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SALYUT AND SKYLAB - THE ORIGINS, DEVELOPMENT AND LEGACY OF THE FIRST SPACE
STATIONS

Abstract

It has been 53 years since the launch of the world's first space station 'Salyut', by the Soviet Union in 1971, followed later by NASA's first space station, Skylab in 1973. It was during the end of the sixties when it was evident that the space race to the moon was going to be won by the United States, that both space stations were given the approval to proceed by both the US and the Soviet Union. The extent to which the result of the race to the moon played a part in committing both these programs is examined with the arguments for and against being presented. As a result, the paper presents the origins and motives leading to the development of these two stations in the context of the prevalent environment at the end of the sixties. Of particular interest are the reasons why both programs were necessarily developed using the available resources of the Soyuz and Apollo hardware of the time. The key technical challenges in developing the stations are described and illustrated with key aspects of the many missions sent to both stations by both countries. The legacy, experiences and lessons learned from Salyut and Skylab are analysed to show how they have contributed to both the technical advancements and the modern-day policy models of international collaboration. This is exemplified by the success of the International Space Station, which has been through a multi-lateral collaboration of countries including the US, and Russia as the incumbent resulting from the break up of the Soviet Union in 1990. In conclusion, these pioneering space stations laid the foundations for long duration missions resulting in the essential knowledge and experience to undertake longer and longer missions in low earth orbit over the course of the next fifty years with to date, more than one year residency in space having been achieved. If the goal of landing a human on Mars is going to be achieved, then Salyut and Skylab can be remembered as the pioneers of long duration spaceflight.