

International Cooperation for Space Exploration (1)
International Cooperation for Space Exploration (3) (3)

Author: Mr. Noman Subhani
SUPARCO, Pakistan, noman.subhani@gmail.com

PAKISTAN'S ROLE IN GLOBAL SPACE EXPLORATION- THE PAST, PRESENT AND FUTURE

Abstract

Space exploration is a multifaceted endeavor and a grand challenge of 21st century. The political agendas of a growing number of nations highlights space exploration as a goal and frame it as an international cooperative adventure. The objectives of the United Nations Committee on the peaceful uses of Outer Space (COPUOS) are to provide high quality, independent science input to support the development of global space exploration program. Pakistan is an emerging space nation with objectives to conduct peaceful research in space technology and promote the technology for socio-economic uplift of the country. Pakistan aims to contribute effectively towards Global Space Exploration with the joint-venture of other Members State.

In 1962, with the launch of the Rehbar-I rocket, Pakistan became the tenth country in the world to successfully conduct the launch of an unmanned spacecraft. Rehbar was series of sounding rocket launches into upper atmosphere and edge of space. Various sounding rocket models were launched by Pakistan approximately 200 times between 1962 and 1972. The Rehbar rocket series was an experimental rocket program which later played an important role in Pakistan's development of satellite program. Later, BADAR series satellites developed by SUPARCO (National Space Agency of Pakistan) were launched in Low Earth Orbit.

Pakistan's first Remote Sensing satellite PRSS-01 and indigenous technology Evaluation Satellite PakTES-1A became operational in 2018. Till now, Pakistan has successfully launched geostationary communication satellites and indigenously developed remote sensing satellites. In addition to that, many small satellite missions are under development.

This research paper focuses on Pakistan's contribution towards global space exploration and discusses past, present and future space exploration and innovation programs with the special emphasis on initiatives of Committee on the Peaceful Uses of Outer Space. United Nation's Report of the Committee on the Peaceful Uses of Outer is discussed as a model for developing sustainable partnerships and indigenous programs that support Pakistan's steady emergence as a global space-faring force. It highlights specific experiments done in space and discusses their outcomes to identify some exploration of behaviors of parts or materials in space. The role of international cooperation in building ambitious space-science programs, particularly in the context of developing nations is also presented. A framework to quantify the impact of international collaborations in achieving the space-science goals as well as in enhancing the key sectors of development of a nation is discussed based on case studies for a long-term collaboration between matured space-science programs.