

Tributes to M. K. Vainu Bappu

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disappointment he must have felt when it became clear that he would be unable to participate himself

But we have had the privilege of sharing his thoughts of those last weeks by the message he conveyed to us at the opening of this Assembly. May I remind you of the words Vainu passed on to us in his presidential address and let me quote a few sentences from it

«While innovation in technique is a factor of much significance in the discoveries that will yet be made, it is certain that an even greater role will undoubtedly be of the human intellect. Time and again we have seen how an individual has appeared on the scene and transformed a picture of gathering confusion into one of logical rigour and aesthetic simplicity. In the final reckoning, it is this aspect of Man that is responsible for the culminating triumph. It is, therefore, a responsibility shared by each one of us in our individual roles, be it of teacher or senior colleague as well as of the astronomical community and the Union as a whole, to nurture such possibility. In its longterm view of contributing to the development of Astronomy the Union must necessarily give considerable attention to the very important role of the individual in Astronomy.»

As we take up our tasks for the Union and for research and teaching, let us keep these words of Vainu Bappu in mind

Dr. Harlan G. Smith - as a close friend

Vainu Bappu was probably my closest friend. For 33 years the strands of our lives have interwoven even to the extent of his being best man at my wedding, and my just missing (because of academic schedules) being something of an equivalent at his wedding in India. I mention this because so few now in the IAU have had the privilege of really knowing him, and it is my grievous task to say farewell to him as a friend, on behalf of us all.

When the IAU was founded most astronomers knew each other, often rather well. Vainu was proud of the growth of our science, but regretted that he could only know so few of us, especially the young astronomers who are coming up so fast. For those who did not know him, I want to share several memories. There is no way I can truly bring out the richness of Vainu's life and mind and

personality, but these vignettes — like flashes of lightning revealing fragments of landscape — may help you to glimpse the wonderful human being behind the formal degrees, the papers, and the honours he so well deserved.

In January 1949 we entered the Harvard Graduate School of Astronomy — entered with trepidation yet excitement to be studying in halls peopled with memories of the likes of Bond and Pickering, and the very real presence of Shapley, Bok, Payne-Gaposchkin, Menzel and Whipple. In the so-called liberal arts there is now a cult — I believe unfortunate and destructive — of the anti-hero, with its emphasis on sickness and psychosis, on feet of clay. But Vainu belonged to an older and finer school. His spirit was generous, kind, non-cynical — even hero-worshipping in the best sense of the word. He deeply admired if not even venerated his teachers and those, living or dead, who had really accomplished something. He well knew and understood human frailties, but to Vainu the important things were those qualities and works of great men and women which should be admired and emulated as far as possible in his own life.

Then, as now, it was fashionable for graduate students to work very hard, and we did — sometimes tired and discouraged. I recall an occasion walking home with Vainu late on winter night, our conversation turning to whether we might ever get jobs or amount to anything in astronomy. Nearly always cheerful, he brightened up and proceeded to quote from his memory, well-stocked with classics, the entirety of his favorite poem — Kipling's «If». Though I cannot quote them exactly, most of us are familiar with a few of its famous lines, to the effect

*If you can keep your head,
when all about are losing theirs,*

Then you'll be a man, my son.

Then you'll be a man, my son.

*If you can hazard all upon a toss,
and lose, and rise to try again,*

Then you'll be a man, my son.

The spirit of this poem was truly a beacon to his life — encouragement always to try to answer those «ifs» with «I can, and I will».

Yet Vainu was anything but solemn. He laughed, and joined in most of the games and jokes. He found the necessary paraphernalia, and organized at the Observatory what must have been the only cricket team within a few hundred miles, teaching us the mysteries of sticky wickets and googlie-balls. On one occasion he gaily commented on some virtues of yoga, to the amused condescension of some of the other graduate students. So he inveigled me into a scientific test. We both stood on our heads (one form of yoga) for ten

or fifteen minutes before each major exam. And, that year, we two were the only students to pass them all. QED! (but Vainu was too gentle ever to rub it in).

In those innocent days we had never even dreamed of being given money to travel to meetings. Yet Vainu never wanted to miss a session of the American Astronomical Society. So we went to all of them in our part of the country, doing what was necessary to make it possible, such as driving in my \$75 Model A Ford, literally spending nights on the lawns of host observatories in our war-surplus sleeping bags. Hot or cold, hungry, mosquitoes — Vainu never complained, and usually managed to bring the conversation around to astronomy.

He finished his PhD in near-record time. Then, after a couple of brilliantly successful years as a post-doc at Cal Tech, he could easily have obtained a comfortable job in the US. But I never sensed any doubt in his mind. His dream was to build and to do astronomy in India. I think it is hard for us now to realize the courage of this decision — to leave the centre of world astronomy, the 200-inch, and return to an India, which then, just after Independence, lacked any of the structure of modern astronomy, with essentially no institutes, telescopes, colleagues... not even a job. That first period effectively of unemployment, in the midst of such desperate poverty, might indeed have made him wonder whether — having risked his all upon a toss — he might have lost, and could he rise again?

Then came the chance, largely through his own persuasion of a reluctant minister, to build a U.P. State Observatory at Naini Tal. And shortly thereafter came Yemuna, a pillar of love and strength throughout his life. From then on the path was up. You know at least the outline of the rest, but again I think cannot easily imagine the problems to be overcome, the incredible effort involved, in an India trying to build nearly everything at once from scratch, to in effect create three astronomical institutions, a national society, a national journal, optical and machine shops, engineering and computer contacts and facilities adequate to design and build entirely within India a 2.34-meter telescope. Yet during all this time he was constantly looking for, and then looking out for, dozens of students who are now putting India on the astronomical map.

He did these things, and more, and reached the very top. This meeting in Patras would have been the peak of his career. I believe it meant more to him than words can convey, something he had been building toward for 40 years and more. Yet, when the urgency of the operation became clear, he adjusted with remarkable speed and calm philosophical acceptance both to missing this peak, and to the very real risk of the operation.

My wife and I spent a day and a night with

Vainu and Yemuna just before the operation. He was vigorously planning at least three major things for the future, finishing the Kavalu telescope, getting the 1985 IAU plans off to a good start, and, finally, contemplating the course of his life after mandatory retirement around 1985 as director. In general he was planning to travel to many institutes, to renew old friendships and make new ones, and to concentrate on science.

Now these travels will be in our memories, and the work done by others. Meanwhile our hearts are with Yemuna and with Vainu's mother. I want them to know that for us Kipling's poem has come true. Each of the «ifs» has become a «Because», or «Since», for Vainu really did live up to all of them. And I hope his mother might take comfort in adding a final couplet:

*Since you ran the course, against all odds,
and won,
You did indeed become a man, my son.*