

Psychology of Space Exploration

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Contemporary Research in Historical Perspective



Edited by Douglas A. Vakoch
NASA, 2011
hardcover, 264 pp., illus.
ISBN 978-0-16-088358-3
US\$27.00

Published under the NASA History series in July 2011, the book explores the current thinking on psychological issues affecting space flight experience, analyzes the history of behavioral studies relating to space and publishes original research on the therapeutic effects of photographing Earth from space and managing negative interactions. The book was edited by Dr. Douglas A. Vakoch, a licensed psychologist in the state of California, professor of Clinical Psychology at the California Institute of Integral Studies and director of Interstellar Message Composition at the SETI Institute.

This publication takes place at a time when a crewed Mars mission is under scrutiny, and more attention is focusing on the ability of astronauts and cosmonauts to withstand the psychological pressures of an 18-36 month space mission. The recently completed Mars 500 experiment, focusing on the effects of isolation and limited and uniform society in a confined living space, is an

example of an analog environment, discussed extensively in Dr. Sheryl L. Bishop's Chapter 3 "From Earth Analogs to Space: Getting There from Here".

Analog studies are a fundamental tool in psychological research on long duration space missions because of the lack of statistically significant numbers of astronauts and cosmonauts who have endured extended stints in space. Bishop points out the need to assess analogs specifically from a behavioral perspective. As an example, she questions the appropriateness of Palmer Station, Antarctica, as a psychological analog, where researchers spend the majority of their time conducting their experiments in solitary, in stark contrast to the ISS, where crew members are challenged to find time away from their colleagues at any time of day or night.

The book explores the history of Psychology in the space programs of the United States and former USSR. According to the authors, US reluctance to permit psychologists to gather data on astronauts' performance, for fear of tarnishing NASA's image and "Right Stuff" veneer, is slowly changing, but the US has a long way to go before reaching norms established by the USSR in using psychological methods not only to

screen cosmonaut candidates, but also to monitor their performance on an ongoing basis, utilizing techniques such as voice analysis during space missions. Other national agencies, notably ESA and JAXA, have followed Russia's lead in this regard.

In Chapter 4, "Patterns in Crew-Initiated Photography of Earth from the ISS", Julie A. Robinson, Office of the ISS Program Scientist in NASA JSC, and her collaborators present original research exploring the therapeutic effects of crew-initiated Earth photography on crew psyche. Although often reported anecdotally, this is one of the first times objective research in this arena has been presented. The authors particularly raise the question of what substitute activity may be appropriate for deep space missions in which crew will have no view of Earth or any other planet for months at a time.

Noticeably missing from Psychology of Space Exploration is any discussion related to sexuality. Especially on long duration missions, this is an issue that is bound to arise, yet space agencies seem reluctant – at least publicly – to investigate and discuss the subject at all. In this regard Psychology of Space Exploration toes the mark.



NASA astronaut Tracy Caldwell Dyson observing Earth from the Cupola module of the International Space Station. Earth observation and crew-initiated photography of Earth from the ISS is regarded as therapeutic for ISS crews. - Credits: NASA