



Centre for Earth Science Studies

Announcement of the SYMPOSIUM on Geodynamics and evolution of Indian shield-through time and space

The Centre for Earth Science Studies will hold the symposium during September 18-19, 2008 to commemorate the golden jubilee year of the Geological Society of India. The geology of the Indian Peninsular shield spans much of Earth's 4.5 billion history so the symposium will discuss on different activities in the **Geodynamics and evolution of the Indian shield-through time and space**. This evolution includes: the development of early Archaean cratons, granulite belts, the Purana basins, Closepet granite, Deccan flood basalt province, and the development of Western Ghat (Sahyadri) 'great escarpment', thus representing some of the most fascinating archives of the Earth's geological history and, accordingly, have attracted the attention of the Earth Sciences community at the international level. It is now widely recognized that the significance of these Indian-based geological studies have far wider implications for global continental dispersal and amalgamation phases, mantle dynamics, continental margins and plateau uplift and the evolution of life. Thus, the geology of the Indian shield has provided important lessons to furthering our understanding of key stages in Earth's evolution. The topics of the symposium will be divided into following:

Precambrian crustal evolution in Indian shield: this will include the polyphase deformation and metamorphic evolution of the granite-greenstone cratonic elements and the high-grade mobile belts, and development of the Purana sedimentary basins and associated episodes of magmatism. Together, these have historically provided excellent scope for multidisciplinary studies for addressing the chronology of the Earth's early evolution, and there has been a great advancement over the past few decades in our understanding of these aspects. The sessions will deal with tectono-sedimentary styles of the early Earth, the major changes marking the Archaean/Proterozoic transition, dispersal and amalgamation of cratonic blocks in reference to supercontinent cycles, early biological evolution, and investigations of the subcontinental lithosphere mantle.

Phanerozoic evolution of the Indian shield: The early Palaeozoic evolution of the Indian shield has attained relatively little consideration largely due to the paucity of rock record and lack of orogenic activity at this time. By contrast, the Gondwana Formations in eastern India host large coal formations, and have attracted considerable economic attention. Importantly, the rift-drift history of the latest supercontinent, Pangaea, is well manifested in the form of Mesozoic and Cenozoic sedimentary basins and large flood basalt sequences in Indian subcontinent. Neogene-Quaternary sedimentary sequences, widespread laterite profiles, and the voluminous offshore Bengal fan deposits, have attained considerable significance as proxy indicators for a variety of processes of this time frame. The Sahyadri Mountains (Western Ghats escarpment) is a major geomorphological feature that has developed during the Tertiary, and which has since affected the orographic and river drainage characteristics of Peninsular India. Thus, the Phanerozoic record from India consists of highly significant signatures by which we can trace the development of large igneous provinces, processes of lithosphere/asthenosphere interaction, the history of continental break-up, investigations concerning the K/T boundary and its purported environmental impact and mass extinctions, palaeoclimatic fluctuations, and neotectonic activity. These topics will occupy the central theme for discussions.

Recent activities: Earthquakes, landslides, tsunamis and floods, growing environmental awareness and concerns regarding population growth have highlighted how human communities may become increasingly vulnerable. These social and scientific factors have motivated scientists and the funding agencies to pay an increasing attention to the natural processes of our planet which are directly relevant to human environment. Recent advances in computers and space technology have opened up new avenues of high resolution spatial mapping to understand the processes shaping the landscape, terrane evaluation for the development of hydrological engineering, and quantitative estimates of crustal movements. These are now among the priority themes, and will also be included for discussion.

Call for abstracts and registration: Abstracts of not more than 500 words are invited to reach the Convener before **July 20, 2008** in word format. One or two images or graphics that are informative are also encouraged wherever essential. The participants are requested to register before August 1, 2008.

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