

## CORRESPONDENCE

### THE STUDY OF METEORITIC AND COMETARY IMPACTS ON EARTH

The lead article of Dr B.P.Radhakrishna – “Some thoughts on Planetary Impact Structures in India and on the Importance of their Study” (*JGSI*, v.66, July 2005, pp.5-10) is very interesting and timely. He has stressed that the dangers of large bodies from outer space causing total destruction to the land, ocean and life on this planet has to be taken seriously and this calls for a detailed study and research in our country for providing a lead in the prediction and warning of the consequences of such disasters.

I would like to mention on this subject, an interesting article by Tom Gehrels (originally published in the *Scientific American*, March 1996, pp.36-39 and later reprinted in an anthology – *EARTH FROM THE INSIDE OUT*, *Scientific American*, 2000, pp.90-95), entitled — Collisions with Comets and Asteroids, describing that though the celestial bodies follow distant stable orbits, but rare mischance can make them collide with the earth, the consequences resulting in a catastrophe. He stresses: “The dangerous objects have to be located, as soon as possible, to diminish the chances of our unexpected demise”.

In 1980, SPACEWATCH – a project dedicated to the study of comets and asteroids, with a primary goal to explore various populations of these objects and investigate the dynamical evolution of the solar system and to identify such objects that might present a hazard to the earth, was founded at the University of Arizona, Tucson by T. Gehrels and R.S. McMillan. Spacewatch discovered an abundance of

small asteroids. It is interesting that these asteroids are called the ‘Arjuna’s’, after the legendary prince in Mahabharatha who persisted on his chartered course in the field of archery. Reconnaissance satellites and electronic detectors on telescopes coming online, are of great help in precise measurements and for marking position and course of these bodies. The ultimate aim of this work appears to deploy a spacecraft that could send a rocket to explode near the asteroid and deflect it so that it may bypass our planet.

Again Tom Gehrels draws inspiration from the Indian mythology and sums up: Comets and asteroids remind of Shiva, the Hindu deity who destroys and recreates. These celestial bodies allowed life to be born, but they also killed our predecessors, the dinosaurs. Now for the first time, the earth’s inhabitants have acquired the ability to envision their own extension — and the power to stop the cycle of destruction and creation.

Prof Tom Gehrels was a Sarabhai Professor at the Physical Research Laboratory (PRL), Ahmedabad and author of a paper jointly with Bhandari N (1999) on “Killer comets and asteroids over geological history and their future hazards”; in “Space Research in India: Accomplishments and Prospects”, Ahmedabad, India, PRL Alumni Association, M.S. Narayan et al. (Eds.), pp.315-334.

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