

Dr Vikram Sarabhai – The Light that Leads the Indian Space Program

It was a brilliant light that ignited the first sounding rocket, which went high into the skies of Thumba near Thiruvananthapuram in the early sixties. The light itself did not last long but it ignited several more lights that continue to shine brightly helping a vast section of the society, especially at the grassroots level, to come out of darkness.

Vikram Sarabhai died young. But in his short tenure in this world, he lit several lamps in the form of institutions that cover textile research institutions to management institutions and space science laboratories to theatres of art and culture. These institutions stand testimony to the contributions of a scientist, administrator, industrialist, a true admirer of art and culture, and above all a human, concerned deeply about his fellow beings and always thinking of their upliftment. The powerful light that was personified in Sarabhai attracted several to his fold, and each one of them was lovingly tended by him so that they could grow up to become his torchbearers.

I was one of those who had the privilege of being associated with Sarabhai. My first encounter with him was in 1963 as an aspiring researcher when I got the opportunity to work at the Physical Research Laboratory (PRL) in Ahmedabad on cosmic rays. In those days, every student of PRL had to be personally endorsed by Sarabhai. When I was ushered into his room, the first thing he did was making me feel comfortable. Then he probed my mind to know how serious I was about research by telling me about the small amount of stipend that I was to get as a Research Fellow. My first impression of him was that he was very humane. Outlining his vision of India's space program, he meticulously explained how space was very important for India to 'leapfrog'

from the state of underdevelopment to an advanced nation. He visualized that space would play a very important role in India's future.

Three decades later, with his dream fulfilled by and large, we have unambiguously realized that Sarabhai had a rare vision. Today, the nation is reaping the benefits of our space systems like INSAT and IRS in various areas like telecommunication, TV broadcasting including innovative use of the media for developmental communication and education, meteorology including disaster warning, resources survey and their management. But what is important to note is that, in the early sixties, space was still a new technology and many nations including developed ones considered it esoteric, expensive and not applicable to developing countries. But here was a scientist in a developing country visualizing the application of a new technology, seeing its potential for connectivity and ultimately creating the right tenor for realizing his vision of India effectively making use of it.

It was Sarabhai who conceptualized the Satellite Instructional Television Experiment (SITE) which was one of the largest sociological experiments conducted anywhere in the world involving educational television broadcasting via the US satellite, ATS-6, to rural masses spread over six states and covering 2,500 villages. He was determined to prove the utility of a space system for grassroots level application for a large country like India. He proved the efficacy of space-based remote sensing through organization of airborne experiments for detecting coconut wilt disease in Kerala in the sixties. It was he who proposed the first Indian experimental satellite, later named Aryabhata, to acquire first hand experience of designing, building and operating



a satellite system. He was instrumental in setting up the Thumba Equatorial Rocket Launching Station that was later dedicated to the UN and thus sowed the seeds for the Indian satellite launch vehicle program. Today India has PSLV which has been commissioned into service for launching not only Indian remote sensing satellites but also satellites of other countries into Polar orbits. With the first successful test flight of GSLV in April 2001, India is all set to achieve self-reliance in launching geo-stationary satellites like INSAT. The scientist that was Sarabhai, set up and nurtured Physical Research Laboratory at Ahmedabad that carries out front ranking research in several areas of space sciences in the country today.

That is leadership. A leadership that is characterized by a unique combination of the analytical mind of a scientist, business acumen of an industrialist, innovative spirit of a technologist, aristocratic cravings for grand ventures and the concern for his country as a true patriot.

I remember an incident when we were conducting an experiment in cosmic rays. Along with two colleagues, I had put together an instrument, which we had to flight test using a balloon. Sarabhai was there very early in the morning standing before us, curious to see how we were going about our flight test and make measurements using the instruments. But as luck would have it, we could not fly the balloon that day because of a problem in one of the instruments.

To the crestfallen team he said "these are all very small things. If not today you are going to fly it tomorrow. Work towards it". His presence itself was a tremendous boost to us and his words lifted our spirits. The very next day we successfully flew the instrument with the balloon and collected very interesting data! Sarabhai was not only a scientist by himself but he was a great leader of scientists.

The confidence that people like me acquired by working with Sarabhai has indeed stood us in good stead. If we are able to take risks today in executing our space program that entails large investments and take decisions even in the face of uncertain outcome and implications that are not very obvious, it is because of the culture that he imbibed in us and the sense of confidence he instilled.

It is always the first few steps that are important in the life of an organization. Those steps are crucial and need to be taken under the gentle care of a humane and loving leader, who can reassure the organization and reinvigorate it at every faltering step, admire every right step and encourage and aid in taking larger steps ahead. If ISRO, the organization that implements the space program in India, has made an indelible mark in the development and application of space technology, it is because of the crucial leadership that was provided at its infancy by Vikram Sarabhai, truly, the father of Indian space program.

K Kasturirangan

Chairman, Indian Space Research Organization
Bangalore 560 094, India.