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Review of *Spacewalker*

Barrett Caldwell

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Spacewalker: My Journey in Space and Faith as NASA's Record-Setting Frequent Flyer, by Jerry L. Ross with John Norberg, 978-1-55753-631-0, \$29.95.

Since its founding over 15 years ago, *JHPEE* has always had a focal emphasis on human performance in space. Thus, it is no surprise that we would want to highlight a new book from astronaut Jerry L Ross, who has set records for launches and spacewalks with NASA. However, there is always more to an astronaut biography, as we have learned since the days of *We Seven*. Our interest in an astronaut's life and experiences helps us to see the answers to four different questions, which tell us different things about this most unique of human performance environments.

What are astronauts like?

We all think we know the answer here: astronauts are brilliant, driven, focused, intense folks. They are calm in the face of danger, comfortable at the edge of human and technological capability. Astronauts are some of the most iconic persons of our age, and we want to know more. There is no single sort of astronaut—autobiographies from John Glenn: A Memoir, through Chris Jones' Too Far from Home, Tom Jones' Skywalking, and Mike Mullane's Riding Rockets show that, like other communities, astronauts have variety. They are not all the same, and if you ask some astronauts, they may even tell you which ones they favor as compatible or effective teammates. Ross describes his own personality, as well the personalities of other astronauts he has flown with and interacted with as the crew liaison. With seven Shuttle missions to his credit, and interactions as lead of the Astronaut Support Personnel effort at Kennedy Space Center, Ross has more experience about the range of astronauts than just about anyone else. This is one of the things that makes Ross' story valuable—he speaks of the range of people that make up the Astronaut Office, both in good times and in bad. His descriptions of the Office in the aftermath of the *Challenger* and *Columbia* accidents are especially human and sensitive.

What's it like to be an astronaut?

Ross provides two distinct answers to this question—what it is like to go into space, but also what it is to have “astronaut” as your job description. Most of us only experience the public view of that job description from the outside—the folks in the blue flight suits, and the pictures and videos from the Shuttle or Space Station. I do love *Spacewalker* because of its ability to demonstrate the other

aspects of that description. Astronauts spend most of their time *not* flying. What else are they doing? Training. Performing desk jobs. Making public appearances. Going to church and meetings and sporting events with their spouses and kids. We learn about all of these, and this helps us remember the human-ness of being an astronaut.

Ross' descriptions of the life of an astronaut shift back and forth in time, and they also include anecdotes and insights from wife Karen, daughter Amy, and son Scott. It is more like sitting down on a summer evening in Indiana with a glass of lemonade and telling stories. (Since Jerry and Karen are native Hoosiers—he's from Crown Point, she's from Sheridan—this is not surprising.) One of my favorite quotes of the entire book is from Scott, and it points out the reality of being an astronaut who is also a “down-to-earth” father, husband, and employee:

When I was a kid, my dad never seemed out of the ordinary to me. Being an astronaut was his job. It was pretty special to have a dad doing all this stuff, but still, he was plain old Dad. He'd come home from a spaceflight, and he'd be out mowing the yard the next day. You don't think about astronauts coming home from space and mowing grass.

I asked him all the time what it was like. We'd sit down and talk, and I'd listen to him explain everything. He always said it was an amazing experience, something you really can't fully understand unless you've been there.

Interestingly, Scott is the only one not in the “family business”; the Rosses do qualify as a “first family of spaceflight.” Karen served as a nutritionist at Johnson Space Center (JSC), designing meals for Shuttle astronauts, and Amy is a mechanical engineer (also at JSC) who works on

space suit gloves and other aspects of this critical protective layer between a human and the harsh, cold vacuum of space. I find myself incredibly lucky to have met and interacted with Jerry, Karen, and Amy; I appreciate the story even more because we hear all of these perspectives.

What's it like to become an astronaut?

Ross started out like many other kids in the Space Age. He was impressed by science, technology, engineering, and mathematics (the STEM disciplines), and he saw that as a ticket to a fulfilling and meaningful life. His dreams of going into space were influenced by local heroes (Gus Grissom, from Mitchell, Indiana) and unique opportunities (Purdue University, just down the road from his hometown). But the journey to becoming an astronaut is much more complicated, and it has many more twists than our traditional linear view of the success of people whom we admire. Instead of just hearing the experience of *being* an astronaut, Ross provides readers with a unique and personal view of *becoming* an astronaut.

It is hard to overstate my response to this aspect of *Spacewalker*. I wish I had heard these stories in 1984 or 1994, when I was considering my own application to the Astronaut Office. Ross points out that one need not be a perfect candidate; it wasn't until after being accepted as an astronaut candidate that he managed to get through the swim test requirement (a fascinating admission, in itself). It doesn't always work the first time one applies—persistence and adaptation to conditions and situations are critical. And here we learn one of the more valuable lessons that someone like Jerry Ross can tell us—not just about becoming an astronaut, but about living in general. It is about resilience and dedication to one's dreams and principles. Ross highlights his faith, his relationships with family, and his willingness to take a less-travelled, less-specified pathway that leads to somewhere amazing in the end. These are important lessons for all of us. We see them now in Ross' story because of where they led: a role in constructing the International Space Station (ISS), the most impressive engineering marvel of this or any age. But it is the journey, the becoming, that all of us can learn from, even if we don't all manage to leave the planet.

What's it like to work in space?

As Ross and other astronauts take pains to express, it is hard for mere words (or even pictures) to describe fully the

experience of living in and experiencing space. It is indescribably beautiful and humbling. It is paradigm-shifting and transcendent. It is incomparable to most other aspects of human endeavor.

And yet, Ross points out the elements of what it is like to *work* in space—to perform extra-vehicular activities (EVAs), test new equipment, and adapt to changes in schedules and priorities. Ross was instrumental in creating and validating many of the EVA techniques essential to ISS construction. It is hard work, even in microgravity. As described in Chapter 5 (“Liftoff! We have Liftoff!”), two essential technology evaluations were performed on STS-61B; EASE and ACCESS, candidates for how astronauts could construct large structures in space. Of course, no new technology designed to perform unprecedented tasks in an unknown work setting can be expected to work perfectly the first time it is used. Revisions and even complete redesigns may be necessary; work tasks may need to be modified or scrapped at a moment's notice. Thus, these flight tests are essential for enabling astronauts to conduct EVA work with increased efficiency and performance, and a minimum of mission risk.

We at Purdue University are very fortunate to house the Barron Hilton Archives for Flight and Space Exploration of several astronaut alumni in our Library Special Collections, including Ross' papers and videos from his missions. Because this is an electronic journal, accessing those videos is even easier, and provides us with additional insight into the challenges and experiences of human performance and work in the spaceflight environment.

See a video of Ross and Jay Apt conducting several tests of prototype equipment here: http://youtu.be/ly3kEaU-e_o.

Summary

Jerry Ross is someone you'd expect to find in a grocery store or playing with his grandchildren. It can be a surprise when you also learn that he has schools named after him—he's unassuming, matter-of-fact, and very much an Indiana native . . . who happens to have an unsurpassed role in the history of American spaceflight. (We also like having him on our masthead of JHPEE.) *Spacewalker* is a valuable and wonderful description of that journey, and an important set of insights for all of us who ever wanted to go to space . . . and those who want to live a meaningful life here on earth.