**Discoveries/Research done**

My research at the Division of Geological and Planetary Sciences, Caltech was based upon the geochemistry and geochronology of Archean rocks of Ntem complex of Congo craton in Cameroon. We applied a variety of cutting-edge techniques to analyse the East African rocks like X-ray Fluorescence (XRF), Electron Probe Microscope Analysis (EPMA), Scanning Electron Microscope (SEM), and Raman spectroscopy.

My research primarily focused on categorising the samples and integrating with suitable physical models which dominated and shaped the Earth’s surface billions of years back. This project is of immense importance in the global community of geo-scientists as most of the land in Cameroon has a very thick lateritic soil cover which made previous geological surveys impossible, but the recent excavations while developing a hydroelectric project made sampling possible for the first time since rock outcrops of Archean ages (4.5-2.0 Billion years) were exposed. The paleomagnetic developed as part of the same project by another grad student at Caltech clubbed with my analyses would give us a deep and detailed insight on how the ancient proto-continent migrated on the globe since it first appeared before integrating and becoming part of the African continent. We also are performing MELT petrological modelling to give us an idea on the nature of the ancient magmas, mantle processes and conditions which eventually led to the building up and emplacement of the craton. In a global scenario this study has a huge potential to throw valuable light on the Archean plate tectonics along with crustal-mantle evolution of our planet along with determining amalgamation of the Pre-Gondwana supercontinents.

**Achievements**

I have analysed over 120 samples for XRF along with 35 thin sections for EPMA, SEM, petrography along with RAMAN spectroscope wherever necessary. Geochemical analyses are tedious and time consuming and there is the always-looming danger of contamination which could seriously mess up analyses and their implications. The project is still ongoing and my guide Prof. Paul Asimow, his collaborators from Cameroon along with myself are developing the data and working on the implications and hopefully soon we can come up with something substantially concrete. I would also here like to mention that my mentor has invited me for a second time to continue this project in December for another 2 months.

**Synopsis of overall experience**

Caltech is a paradise for young scientists and I felt like I perfectly fit into the research environment as well as the American way of life. I drew strong inspiration from my mentor and other professors at Caltech and witnessed a first-hand experience regarding how researchers in the best universities of the world think and develop their science. I used to faithfully attend the seminars and the weekly research paper reading group discussions where professors and students openly discussed interesting scientific papers and developed an even stronger inclination to pursue a research-based career. I also have had an increase in my affinity towards learning and developing new science after personally interacting stalwarts of the geo-science world. I also spent few of my spare weekends to explore the LA city, its vivid culture and life by the Pacific.

I would want to end my note with immense gratitude to IIT Kgp Foundation of USA for helping me out in an extremely crucial point in my career and without which my internship at Caltech would have been very difficult to pursue. I would also like to extend my thanks to Mr. Ron Gupta and Ms. Erin Moran who have helped me throughout the entire process of obtaining funds and always responded and immediately helped me with my little queries.