

## Preface to the Second Edition

Over half a century ago, humankind first entered space when Yuri Gagarin became the first person to orbit Earth on April 12, 1961. Soon afterward, the United States launched its first manned mission to space, and in 2003 China became the third nation to send a human into space. Over the years, spacefarers from over three dozen countries have flown in space in missions that demonstrate increasing international cooperation. *On Orbit and Beyond* details how the psychological demands of space missions have changed over the decades, requiring increasingly talented and flexible astronauts.

The first missions into space were typically brief, lasting only hours or days, and crews were small. The early years of space exploration were marked by competition between the United States and the Soviet Union, and the astronauts who showed “the right stuff” were not only courageous explorers of this new frontier but heroes back home. As an intensely competitive space race has given way to international cooperation over the decades, the challenges of communicating across cultural boundaries and dealing with interpersonal conflicts have become increasingly important, requiring astronauts to develop additional coping skills and sensibilities.

The psychological stresses of living and working in space are considerable. In the early days of space exploration, short-duration challenges were faced by close-knit crews from the same country. Over the years we have seen increases in both the duration of space missions and the size of crews, as the Soviet Union established permanent space stations, the United States conducted its Space Shuttle program, and a truly transnational effort gave rise to the International Space Station. As crews more frequently included spacefarers from multiple cultures and missions became longer, the challenges of living in space highlighted the need to examine the psychological dimensions of space exploration in even greater depth.

*On Orbit and Beyond* includes chapters updated since its first incarnation, which was published by NASA as *Psychology of Space Exploration: Contemporary Research in Historical Perspective*. This revised edition has twice as many chapters as the first edition, with new chapters in every section. In short, this new edition provides a more comprehensive analysis of the challenges of surviving and thriving

in space, as spacefarers deal with the complexities of working effectively with astronauts from other cultures under interpersonally demanding circumstances.

With an eye to the future, *On Orbit and Beyond* closes with a new section that explores how tomorrow's astronauts will handle the increased autonomy they will face on missions to Mars and beyond. This expansion of attention from Earth's orbit and the Moon to more distant destinations is a response to changing national priorities for space exploration. For example, in 2010, the Obama administration announced a new target for American astronauts as they travel beyond Earth's orbit. Rather than establishing a permanent lunar colony, as had been planned previously, NASA is making plans for a manned mission to an asteroid by 2025. By this timeline, a successful asteroid mission will help prepare for a trip to Mars some years later.

A mission to the red planet would take 2 years, with no chance of quickly returning to Earth if emergencies arise—a prospect that astronauts have never had to face before. In *On Orbit and Beyond*, leading space psychologists and psychiatrists provide guidance for coping with such future missions to asteroids, Mars, and beyond—drawing on lessons learned from past missions to the Moon, long-duration stays on space stations orbiting Earth, and analog environments on Earth.

# Preface to the First Edition

Each month, the cover of *Monitor on Psychology*, a magazine sent to over 100,000 members of the American Psychological Association, reflects intriguing new areas of interest to psychologists who work as researchers, clinicians, consultants, and teachers. The importance of human adaptation to space for contemporary psychologists is suggested by the cover of the March 2008 *Monitor*, which featured an astronaut drifting in space, with the tranquil blue Earth in the background and the caption “Deep Space Psych” below.

At one level, the essays in this volume provide an overview and synthesis of some of the key issues in the psychology of space exploration, as well as a sampling of highly innovative empirical research. The characteristic that most clearly sets this collection apart from others, however, is the depth with which the authors have engaged the *history* of the psychology of space exploration.

All psychologists are familiar with the importance of engaging past research and theory while conducting literature reviews in preparation for designing and interpreting new studies. But the contributors to this collection have done much more. They have crafted essays that will be of obvious value to psychologists, psychiatrists, and other behavioral researchers. At the same time, these authors have created a collection with the promise to promote a greater dialogue between psychological researchers and both historians of space exploration and historians of psychology.

Psychologists and historians have quite different criteria for good scholarship and for communicating their findings. These differences make the essays in this volume—meaningful and accessible even to those not formally trained in psychologists’ methodologies and mindsets—all the more impressive. With the increasing specialization and isolation of academic disciplines from one another over the past century, these essays serve as a prototype for a broader attempt to bridge the gap between the two cultures of science and the humanities that C. P. Snow identified almost half a century ago—quite fittingly for us, near the beginning of the Space Age. Let us hope that as we prepare once again to send astronauts beyond Earth’s orbit, we can do so with the guidance of others equally open to seeing beyond their own specialties.

On Orbit and Beyond

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