Solar and Astronomical Forcing on the Earth's climate

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For sustenance of life, climate and environment of this planet, thermal and magnetic energies that are originating from the sun are required. Innumerable growing evidences are building up that the sun strongly influences earth's environment and climate. With few years of observed data set, in the beginning of 20^{th} century, many investigations in the literature that dealt with the influence of sunspots on the climatic series such as rainfall and temperature anomalies data set yielded different and inconclusive results. Although sunspots are one of the interesting and outstanding solar cycle and activity phenomena, recent observations from the ground and space based discoveries in solar physics unfolded equally interesting and energetic phenomena such as flares, coronal mass ejections, solar global oscillations, coronal holes, etc. In the present talk, using long term (> 10 years) earth's climate series data, I will show that solar and astronomical forcing are the main agencies that strongly influence the earth's environment and climate. I will also explore further and search for possible triggering and causal relationships of disastrous events such as severe cyclones, floods, atmospheric lightening, earthquakes (especially magnitudes > 6), etc. of the earth and will show that root cause of these events most likely are associated with sun's transient abnormal thermal and magnetic activities. As India supposed to enter the status of an advanced developed country in future, Indian economy mainly depends upon the Monsoon rainfall. Hence, finally I will briefly touch upon and search for possible cause of severe drought experienced recently by northern part of India. With presently observed Monsoon rainfall series and inferred Monsoon proxy data set from the paleoclimatic series and, with the evidences of solar and astronomical forcing, I will make an attempt to predict the long term Monsoon rainfall of the Indian subcontinent.