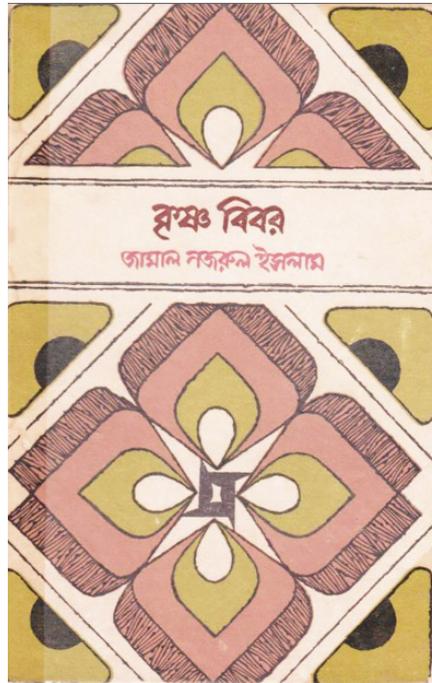
His book 'Rotating Fields in General Relativity' was based on this work and published in 1982 by Cambridge University Press, and he was nominated for the DSc award for his work in this field.

- He also wrote 'An Introduction to Mathematical Economics' published by Cambridge University Press and 'Confinement and Schrodinger Equation for Gauss Theories.'

Then he wrote books in Bangla

- Krishna Bibar - Published by Bangla Academy.

Figure 6.6 Krishna Bibar of Jamal Nazrul Islam among several books of Bhasha Shahid Granthmala.



- Mother Tongue and Science Practice and Other Articles - Rahat-Siraj Publications.
- Art Literature and Society - Rahat-Siraj Publications.
- Sky and Telescope - Cambridge University Press (Translated into Spanish).
- The Far Future of the Universe - Published in Endeavor.

Particularly remarkable is Black Hole, published by the Bangla Academy. Interestingly, such scientific books in 1985 were a very smart and unique initiative. Besides scientific fields, he also used to practice things like biology, music, economics, etc. He noted about his diversity that,

At that time, I was very old, so my field of work had become very wide. I jokingly say, 'Wider, but not necessarily deeper'.

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