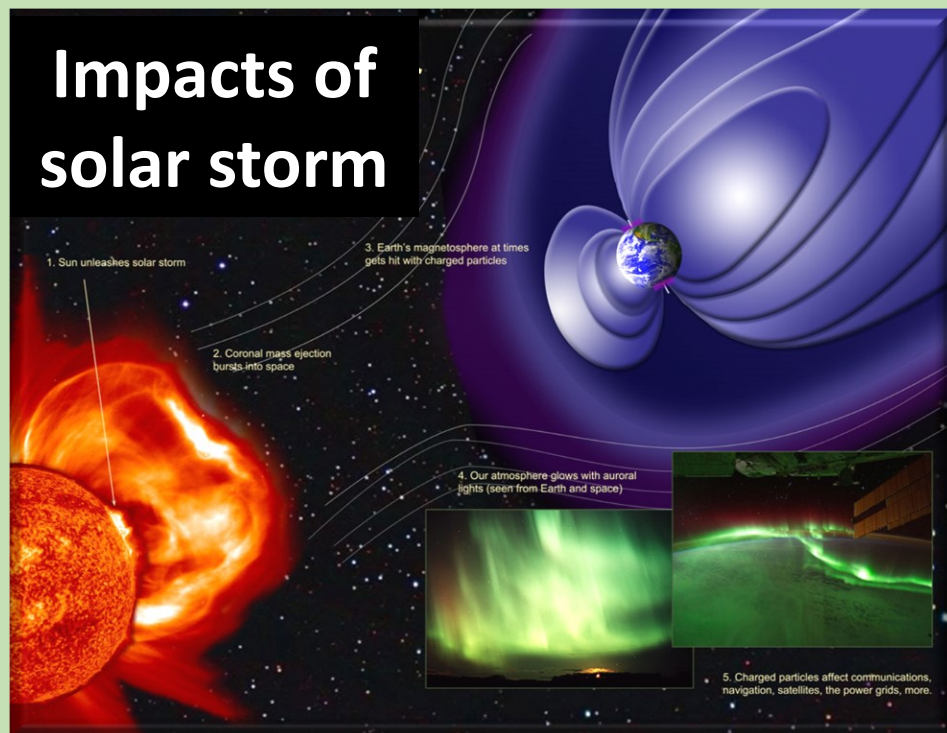


ASET Colloquium

by Dr. Pravata Mohanty, TIFR, on Friday, February 18, 2022 at 4 p.m.



YouTube Live Link: <https://youtu.be/7c13ms0FIaQ>

Dr. Pravata Mohanty obtained his M.Sc. degree in Physics from Utkal University, Bhubaneswar, and PhD degree from TIFR. He has been associated with the GRAPES-3 cosmic ray observatory at Ooty for the past 20 years and worked in all the major R&D activities undertaken for it including the development of plastic scintillator detectors and data analysis framework for fast and efficient analysis of the GRAPES-3 data. He leads the physics analysis efforts of GRAPES-3. He is currently the principal investigator of the GRAPES-3 experiment. Some of his recognitions are; IUPAP representative to the scientific committee on solar terrestrial physics (SCOSTEP) bureau. SCOSTEP is an international body to promote solar terrestrial physics and it is a permanent observer of the United Nations committee for peaceful uses of outer space (UNCOPUOS). He is a member of India's Mega science vision 2035. He served 3 times in the scientific program committee of the International Cosmic Ray Conference which is a flagship conference in the field of astroparticle physics.

SpaceX company lost 40 new satellites due to a solar storm that occurred on 4th February 2022. These Starlink satellites aim to improve and provide global access to broadband service. Solar storms (or geomagnetic storms) are triggered by coronal mass ejections (CMEs) from the Sun which are more frequent during the active phase of the 11-year solar cycle. CMEs are the main drivers of the solar storms which affect the space weather. Solar storms could cripple the global communication infrastructure, endanger the lives of the astronauts in space and disable worldwide electrical power grids. Starting with a brief introduction to solar storms, the talk will discuss the significant threats posed by them and some details about the 4th February 2022 event. The GRAPES-3 experiment at the Cosmic Ray Laboratory in Ooty, Tamil Nadu is home to the world's largest muon telescope. It had discovered a transient weakening of Earth's magnetic shield caused by a severe solar storm. The potentials of the GRAPES-3 experiment in studying solar storms and providing accurate predictions on their arrival will be discussed.