

IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Commercial Human Spaceflight Programmes (2)

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WHAT GOES UP MUST COME DOWN: CIVILIANS, COGNITION AND CENTRIFUGAL FORCE
ON THE EVERYDAY ASTRONAUT**Abstract**

Space for all is the vision for commercial space tourism. In 2021 maiden voyages were embarked upon by all major 'space - lines' and in this very decade spaceflight is set to become more accessible to the everyday person than ever before. However, the cost of space tourism cannot be made feasible with the inclusion of astronaut level training for a mere few minutes of space travel. The reality of space tourism comes rife with the harsh environmental exposure to space travel and then space which will become increasingly experienced by civilians with average capabilities for coping physically, mentally, and emotionally. Liability and litigation can quickly dampen the dreams of commercial space travel before it can become fully viable as a consumer product. Focus needs to be placed on understanding the effects of the various challenges of space travel and the space environment on the average human physique. To cement the vision for Space for all humankind these challenges must be solved to ensure the success of this next endeavour for humanity. This paper presents the findings of a study conducted on an unavoidable component of space travel - the experience of High G forces on the human body. Results from lab-based centrifuge experiments undertaken up to 3.5G in lab conditions are presented with a human centred approach in data collection on untrained civilians up to 90s in exposure with 0.5G increments. The effects of exposure on cognitive performance, psychology and physical health are presented with the findings applicable to the exposure of a general population to a high stress activity such as space flight.