

IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Human Spaceflight Global Technical Session (9-GTS.2)

Author: Dr. Ilaria Cinelli
Space Generation Advisory Council (SGAC), Austria, i_cinelli@yahoo.it

Dr. Krzysztof Kanawka
Blue Dot Solutions, Poland, krzysztof.kanawka@kosmonauta.net

TYPES OF ASTRONAUTS: HOW CAN I HIRE THE ONE I NEED?

Abstract

Over the next years, it is probable that human spaceflights will become more common than ever before. At least two types of spaceflights will become available to commercial customers and individuals: orbital and suborbital. Then, on the ground, human activities on the lunar or Martian surface are simulated in analogue missions by analogue astronauts as a way to anticipate outcomes while boosting research.

In this context, there is a gap that separates current formal astronauts from commercial astronauts, analogue astronauts and space tourists, and there is no connection between these last new types. Yet, there is not a direct link between a type of astronaut and its working duties. Although astronauts are at the core of future human exploration of space, it is hard to understand which is the right stage of the activity or of the mission to invest in the professional figure of a specific type of astronaut.

The word *astronaut* is a symbol that is evolving over time. Such evolution leads to associating a variety of meanings to one single word. In this decade, we are crossing the edge of a new era where those who will travel in space will have different mental and physical performance compared with that of formal astronauts. There is a need to identify the different types of astronauts for setting classes and requirements in order to establish rules of safety, health management, requirements set towards training and execution. It is an essential step towards the establishment of a system that provides international-accepted rules on hiring and risks that companies may be willing to take.

This work aims at understanding the fit of the current types of astronauts (governmental, commercial and analogue) in the current socio-economic context, and at identifying gaps between requirements or offer, the demand and the social expectations. In addition, the analysis reports an informative guide for identifying the type of astronauts needed for conducting activity based on the altitude, the health risks, costs and time. Finally, this work proposes the creation of an initial set of certified skills/requirements, which would become a standard for different types of astronauts.

The significance of this work lays on bringing clarity about *when* it is time to look for an astronaut, *which* type of astronaut is needed for conducting a certain task, *how* to include individuals with different performance in human activities in space, and *what* to do for hiring more.