

NASA JOHNSON SPACE CENTER ORAL HISTORY PROJECT

ORAL HISTORY 2 TRANSCRIPT

SALLY K. RIDE
INTERVIEWED BY REBECCA WRIGHT
SAN ANTONIO, TX – 6 DECEMBER 2002

The questions in this transcript were asked during an oral history session with Dr. Sally K. Ride. Dr. Ride has amended the answers for clarification purposes. As a result, this transcript does not exactly match the audio recording.

WRIGHT: This oral history session today, with Dr. Sally Ride, is for the Johnson Space Center Oral History Project. Today is December 6, 2002. It's being held in San Antonio, Texas. Interviewer is Rebecca Wright, assisted by Sandra Johnson and Jennifer Ross-Nazzal. This is part two of Dr. Ride's oral history. The first part was conducted on October 22, 2002, focused on her days with the NASA Johnson Space Center.

Today's session reflects her efforts with the space agency while at NASA Headquarters, [Washington, D.C.]. After serving on the Rogers Commission, you moved from Houston [Texas] to Washington, D.C., where you were involved in strategic planning. Later you served as Assistant Administrator of Exploration. Could you discuss with us those duties and how you transitioned, then, from one job to the other, and what you were doing while you were at Headquarters.

RIDE: One was a natural outgrowth of the other. When I started at Headquarters, I was the Assistant Administrator for Long-Range and Strategic Planning. No one was quite sure what this meant—no one had held that position before—so my staff and I spent some time defining our role. We started by reviewing all the studies that had been done, either by NASA or for NASA, over the previous ten years. We wanted to see what was lying on the shelf already, what

recommendations had been made, what consistencies there were in the recommendations, and whether the recommendations had been followed. That give us the context to begin NASA's planning activities.

After we had catalogued and reviewed previous studies, we discussed them with the chairs of committees that had produced each one. Then, we began a process of long-range planning, which evolved into a strategic planning process for all of NASA. We worked with every Center, contacted every Center director, had each Center director identify two or three people at their Center to work directly with us and to work with their Center, to start a bottoms-up strategic planning process throughout NASA.

Each of the Center representatives organized a process at their Center, to involve employees there in a discussion of NASA's long-range objectives. Our initial focus was, "What should NASA's goal—or goals—be over the coming decade?" We began that broadly to encourage a variety of ideas and encourage people to brainstorm and discuss their view of the future of the U.S. space program and their view of what "leadership in space" meant.

That dialogue went on at every NASA Center, then results were presented to the group I chaired. Over the course of many months, we distilled the ideas down to four initiatives. We then evaluated and discussed those initiatives: robotic exploration of the solar system, "Mission to Planet Earth," a permanent lunar outpost, and human exploration of Mars.

We evaluated each of the initiatives in our final report and made recommendations on each. The whole process culminated in a report called "NASA Leadership and America's Future in Space: A Report to the Administrator."

At the culmination of that report, it was very obvious to us that NASA didn't have an organization that was set up either to continually refine the strategic planning process or to take a

forward-looking approach to human exploration. The Office of Exploration was set up to look at long-range exploration initiatives and produce relevant studies on human exploration—whether of the Moon or of Mars. After the first round of our strategic planning process was complete, I became the first Director of the Office of Exploration.

WRIGHT: How was your report received by colleagues?

RIDE: It was received very well. We testified before Congress, and we briefed it widely to the National Research Council, the President's Science Advisor, and a variety of other groups.

There were several things that came out of it. One was NASA's Mission to Planet Earth; another was the Office of Exploration. It also resulted in more emphasis on long-range exploration within the agency.

WRIGHT: Were you able to help implement any of those plans and initiatives, or was your report issued about the time that you were getting ready to leave the agency?

RIDE: I was able to follow those initiatives for a while. I spent time with the technology division, working with them to understand what our report meant to them. And I worked quite a bit with Mission to Planet Earth.

But I left the agency shortly thereafter. Most work that I did after the report was issued was setting up the Office of Exploration.

WRIGHT: You returned to Stanford [University, Stanford, California] after you left the agency, and since then you've been active in a number of areas. We'd like to talk to you about some of those areas, but before we do, we would like to know if you could possibly tell us what your most challenging milestone was while you were working with the space program.

RIDE: I think my biggest challenge was just trying to breathe right after the engines ignited on my first launch! It's hard to say what my most challenging milestone was. The space program is wonderful in that it is a series of challenges and a series of very interesting and very rewarding experiences.

WRIGHT: Do you find it difficult to pick out one that you would consider the most significant accomplishment that you made while you were at NASA? Is there something you would like to consider that you left as a legacy for others to see?

RIDE: It is, because I think it depends on the way that you interpret that question. Certainly my most significant legacy will be that I was the first American woman to go into space. That's very rewarding for me. And the more time that passes, the more I appreciate that.

But some of things that I'm very proud of are my work on the robot arm, my work as a CapCom [Capsule Communicator], of course my two spaceflights, and the report that I did for NASA Headquarters.

WRIGHT: As I mentioned, you went back to Stanford and got very active, of course, working there. You also were very active in a number of other areas, a lot of them dealing with children.

We'd like you to comment on some of those. For instance, KidSat. Can you tell us how you got involved with that?

RIDE: EarthKam, then called KidSat, started when I was a physics professor at University of California, San Diego [La Jolla, California]. I was talking with some colleagues at [NASA] JPL [Jet Propulsion Laboratory, Pasadena, California]. We came up with the idea of putting a camera on board the Space Shuttle, aimed at Earth, that could be controlled by middle-school kids from their classrooms.

The moment we hit on the idea, we knew that it was a good one. It combined just the "gee whiz" of the space program with the actual hands-on involvement for the kids. We described it as, "Giving Kids a Piece of the Space Program," because it allowed them to feel like they were participating in a very real way. It was their camera; it was on board the Space Shuttle, and they were the ones operating it and controlling it.

We engaged undergraduates at UCSD to translate the "NASA-ese" of mission control and the Space Shuttle for the kids, and then send the kids' commands up to the Space Shuttle.

It's a tremendous program. The camera eventually moved from the Shuttle to the Space Station, and now it's called ISS [International Space Station] EarthKam. The program has been around now for several years, and it's really making an impact.

WRIGHT: You've also written a number of science books for children.

RIDE: Yes.

WRIGHT: Could you share with us how you were able to do that?

RIDE: I wrote the first one shortly after my second flight. It was called *To Space and Back*, and it's about what it's like to go on a Space Shuttle flight. I wanted to write it for kids—ten-, eleven-, twelve-, thirteen-, fourteen-year-old kids—because I'd been doing a lot of speaking, and it was really obvious that kids are fascinated by the space program. They love hearing about astronauts, about launch, about weightlessness. The book is a good way to encourage their interest in science and teach them a little bit while they're not looking.

I got together with an old friend from high school, who was a writer, and she and I co-authored that book. It came out in 1986. A few years after I left NASA, a different publisher called me up out of the blue and asked me to do another book for kids—this one on the Voyager spacecraft. I liked the idea and began collaborating with a different co-author, also an old friend from childhood, on that book for Random House. She and I have since written three books with a fourth one is coming out in fall of '03. All are for kids around middle-school age: *The Voyager*, *The Third Planet: Exploring Earth from Space*, and *The Mystery of Mars*. The one that's due out in 2003 is called *Exploring the Solar System*.

WRIGHT: Sounds fun.

RIDE: It is.

WRIGHT: Speaking of new ways to inform and educate, you became part of a Space.com era. How did this opportunity come about?

RIDE: That was really by chance. I was at University of California, San Diego, teaching a physics course. It was spring of 1999. Lou Dobbs retired from CNN [Cable News Network] and announced out of the blue that he was starting Space.com.

I was fascinated with the idea and talked to him find out more about it. He said, “If you’re interested, and you want to hear more about it, why don’t you come meet with me next time you’re in New York, [New York].”

I did. As it turned out, I was going to New York three or four weeks later. The more that I talked to him, the more I liked the idea behind it. The vision at the time was to create a website that catered to everyone who had an interest in space—for whatever reason. It would be for kids interested in the space program, people who loved science fiction, the commercial aerospace community—everyone who had an interest.

I loved the idea of it because I knew, living out in California, how hard it was to find out what was going on back in Houston and back at KSC [Kennedy Space Center, Florida]. Just try to do that reading your local newspaper! You just can’t keep up with the space program. So, having a website where you can just log on and get all the information about where was the Shuttle on its way to the pad, or what were the astronauts doing in orbit that day, seemed like a really good idea to me. He basically convinced me to join the company.

WRIGHT: How long were you with the company?

RIDE: I was with the company for about a year and a half. I didn’t move to New York. I was commuting—staying in a hotel during the week to work there. I joined the Board of Directors

right away and was initially the Executive Vice President for Strategic Planning. Shortly thereafter, I became the president of the company.

WRIGHT: That's quite a difference of strategic planning for NASA. Now you're doing it for a website.

RIDE: It was quite different.

WRIGHT: Put some of that same strategy into the strategic planning.

RIDE: Exactly.

WRIGHT: Why did you leave?

RIDE: I left for a variety of reasons, actually. One was that I had only taken temporary leave from the university and wanted to get back to it. (I had retained my position at the university.) Also, New York City is a long way from San Diego, where I live; I did not want to move from San Diego! I was doing a lot of commuting, and did not want to move to New York. And it was pretty clear that Space.com was not going to be opening a West Coast office anytime soon.

I had wanted to get back to teaching and research, but the last couple months that I was there, I started thinking more and more about doing something that was focused more on girls and education than Space.com was. I started talking with my friends and several of us decided to

form Imaginary Lines, Inc. That became part of the impetus to leave Space.com to get back out to California and start up Imaginary Lines.

WRIGHT: Tell us about Imaginary Lines. We're all very interested in how that moved from an idea into the reality that it is today.

RIDE: The motivation behind it grew out of the lives of the founders. Most of us are women who are either scientists or engineers and grew up as girls interested in science. We went through college in a minority in our science or engineering classes, then were even more in the minority when we entered the professional world of science and engineering. I had spent a lot of time talking with groups of girls and groups of high school students, college women, and professional women, and had become very attuned to their interests and needs.

We were all very well aware of the issues and were particularly struck by the realization that in elementary school there are the same number of girls interested in math and science as boys, but starting in middle school, that starts to change. Girls move away from science and math in numbers greater than boys do—but not because they're not good at it and not because they're not interested in it. This happens for a variety of reasons, most cultural or societal. It might not be cool for a girl to be the best one in the math class. A girl who says she wants to be a rocket scientist might get a different reaction from friends and teachers than a boy who says he wants to be a rocket scientist.

There are still lingering stereotypes—not nearly what they were in the 1970s and 80s, but, they're still there. When you turn on the TV, any engineers you see are apt to be male, not female. When you open the newspaper, you read about male engineers, not female engineers.

As a result, twelve-year-old girls don't really think of those areas as possible careers. We thought that there was an opportunity here, because coming out of elementary school, lots and lots of girls like science and math. We thought if we could capture that enthusiasm, that fascination, before they lose it, then maybe we could inoculate them against some of the stereotypes and keep more of them in the pipeline.

We thought the key to that was to create science-related events, programs, and activities that they would think were fun, that they'd want to go to with their friends, and that they'd think were cool. We wanted to show the girls that there are lots of other girls like them who have these interests and introduce them to women engineers and scientists who love what they do, and put a female face on those careers.

That was the philosophy behind Imaginary Lines. We think that we've really tapped into something. We're getting a great reaction to our events and activities, both from the girls and from their parents. We think that the time is right for this.

WRIGHT: How long have you had Imaginary Lines operating?

RIDE: It was formed in early 2001. We got our first funding in September of 2001, so it's just a little bit over a year that we've been offering programs and events. We did our first Science Festival, for example, a year ago October.

WRIGHT: A couple of decades ago you were named in the news media as a role model for young women, and now you've stepped into that full action. Was there something just recently that

helped you move even further into this role, or [did you] just feel like the timing was right to do this?

RIDE: The timing was right. There wasn't any one specific thing that triggered it. Maybe I had just lived long enough. I thought that this was something that was really worth using my name and using the visibility that I could bring to it. It felt worthwhile. When we started seeing the reaction of girls and their parents to our programs, it started feeding on itself, and we drew our energy and encouragement from them.

When we started the company, there were a lot of people that we talked to, a lot of people who said, "This is not a business. There aren't any girls interested in math and science. Where are you going to find people to come to your festivals? Where are you going to find these girls? All you need to do is look around the workforce. There aren't very many women in engineering, so there can't be many girls who are interested in math."

We said, "That's not right. We know that's wrong." So we've taken some pleasure in proving them wrong.

WRIGHT: And you've given them a tangible person to touch, whereas before it was just an image. So they can do that. It's got to be very rewarding for you to be able to feel the excitement from those girls.

RIDE: It's very rewarding to feel their excitement and to see their reaction to the women professionals we bring to the festivals. One of the things we're trying to do is raise the visibility of other women scientists and engineers on a local, personal level for these girls, and then on

regional and national levels, too. We want to make the world in general, and twelve-year-old girls in particular, aware of the women who are actively involved in science and engineering.

WRIGHT: Your life certainly is full of balancing education and advancement and enrichment for young girls, and it sure keeps you busy from moment to moment.

RIDE: A little too busy.

WRIGHT: And what a challenge, from talking to students on a college level, with physics, and then coming back and talking to elementary school students on a level that they can talk, too.

RIDE: You'd be surprised. [Laughter]

WRIGHT: Before we finish today, I was going to ask Sandra and Jennifer if they had any other questions that we hadn't had a chance to ask you while we had you in these sessions.

ROSS-NAZZAL: I had a question. When you went out to Headquarters, what was it like working out there? And could tell us how different it was from working at JSC? Can you make some comparisons between the two?

RIDE: Not on tape. [Laughter]

ROSS-NAZZAL: Maybe a different question. We were talking with an astronaut earlier this week who kept referring to how the astronaut corps changed over time, from when he started in 1978. He was talking about how, in the beginning of the Space Shuttle program, astronauts, in particular, were very involved in all the different processes, and working with the contractors. I'm wondering if it changed at all by the time that you had gone up on your second mission, and [if] you could talk about that.

RIDE: It was starting to change by the time I went up on my second mission. It was definitely changing by the time I left NASA, or even by the time of the *Challenger* accident. That was the period of transition. When my group came in in 1978, there was a lot of work still to be done with the contractors on the Space Shuttle itself, everything from the testing of the main engines to the developing of procedures—the malfunction procedures, the abort procedures, the Remote Manipulator System procedures. Mission control had never controlled a Space Shuttle flight, so all the procedures, including CapComs working with flight directors was in the process of being worked out.

We were heavily involved in all those things—there was a lot of work for the astronaut corps to do. I spent over a year as one of two or three astronauts working on the robot arm. Then, as time went on, the robot arm was developed, tested, and working. All the procedures had been developed, and the arm had flown in space several times, so there was less work for the astronaut corps to be involved in between missions. There were also more astronauts being brought into the astronaut corps—so there were both fewer tasks and more people to accomplish the tasks remaining.

The astronaut corps was slowly getting larger, and now it's much larger than it was. I think when I was there it was around 100, maybe a little bit less. I'm not sure what it is now, but it's around 140, 150, which is significantly larger. So fewer technical jobs that really need doing and more astronauts. We could see things changing by the time I left.

ROSS-NAZZAL: Do you think it was detrimental to the corps if the astronauts weren't as involved in the Space Shuttle Program?

RIDE: That's a good question. I'm probably not in a position to answer that, just because I wasn't in the corps once that transition had been completed. I benefited from the on-the-job training and getting deeply involved in not one, but a few different projects. So I don't know how the corps is different now, with astronauts coming not having that same experience.

ROSS-NAZZAL: Okay. Thanks.

JOHNSON: I don't think so today. Thanks.

RIDE: Okay.

WRIGHT: Is there anything else that you would like to add about your NASA career, things that we haven't covered? We've tried to cover your missions and experiments and different types of experience, but didn't know if there was anything else that we didn't touch on that you would like to talk about. Especially any kind of—some personal sacrifices. We did talk about your

private life sometimes being talked about in the press. I didn't know if there was other sacrifices that you had made, or maybe you had wanted to do something other than what NASA pulled you into, but yet you—

RIDE: Are you kidding? [Laughter] No, I think I'd only add one thing that I don't think we touched on this last time. There was one person who was very important to me at JSC, and it was Carolyn [L.] Huntoon. When I was going through the application process, Carolyn was on the selection committee. At the time, she was a Ph.D. biochemist in charge of a small group, but was the highest-ranking technical woman at JSC—therefore deemed to be the expert on everything related to women at JSC. She was the only woman on the selection committee, and it was a large selection committee. Once we arrived, she became almost the de facto liaison to all of the women astronauts; she became a very good friend to all of us and a very important person—especially in helping us steer our way through the first couple of years that we were there.

If we ever had any problems, we all knew that we could call Carolyn, and we did! This was even as she was rising up through the ranks at JSC and becoming a more and more important person. She was always the person that we could call, and she would always help us solve any problem, no matter how small.

So she's one of the very few people, that I think I owe my career to. She had a long and distinguished career at NASA that had an unfortunate end. If you haven't talked to her yet, you definitely should.

WRIGHT: We have, and she's mentioned as well that—we were talking about the selection committee and her opportunity to be on there when women were made part of the system.

RIDE: I would hate to think what it would have been like for the six women in our class if she hadn't been there before us, been part of the selection committee, and then been there for us once we arrived. She made our lives much, much easier.

WRIGHT: That's good. I'm sure she'll be glad to hear that as well.

RIDE: Good.

WRIGHT: We'll conclude for the day. Thank you so much, again, for taking the time.

RIDE: Oh, sure.

[End of interview]