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ASTRONAUT PROFILE EVOLUTION THROUGH TIME AND SPACE: STUDY OF THE PAST, CURRENT AND FUTURE REQUIREMENTS

Abstract

Since 60 years ago when the first person was sent in space, humanity has seen around 600 astronauts leaving the Earth for orbital adventures of short or long duration. Nowadays, this dangerous and harsh environment attracts more and more people. It is well illustrated by the recent growing space tourism activity, and their new astronauts, that don't need to go through the classical recruitment and training as it was done for the past missions. We could categorize astronauts into 3 categories: the public and private astronauts whose profile evolved a lot through the years, and tourists astronauts which appeared very recently. When recruiting public astronauts today, they must have a completely new set of skills like interaction with robots, experience with new tools and technologies, and even being good public speakers. Private ones also must comply with standards imposed by national agencies and thus their recruitment could be a bit similar, which differs from tourist astronauts that are not expected to have these specific skills.

In the frame of the DIVersity IN Astronaut Selection (DIVINAS) project which is part of the Diversity and Gender Equality Project Group from the Space Generation Advisory Council, a few members decided to take on the challenge of analyzing astronauts' profile through the years and compare these data with recent crews. This paper aims to observe the evolution of the key parameters and capacities required through the years since the first human in space, in 1961. During the past 60 years, humanity went through different phases like the cold war with the space race, sustainability and collaboration in space with the space stations, as well as the return to the Moon and preparation of future long trips to Mars. Some criteria of selection like the number of years of experience, the background of the applicants or the physical skills they have will be studied, as well as the skills a "great astronaut" should have. This paper will also compare the recent recruitments, both in private and public agencies, as well as the new project of inclusivity like the parastronauts project of the European Space Agency. Thanks to the insights of recruiters in private and public agencies, as well as the data found online about past and current astronauts, this study will focus on highlighting the astronaut profile of tomorrow, and the future needs and skillset researched during recruitments, for the future of human spaceflights.