PIEAS COLLOQUIUM

PAKISTAN INSTITUTE OF ENGINEERING AND APPLIED SCIENCES

Science & Tech. Series

Return to the Moon and onwards to Mars

Mr. Mansoor Ahmed
Emeritus, NASA Goddard Space Flight Center.

PIEAS Lyceum

01.45 PM, Thu
May 02, 2024

Contact: Dr. Muhammad Shafiq Siraj, Coordinator PIEAS Colloquia
Phone: +92-51-959-3062, +92-332-894-1945
Email: mssiraj@pieas.edu.pk

Return to the moon and onwards to Mars!
NASA's Artemis Program

Mansoor Ahmed (Retiree)
NASA Goddard Space Flight Center, Greenbelt, Maryland

Abstract:

Mars has been a human fascination for several centuries. We now have several satellites orbiting this planed and some robotic rovers are also roaming around on its surface. Having a human presence on Mars is more than just curiosity and the spirit of exploration. To some extent, the fate of human race might depend on the ability of humans to live away from earth. Humans have lived in the outer space for more than twenty years now. But that experience is limited to the space station, space very close to the home planet. Mars is several orders of magnitude away from home. So, we need to take small steps towards achieving this objective. The logical first step is to return humans to the moon, which is only a couple of orders of magnitudes away from the space station, the limit of our experience.

NASA's Artemis Program, the latest endeavor in human exploration, is to develop the technical, physiological, and psychological capabilities to eventually inhabit the red planet. In this talk, Mr. Ahmed will cover the following topics:

- The objectives and goals behind the Artemis Program.
- The design process/approach for meeting the objectives.
- The overall architecture/infrastructure for enabling sustained human presence on the moon and Mars.
- The program chronology and sequence of enhanced capabilities
- Technical challenges to be resolved.
- Opportunities for conducting science (including cosmology) from the surface of the moon.

Speaker

Mansoor, recently retired from NASA, Goddard Space Flight Center was serving as the Associate Director of the Astrophysics Projects Division as well as the Program Manager for the Physics of the Cosmos program and the Cosmic Origins program at NASA Goddard Space Flight Center.

Mansoor has spent most of his career in serving the Hubble Space Telescope (HST) program in different capacities, including the Flight Operations Manager and the Project Manager for HST operations, and has played a key role in the Hubble repair missions. During a short stint away from HST, Mansoor has served as the Mission Manager for the Compton Gamma Ray Observatory De-Orbit mission, the Deputy Project Manager for the James Web Space Telescope and as the Project Manager for the Laser Interferometer Space Antenna (LISA) mission, a collaborative endeavor between NASA and the European Space Agency with the goal to develop capability to conduct astrophysics science by observing gravitational waves generated by massive objects in our universe, as predicted by Einstein.

Mansoor grew up in Peshawar and studied in PAF College Lower Topa before migrating to the US in 1970. Mansoor has a B.S degree from University of Maryland and M.S. from George Washington University, both in mechanical engineering. He has received the NASA Group Achievement Award, 2001; the Goddard Space Flight Center Group Achievement Award, 1995; and the NASA Exceptional Service Medal, 1995. Mansoor was inducted in the US government Senior Executive Service (SES) in 2007.