

status are important factors in this regard. On the flip side, they note that Asian Americans are less psychologically adjusted and socially engaged in school and have more conflict with their parents than the whites.

(5) The fact that the students in other countries are achieving far better scores in science and mathematics in international standardized tests has been brought out by many studies, including by the US National Academy of Sciences. It has become the focal point in emphasizing and funding of STEM (science, technology, engineering and mathematics) programmes in schools and colleges, since it is seen as an important path to future careers and well-being of people and to national economy.

(6) Different children are interested in different areas. The US system provides them opportunities to pursue their interests and, as a result, there is a better chance for each child to excel in his/her area of interest, as amply demonstrated above by the winners in three diverse areas, namely geography, science and spelling.

(7) Forward-looking industrial establishments and non-profit organizations furnish attractive scholarships and awards for successful contestants.

Is there something here that we in India should examine and emulate? I personally believe, yes. Our school children are as bright as any in the world. The school system should create the opportunities and the teachers should pose the challenges and motivation for their inherent talent to blossom to the fullest. At least in the case of the brightest students, we should devise ways to nurture, encourage and find outlets for full fruition of their originality and creativity, and there should be a clear departure from the standard procedures which tend to encourage 'rote learning'. Our Academies of Science and Engineering and professional societies can take a more active leadership role in establishing challenging opportunities for gifted school children, our next generation thought leaders. Our forward-looking, and socially conscious large corporations should come forward with handsome

awards and scholarships purely based on merit. These opportunities should be available to all interested and motivated students. All this is doable.

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Biography of Vainu Bappu

The lengthy review of the book *Vainu Bappu: The Man Who Knew the Stars* is unduly harsh and critical¹. The book, less than 170 pages long, has earned a review of almost four pages in *Current Science*, complete with notes and acknowledgements, more like a journal article.

The reviewer has had no good words to say and has picked on a number of things, some quite trivial, to denigrate the book. He has also blamed the quality of production, copy-editing and small size of the photographs, etc, things which were not directly under my control. Although much had been written about Vainu Bappu's 'stellar' role in shaping the course of modern Indian astronomy, there had been no biography of his available to the common reader and the book sought to fill this gap. Perhaps the phrase 'formal biography' was a bit out of place, but the foreword by M. G. K. Menon and my own introductory chapter made clear the purpose of the book and the kind of readership it was seeking. Readability and affordability were among my major concerns. I did not know

Bappu personally and came upon the idea of writing the biography as I looked at the broad development of science in independent India and was convinced that the example of Bappu's life and work had to be placed before the general public. The publication of the book in English (the Kannada version appeared at least a year before) gave a rare sense of satisfaction.

I would like to point out several inconsistencies and unfair allegations contained in the review. The reviewer has spelt out a prescription for writing a biography and states at the end that my attempt in writing a 'formal' biography has not been up to the mark. The fact remains that I had done exactly what the reviewer has prescribed, namely familiarizing myself with all that had been written about Bappu and his work, authenticating much of the information thus gathered by consulting primary sources available at the Indian Institute of Astrophysics (IIA), meeting many of the individuals who knew Bappu well and had worked with him, and then collating the

entire material to the best of my ability to produce the book. I have also tried to place Bappu's work in the larger context of the development of astronomy in post-independence India. The many people I spoke to include Vainu Bappu's wife Yemuna Bappu, his college mate L. K. Doraiswamy, and several of Bappu's colleagues at IIA. I was in constant touch with D. C. V. Mallik, a colleague of Bappu's since 1973. I also communicated with his colleagues K. R. Sivaraman and Ch. V. Sastry, who now live in the United States, and A. P. Jayarajan who lives in Bangalore. I might not have spoken to all who knew Vainu Bappu and surely, my most notable omission has been to not consult Kochhar. The book contains several rare photographs that Yemuna Bappu provided and it is perhaps the only writing on Bappu where Doraiswamy's reminiscences have been recorded. Doraiswamy knew Vainu Bappu right from his student days and was with him even in Harvard. What the reviewer calls unnecessary digressions are in reality scientific explanations and

historical background to the astronomical material the book deals with and I have included them to make the book more accessible to the lay reader. If anything, I feel these have enriched the book. The reviewer has rather maliciously picked out the caption below Meghnad Saha's photograph (p. 39) to suggest that I have only made a superficial remark on Saha's work, while actually the book contains more than two pages of description of it and of its impact on modern astrophysics. The reviewer says that the book appears to be a world astronomy encyclopaedia and I do not see any reason to call it so, since it covers only the portion of astronomical research and discoveries that directly relate to Bappu's work.

Barring a couple of opening paragraphs, most of the review is an essay on Bappu's life and does not contain any additional material that is not already in my book. Any reader of this review gets the impression that these aspects of Bappu's life are not covered in the book at all. It is also liberally peppered with gossip and much of the interpretation is the reviewer's own. I dare say the book has hardly been reviewed. Much of what is written is, by the reviewer's own admission, based on personal conversations he had with Vainu Bappu during the period 1974–1982 and none of it is verifiable. Many others who knew Bappu as well may claim that some of the things written by the reviewer are not quite true. As an example, the reviewer says 'At the time of his arrival in Harvard, Bappu had had no real experience in speaking English and not very much background in astronomy'. But as I point out, Bappu had read a great deal of English poetry as a student in India and his exposure to

astronomy had begun when he was a child. His first astronomical paper, one on the variable stars in the constellation of Eridanus, appeared in 1946 much before he arrived in Harvard. The reviewer disagrees with my description of how the encounter between Harlow Shapley and Bappu took place in 1947, but what I have written is based on Yemuna Bappu's recollections. So, it is her version against Kochhar's. 'Secretary' here does not mean what the reviewer has in mind – a bureaucrat. Harlow Shapley was an honoured guest and the hosts might have had assigned a person to attend to his requirements. Similarly, the statement that 'in November 1985, when the 10-day General Assembly of the International Astronomical Union was being held in New Delhi, Menon brought the news that Prime Minister Rajiv Gandhi, along with his children would like to visit Kavalur to observe Halley's comet', is not quite right. The Prime Minister's wish was communicated to Bhattacharyya by a telex, when the latter was attending an IAU colloquium on hydrogen-deficient stars in Mysore that preceded the IAU General Assembly. Mallik was present in Mysore and saw the telex when it arrived late in the afternoon several days before the General Assembly was to commence. Nowhere have I claimed that on my visit to Kavalur in April 2010, I stayed in a room in the Vainu Bappu Telescope building as the reviewer has accused me of. On page 7 of the book, I wrote: We returned to our rooms late in the night. Handing over the key to my room, Mallik, said that it is a special room. I asked him what is special about it. He said, 'This was Bappu's room. He stayed here during his visits to

Kavalur'. During his time the room was only used by him. It is the same room where Rajiv Gandhi spent a night in 1986. I consider much of the criticism as nitpicking and has been made deliberately to belittle the work.

The most hilarious part of the review is the statement that Bappu once 'hid himself in the solar telescope tunnel' to avoid meeting with the well-known astrologer B. V. Raman, who was visiting Kodaikanal. What inspired the reviewer to make this statement is the title 'Stellar spectroscopy: the horoscope of stars' I chose for a chapter. The reviewer appears to have missed the pun here.

If Kochhar were so very particular about spellings and names, why is it that in his review Suri Bhagavantham's name has been consistently misspelt and the National Institute of Sciences of India has been called National Institute of Science?

Finally, I suggest that since the reviewer seems to know so much more about Vainu Bappu and perhaps possesses the correct perspective from which a definitive biography of Bappu should be written, he must write one and add to the growing collection of landmark biographies of eminent Indian scientists.

1. Kocchar, R., *Curr. Sci.*, 2014, **106**, 1752–1755.

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Science in the doghouse

In their recently published paper, entitled 'A dog's day with humans – time activity budget of free-ranging dogs in India', Majumder *et al.*¹ claim that free-ranging dogs in Indian cities are 'generally lazy and friendly animals', spending most of their time 'either sleeping, lazing or sitting'. Using results from behavioural observations of free-ranging dogs, the authors claim that perceptions of free-ranging dogs in India as 'noisy and

aggressive creatures' are biased, and that in fact dogs do not pose significant threats to human well-being.

We feel the need to write this letter for multiple reasons. Not only is this an example of a poorly conducted study, but major problems in almost every section of the paper raise substantial doubts about the veracity of their conclusions, which can have serious consequences. Free-ranging domestic dogs are not

unique to India, and are considered to be a public health issue, a financial drain on municipal authorities and shelters, and an animal welfare concern all over the world². With complete nonchalance, the authors ignore these assessments. Instead, the highly biased and unsubstantiated conclusions from their preliminary study trivialises the issue and provides a highly misleading headline grabber for uninformed activists to further polarize