

merely the different modes of vibration of the string. The unification ideas have brought closer the seemingly contrasting worlds of the smallest and the largest. In particular, these ideas hold the promise to explain how the universe evolved over a very short time after the big bang. Another possibility is that the quarks and

leptons are themselves composed of more elementary objects. Unfortunately, so far we have no experimental evidence for any of the ideas beyond the standard model.

1. Crease, R. P. and Mann, C. C., *The Second Creation*, Macmillan Publishing Company, USA, 1986.

2. Ting, S. and Richter, B., *Nobel Lectures*, 1976.

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PERSONAL NEWS

Chief designer and rocket technologist

An obituary of S. Srinivasan

S. Srinivasan was a close friend of mine since 1972 and our friendship continued for nearly a quarter century. For about a decade, we worked together at the SLV Complex, Thumba.

Srinivasan, a *Karmayogi* made Vikram Sarabhai Space Centre (VSSC) self-reliant in launch vehicle design. He was responsible, with his team, in designing isogrid structure, sandwich construction, segmented rocket motor casings, composite design and production capability. In the launch vehicle technology, he introduced 'design to cost' and 'design to reliability' concepts and spread them in VSSC. He established design, technology and test centres in the Valiamala complex. I remember an event, the next day (19 July 1980) after the successful launch of SLV-3 that put ROHINI satellite in the orbit. When the country, the organization and the teams were busy celebrating the success of the completion of the SLV-3 project, Srinivasan organized a special Project Review Meeting at the SLV-3 complex at Thumba. The SLV-3 team greeted each other and saw the long and big black board in the Conference Hall fully filled with Srinivasan's beautiful and yet powerful message of what will be the future tasks for the preparation of the next SLV-3 flight, identified with actions needed and responsibility. It was indeed a great experience learning and working with Srinivasan. He was a source of inspiration for the team. He ignited young minds – to aim at greater goals. Unless

the thoughts get into actions, Srinivasan would not accept anything else. Wherever I was, a phone call from Srinivasan made me reschedule all my other programmes and reach Thiruvananthapuram. That was because of the special bond of friendship.



Dr Srinivasan was intellectually great, yet he can communicate to all. He worked himself on tough problems, And trained his team confident to meet tougher. He always lit the candle when there was darkness all around,

*At success, Dr Srinivasan was calm and full,
At failures, he stood like a mountain and his team climbed over.
He will preside over, empower many to contribute and dream,
Criticism for Srinivasan, was indeed a turning point for good,
Many with pain would go to him, would remove with a smile.
Oh Almighty God, we pray and pray,
Here is your beautiful creation,
Bestow on him, all your grace.*

Great events take place in a nation where great men dream and sweat. Sweat transforms into design, product and finally the system. Systems are like rockets to multiple launch vehicle systems. The VSSC campus created a great scientific and technological mind and a great soul. Srinivasan was the Chief Designer of various types of rocket systems. His ideas and thoughts transformed into launch vehicles like SLV-3, ASLV, PSLV and the forthcoming GSLV. The nation gratefully remembers his contributions.

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