

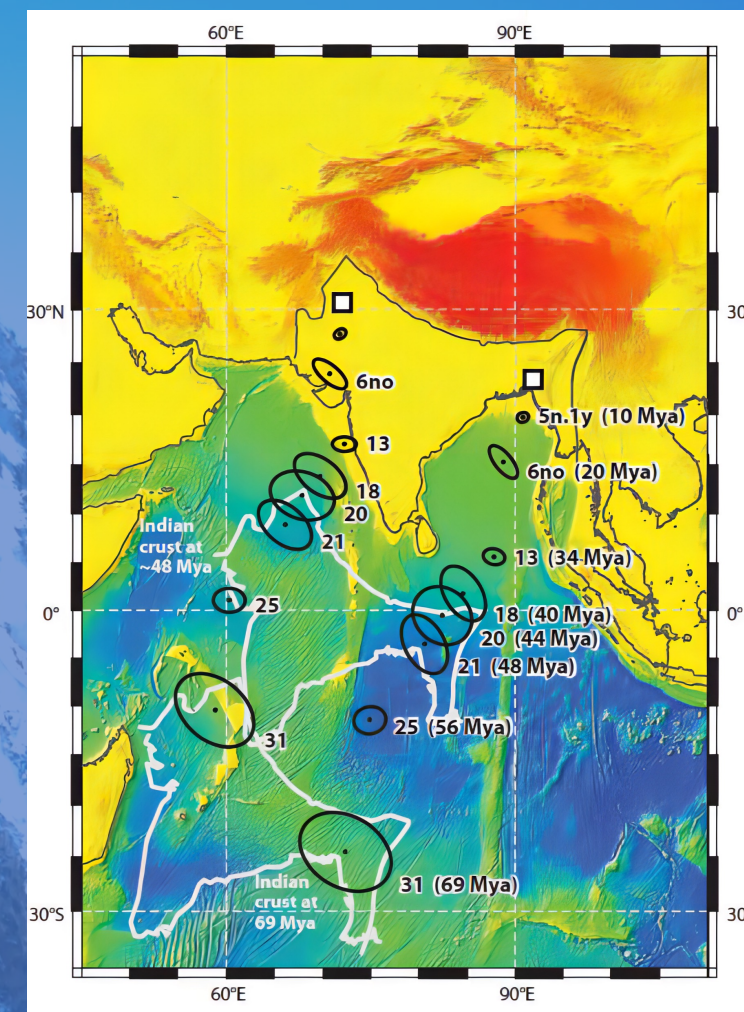
## Plate Tectonics and the Making of Himalaya: An ongoing Process

Prof. Vinod K. Gaur (Honorary Emeritus Scientist, CSIR Fourth Paradigm Institute)

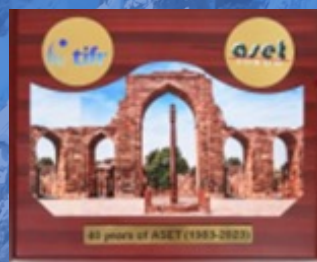
**Friday 4th August 2023 at 4 p.m. (AG-66, TIFR Mumbai)**

YouTube Live Link: <https://youtube.com/live/w3rVrFkEb1E?feature=share>

Plate Tectonics is a thermodynamic engine that planet earth designed to transfer its internal heat to the surface. This became possible because of its right distance from the sun, in the region of water's triple point, and the right mass to hold the outgassing atmosphere in its gravitational cage. The water that was released by the subsequent firing of the kiln of hydrated minerals was thus quenched into rain to form the blue planet, instead of escaping into space as happened on Mars. About 130 million years ago, a part of the aggregated land mass called Gondwana that had gathered over the south pole, broke. Thereafter, its northern part bearing the Indian continent began to drift northward towards the northern aggregation called Laurasia. Throughout India's northward journey, its northern oceanic apron, being denser, slid beneath Laurasia while molten rocks flowing in the chasm at its back, created the Indian ocean. 80 M year later, India relentlessly pushed northward by the expanding Indian ocean, arrived face to face with southern Eurasia and dived beneath it despite suffering considerable deceleration from ~10 cm/yr to ~4.5 cm/yr. In time, the relatively stolid Indian continent penetrated the underbelly of Tibet and has been seen in seismic images to lie as far north as Lhasa whilst raising it to become the largest, widest high-altitude plateau on the globe. Viewed from Tibet, one would see it moving southward over India at a velocity of 2.0 cm/yr., whilst an equal stretch of the Indian landmass slides beneath it. The lecture will discuss the scientific validation of the Plate tectonic hypothesis and quantification of numbers that characterize the spatio-temporal convergence process between the Indian plate and Tibet resulting in episodic energy release through catastrophic earthquakes because of the finite strain storage capacity of rocks.



Scan for details



40 years of ASET Colloquium

*Professor Gaur is a Fellow of several Indian Academies and of the Third World Academy of Sciences. He was awarded the Bhatnagar Prize (1980), the Flinn Award of the American Geophysical Union (2000), the Saha Birth Centenary Award of the Indian Science Congress (2006), and INSA Lecture Awards: the GP Chatterji Memorial Lecture (1991) and the D N Wadia Medal Lecture (2007). In 2014, he was given the Lifetime Award of the Ministry of Earth Sciences, Government of India. Professor Gaur was also conferred Doctorate of Science Degrees (Honoris Causa) by the Banaras Hindu University, the Andhra University at Waltair and the Jawahar Lal Nehru Technical University at Hyderabad.*