

Jeff Shesol: When Kennedy ran for president, he came out strong on space. And he said, "If the Soviets control space, they will control earth. And if we are second in space, in the eyes of the world, we will be second in science and technology, in military power, and in the struggle between freedom and totalitarianism."

[MUSIC INTRO]

Liz Bowyer: We're joined today by Jeff Shesol. He's a historian and author, most recently of *Mercury Rising: John Glenn, John Kennedy, and the New Battleground of the Cold War*. So, welcome Jeff.

Jeff Shesol: Thank you. Thank you so much.

Liz Bowyer: So, just to start, Jeff, give us a sense of Project Mercury and how it was shaped by the tensions of the Cold War.

Jeff Shesol: Project Mercury, interestingly, we remember Mercury as full of heroics of one kind or another and heroes like John Glenn. But at the time it was announced in the fall of 1958, President Eisenhower just signed the bill creating NASA. And a component of NASA would be this, as they called it, "Man-in-Space Program." They would often hyphenate it, man-in-space. It was a single term. And that was Project Mercury.

And when it was announced by the first administrator of NASA, a guy named Keith Glennan, he so undersold the idea of Project Mercury that the Washington Evening Star put the news on page A10. On page A1, I found that day there was a story about Fairfax County, Virginia, and whether residents there, citizens who lived in Fairfax County would be able to shoot stray cats who wandered onto their property. The answer is no, they're not actually allowed to shoot stray cats. But that was front page news. Mercury was on page 10. And that fact reflected the obvious ambivalence that the Eisenhower administration had about Project Mercury.

They had taken the man-in-space programs that existed, there were multiple programs, from the Armed Services. The Air Force had its own program. The Army, the Navy, they all had plans to send human beings, men all, of course at the time, into space for one reason or another. And the rivalry was heating up.

And so, Eisenhower pulled all these programs into NASA and created Project Mercury. But he was never interested, particularly, in sending human beings into space. As Eisenhower put it, "We don't have any enemies on the moon." And he couldn't, for the life of him, see why we needed to do this. And yet, there was a sense of momentum and discussion that this was the next phase, that this had to be done. And surely, the Soviets had plans to do this. And this, ultimately, was the rationale, was that we were in the Cold War, that this was an existential struggle. And if the Soviets were able to establish an edge in space, then it would advance their interests here on earth.

Liz Bowyer: One of the things I learned from reading your book is that even President

Kennedy who we associate with his famous "Call to the Moon" speech in the joint session of Congress, one of the most memorable sorts of declarations of presidential modern history, and yet, even he was more reluctant than I understood to sort of meaningful invest in space exploration.

Jeff Shesol: He was. I mean, of course we remember him for that bold pledge and these incredible speeches that he gave vowing that we would go to the moon by the end of the decade. And yet, he was pretty slow to come to that view. He actually shared many of the same hesitations that Eisenhower had. He didn't actually see the rationale to send human beings into space, other than the fact that the Soviets would probably do it.

But he understood, in a way that Eisenhower didn't, the symbolic power of space. And so, in 1960 when Kennedy ran for president, he came out strong on space. And he said, "If the Soviets control space, they will control earth. And if we are second in space, in the eyes of the world, we will be second in science and technology, in military power, and in the struggle between freedom and totalitarianism." So, all this suggested a big commitment was coming.

And yet, Kennedy takes office. He turns to Laos. He turns to Berlin. He turns to Cuba. He turns to all of the domestic problems that had developed. And space takes a backseat. And it's not until the Soviets succeed in sending the first human being into space, Yuri Gagarin, in April of '61 that the issue was forced, and Kennedy has to decide whether he's really going to do something about this.

Liz Bowyer: So, in the meantime in April, I think, of '59 the Mercury Seven astronauts had been introduced. And you write that the rapture of the press at the first site of the astronauts defied all reason or proportion. So, sort of just describe this outsized reaction to these astronauts and why they became such a phenomenon.

Jeff Shesol: Well, the scene at NASA headquarters, which at the time was on Lafayette Square in Washington across from the White House, this was in the old Dolly Madison House, actually, at the time, there was a musty old auditorium there. And they brought the astronauts out in April '59 to introduce them. And the press literally fell over themselves. They climbed over one another to get near the stage. It was like the red carpet at the Academy Awards.

And there was a sense that these were new American heroes, even before they'd done anything. In fact, Wally Schirra, one of the Mercury Seven turned to the others and he said, "We haven't even done anything yet." But it didn't matter on a certain level because they were prepared to do something. And they were prepared to do something brave and unprecedented and ostensibly in the interest of national security.

In the book I quote a *Time Magazine* reporter who said, "America needed a hero like John Glenn." But the same could be said of all of them. There was a sense in the country in the late 1950s that we were enervated, that the United States had lost its initiative, its drive, the boldness that it had showed during World War II, for example, and had sort of settled into an existence of materialism and conformity. We loved our big cars, and we loved our color televisions, and we were no longer prepared for the challenges of the atomic age.

And so, here were these seven accomplished military test pilots, some of them combat veterans like John Glenn, who were prepared to set in terms of a missile and be blasted into outer space. And there was a sense that this is what was missing. And look at these guys, they're all ordinary Americans just like us. But look what they're willing to do. There was a sense of pride just in seeing them.

Liz Bowyer: So, John Glenn, in particular, stood out as embodying the best qualities of Americanism, as they were understood at the time. Who was John Glenn at that moment?

Jeff Shesol: Well, John Glenn was kind of an everyman Superman. And in a way, I think that kind of captures his appeal. He was from a small town, and I do mean a small town. He was from New Concord, Ohio, which is a town of about 1,000 people, 70 miles from Columbus. And everybody knew everybody as you would expect in a town that size. It was a very patriotic town. It was a very religious town, Presbyterian. And Glenn was a classic kind of guy next door. He did very well in high school. Everybody liked him. He was good to his parents. He was all of these things.

And yet, by the time the American public meets Glenn in the late 1950s, he also was, of the Mercury Seven, he was the most decorated combat veteran. He had fought, and fought with incredible distinction and ferocity, which I think people don't necessarily imagine about John Glenn, in both World War II and Korea. He had set a transcontinental speed record as a test pilot flying from LA to Brooklyn - three hours and 23 minutes. He did that in 1957. And he became an overnight celebrity.

And he was sort of made for the moment. And he could also speak very eloquently about the challenges ahead and the opportunities in space, which was something that the other astronauts couldn't do with the eloquence.

Liz Bowyer: Even as Glenn and the other astronauts were being heralded as these heroes, you know, the reality of what lay before them was incredibly daunting. You describe in the book this moment where the newly anointed astronauts were taken to this sort of viewing area new the launch pad to watch a test flight, which then just exploded right in front of them. Describe sort of the scientific and mechanical challenges that NASA was up against?

Jeff Shesol: It exploded, essentially, over their heads, this rocket that they were supposed to ride, ultimately. And they ducked. Instinctively, they ducked. It was not going to rain down on them. They were a safe distance. But they laughed. It was kind of a gallows humor. But then Alan Shepard turns to John Glenn and said, "I hope they fix that thing before they ask us to ride it."

And more seriously, they had a conversation, the seven did. And they acknowledged among themselves that it was inevitable that one of them was going to get killed in the course of Project Mercury. And it was just a question of which one and when. So, they understood the risks. And the risks were really profound. The risks were, roughly speaking, twofold. They were actually 1,000-fold if you were to break down the list. But there were the risks of the equipment and the

booster rockets, which had this horrific tendency to blow up on the launch pad. But there was also the danger of being in outer space, which no one had ever done before. And no one knew what was going to happen.

Liz Bowyer: You know, even with this camaraderie among the seven that you describe, there was still, as NASA got closer to sort of being ready for space flight, the inevitable decision of which of these astronauts goes first. The odds on favorite, as you describe, was John Glenn. But he didn't end up being sort of the choice, which he was resentful of. So, describe how that dynamic played out.

Jeff Shesol: Well, Glenn had been first in everything. And he expected that he would come out first in this competition among the seven, this competition to be immortal in their view. Whoever got to go to space first, they thought would go down in history. And even after the Russians had beat us to it, there was still the question of who was going to be the first American in space. But the selection had already been made by that point.

Glenn and Alan Shepard were really the standouts in the group. They had the strongest personalities. They were the most disciplined. It seemed clear, even to the other astronauts, that it was probably going to be one of these two guys.

And in the end, Bob Gilruth, who ran the Space Task Group, selected Alan Shepard to go first with Glenn as his backup. And then selected Gus Grissom to go second and Glenn, again, as his backup. And there was no decision made as to who would get the third flight. So, this was a huge shock. And actually, I think it's not an overstatement to say it was a national shock because the public preferred John Glenn and was rooting for Glenn. The press was rooting for John Glenn. And there was just, generally, an assumption that of course it would be Glenn.

And Glenn had never been dealt a blow like this. And he did not take it well. In fact, he refused to take no for an answer. And he wrote a letter of protest to Bob Gilruth. And the gist of it was, not only was he more qualified than the others, but that he was being punished, and there may be some truth to this, but he had been punished for insisting that the other astronauts live by his moral code, which amounted, really in the end, to being faithful to their wives, at least during the Mercury program. And Glenn was perpetually warning the other astronauts that if they got caught doing what they tended to do late at night at Cocoa Beach after hours at the jazz bars, that it was not only going to be an embarrassment to their families, but to the program and to the United States of America and could jeopardize the program in the middle of this Cold War, by the way, with the Soviet Union. That message never particularly went down well with the other astronauts. And so, there was a lot of rooting against Glenn going on among the astronauts, and even some of the NASA managers.

Liz Bowyer: But finally, John Glenn is chosen for the third mission and really the more meaningful mission. Well, you can describe it, of sort of orbiting around the earth. It was an excruciating, as you describe it, sort of series of starts and stops leading up to that. So, just describe what was at stake for John Glenn when his mission family came through.

Jeff Shesol: Well, as you said, he was selected third in this flight order. And it would

up being the first orbital flight. The thing to know about Shepard's flight and Grissom's flight is that they were both suborbital flights. That's what Jeff Bezos is going to take next month. You go up. You come down. The whole thing, start to finish, 15 minutes.

And the Soviets, by that point, had already orbited Yuri Gagarin around the earth. So, there was this sense that we were just not catching up. And so, there was an enormous weight being placed on Glenn's flight as the first orbital. It was just good luck for Glenn, actually, to have been passed over the first couple times because he got what they all referred to as "the big one." It was more challenging. He was going to be up there for about five hours and get to do all kinds of things that the others, as they went up and fell down, were not going to get to do.

But it was going to take a while to get there. The program announced that he was going to take an orbital flight before it was ready to send him up on an orbital flight because there were still loads of problems with the rocket. We talked about some of them before. There are many others that I can mention. So, Glenn's flight was postponed and postponed again. And there were, ultimately, it was scrubbed, the launch was scrubbed ten times over the course of four months. And it was starting to seem like America would never be able to orbit a man. That there was just something ill fated and doomed about the entire project. And that Glenn, himself, was probably doomed. It had started to feel that way to a lot of commentators, one of whom, by the way, was writing a profile on him for *Time Magazine* and wrote to his editor, "I really hope that this is a biography we're writing and not an obituary." There was that sense.

And meanwhile, and this is really what I'm trying to do in this book, is to bring the space race and the Cold War back into the same frame as they were seen and understood at the time, this isn't happening in a vacuum. What's going on internationally at this very same time is the Berlin wall is going up. The Soviets, for the first time since 1958, they break a moratorium on atmospheric nuclear testing. And they begin blowing up 50 megaton bombs over the skies of Central Asia, in the skies of Central Asia. More powerful than all of the munitions in World War II, including the atomic bombs, all in one bomb. And so, there was just a sense of mounting doom in the United States, not just for Glenn, but generally. People were rushing to build fallout shelters. We associate that with the '50s. This was really happening in 1961/62. So, the stakes for Glenn's flight, to your question, were just getting higher and higher the longer he waited.

Liz Bowyer: So then, finally the day comes. You sort of recount in riveting detail this four hours and 55 minutes that he spends in orbit, which is actually far more harrowing, at least for the people on the ground at NASA, than I had understood. Give us, it's hard in a few minutes, but a sense of what the milestones were and what happened on that journey.

Jeff Shesol: And this was a surprise to me when I started work on this book, is that, you know, what I knew about the mission was that it was successful, and that Glenn came back and there were parades, and he lived a very long life and served in the US Senate. But what I didn't realize is that, so, he orbited the earth, as you said, three times. And two of those orbits, the last two, mission control spent in a cold panic because many of them thought that he would not be able to possibly come back alive. And the reason for that was at the end of his first orbit, and everything had gone beautifully up to that point, at the end of his first orbit, two things went wrong. One was the autopilot started to fail. And the capsule started to skate a little bit to the

right, kind of like a car with its wheels out of alignment. And so, the thrusters would automatically knock it back into line. And then it would happen again. And it was wasting fuel. So, Glenn had to take over manual control of the capsule, which was basically fine with Glenn. As you said before, they all wanted to fly this thing.

But then something potentially more serious happened which was that this warning light went on at Mercury control center at Cape Canaveral. And it indicated that the heat shield, which of course was going to protect the capsule on its way back through the atmosphere, 3,000 degree heat as it would come back through, had started to separate from the capsule a little bit. And if that was the case, then Glenn would be incinerated on the way back in.

So, they spent those two orbits trying to figure out whether the signal was right, whether there really was a problem. And if there was a problem, whether anything could be done about it. And Chris Kraft, who was the flight director, called all the shots at mission control, said that Glenn should be kept in the dark. They would not tell Glenn what was going on. They thought maybe he would panic. Of course, he was chosen for this job precisely because he was the kind of guy who didn't panic. And had been in many dangerous situations before where his life was on the line. But they elected not to tell him.

And so, instead, they began to ask him these sorts of, you know, in retrospect, hilarious leading questions like, this is verbatim, "Are you hearing any banging noises?" You know? He's more than 100 miles above the surface of the earth. And they're asking. And they won't tell him why they're asking these questions.

And late in the flight, when he's been asked one question or another along these lines, he finally cracks just a little and he says, "What is the reason for this? Is there a reason?" And there's a silence and a crackling on the line. And they say, "Not at this time. Not at this time."

And so, you know, there were some words to be had when he got back to earth. But at the time, it was not totally clear, even to Glenn by this point, that he was going to get back to earth.

Liz Bowyer: Because the return to earth was incredibly dramatic, where the astronaut could easily, if he'd lost the landing shield, just sort of be incinerated.

Jeff Shesol: Absolutely. And so, without getting too technical. The solution that they came up with to save Glenn's life, and none of them had any particular faith in this, was to at the bottom of the heat shield-- the heat shield, as you may have seen pictures, is sort of this smooth arc. And it partly melts away to carry the heat away. It's ablative and it takes the heat away. But attached to the heat shield was a package of thrusters called a retro-pack. And before reentry its work was done, and you were supposed to jettison the thing. And then the smooth heat shield could go do its work.

So, they said, "Leave it on. Leave it attached." They thought maybe it would clamp the heat shield in place. But the problem was that, besides the fact that they weren't sure that would actually work, was that the retro-pack was not made to withstand the heat of reentry. They knew it would melt. And was it going to come apart? Was it going to throw off the aerodynamics of

the capsule while it came back in? Again, not telling Glenn why they wanted him to leave it attached. They told him to leave it attached.

And by this point, after all of these questions, he is aware that something is going on with the heat shield, he's just not sure what. And he's coming back through the atmosphere. And, indeed, the retropack starts to melt. Chunks of it are catching fire, are coming apart, banging against the side of the capsule. And he's thinking to himself, my heat shield is coming apart. And this is it.

Liz Bowyer: And he knows what that means.

Jeff Shesol: He knows what that means. And he just waits. He said later that he was bracing himself to burn. And he waits. And he doesn't burn. And he makes it through. And it was an incredibly harrowing thing.

Turns out that the signal was wrong. There was a faulty switch, and it was sending a signal to Cape Canaveral that was incorrect. But nobody knew that until he was safely splashed down in the sea.

Liz Bowyer: So, what did this mean to young President Kennedy at that moment?

Jeff Shesol: It meant a great deal. It meant a great deal. And it was not just that he had invested himself and his credibility in the space program, which he had by that point, but it was that he understood the reason that he had invested himself and so many taxpayer dollars in the space program and was prepared to invest more, was because he understood the impact that it had in terms of America's credibility around the world.

I talked earlier about what he said during the campaign, that if we were second in space we would be perceived as second in everything else of consequence. He felt very much that was the case. And it wasn't just intuition. Interestingly, around the time that Kennedy was inaugurated, there were a series of polls, Gallup and others took polls of our allies in Western Europe. And by a more than two to one margin, more than two to one, our own allies believed that the Soviets would be ahead militarily by the end of the decade. And the principal reason that they felt that way was because of what they had seen the Soviets accomplish in space. There was an equating of success in space with military prowess on earth. It's a false equation for reasons that we probably don't have time to get into. And yet, good luck disabusing anybody of that idea at the time. I mean, they were after all, again, riding missiles into space. It seemed obvious that if they were so dominant up there, they were going to be dominant down here.

So, Kennedy understood that apart from the particular merits or rationale of what a human being would do in space or not do in space, the fact was that America could not be credible on earth, in NATO or in any other alliances that we had around the world, unless we could establish a strong presence in space and prove ourselves to be a powerful competitor to, at the very least, equal to the Soviets in space.

Liz Bowyer: But even as Kennedy sought to do that, he also genuinely saw this as an area of potential cooperation between the US and the Soviet Union. And he brought that up with

Khrushchev. Describe how that played into their negotiations.

Jeff Shesol: Well, it's an interesting kind of side drama in all this that I describe that Kennedy, even as he's amping up the US effort in space, is looking for a way out. Even after he has committed the United States to go to the moon by the end of the decade, beat the Soviets there by the way, he is opening dialogue with the Soviets to see whether maybe we should go together and take this out of the realm of Cold War competition. And stop draining the treasuries of two countries to, essentially, prove a point when we could actually do this together. And it might be an opportunity to bridge this vast diplomatic chasm between the two countries.

He was really enamored of this idea. And he brought it up with Khrushchev, at his summit with Khrushchev in Vienna in June of 1961. And Khrushchev sort of laughed it off. At first, he said, "Sure, why not?" He thought it was kind of a joke. And then the next day Kennedy brought it up again. And Khrushchev said, "You know, America is a richer country than we are. I'm sure you can afford to do this. You'll do this on your own." And that was the end of the conversation until John Glenn orbited the earth. And Khrushchev sent a congratulatory letter to Kennedy that was so fulsome, surprisingly fulsome, Kennedy thought let's open the conversation again. Let's see if maybe there is an opportunity to end this expensive and dangerous space race and find opportunities to cooperate.

Kennedy also understood that even if that effort failed, as he expected it probably would, there was some value to be seen as doing this. It established the United States as extending a hand that was then being slapped away by the Soviets. And there was, again, some propaganda benefiting that. But he was earnest in that he thought if the two countries could agree to work together, it would be to the good of all mankind, as the cliché went. And there were some discussions and there were some steps taken towards, essentially symbolic, small missions, mostly scientific. There was no discussion in any meaningful way about going to the moon together. And certainly, no discussion of anything like what we were later able to establish with the Russians, which was the International Space Station.

Liz Bowyer: Well, sort of turning towards today and space exploration, certainly there is a lot that has changed and evolved since the 1960s. But a lot of issues that seem very familiar. The new NASA Administrator Bill Nelson recently testified before Congress about American competition with another superpower in space, only now it's China. So, do you think looking at the landscape today that we're in the midst of another geopolitical space race?

Jeff Shesol: I think we are in another space race, with China in particular. The Russians haven't given up the game entirely, but China is certainly the most ambitious when it comes to their dreams about space and their plans about space. And obviously, better resourced, as you might say, than the Russians are. Whether Washington and whether the American people really recognize that we are in this space race is unclear.

Nelson, at this recent hearing, was trying to sound the alarm and to try to wake up Congressional appropriators to the threat. He held up a photo, this was on Zoom, by the way, a Zoom hearing, he held up a photo of China's Mars lander, which as you may know, arrived on Mars just right on the heels of our own lander. And then unrolled a Chinese flag and sent selfies back to earth. The

point was not missed in NASA headquarters. And so, Nelson printed up a copy of this photograph and held it twice before the webcam and said, "I want you to look at this. This is what we're up against. And we need to wake up to the fact that we have," in his words, "a very aggressive competitor in space."

Nelson's deputy was just approved by Congress I think last week. Her name is Pam Melroy. She was an astronaut. She's now Deputy Administer. And she said in her confirmation hearings, she said, "China is trying to take away space superiority from the United States." They're trying to wake up the Congress and trying to wake up the country. And it's just not clear that that's-- I don't think that's happened yet.

Liz Bowyer: Right. Because, you know, President Biden's 2022 budget request, I think, includes the biggest budget proposal for NASA in decades. But it's not clear that there's this political will in a sea of spending priorities. But would you compare at all the political landscape today when it comes to the appetite for investing in space to sort of where it was in the late 1950s, early '60s before there was really that kind of robust support?

Jeff Shesol: It's nowhere near where either the mood or the scale of spending was in the 1960s. I think I just saw this last week that as a share of the federal budget, not of GDP, I think as a share of the federal budget, spending on space now is one tenth what it was during the 1960s. Which is not to argue that we need to increase it by a multiple of ten, necessarily. But I do think that as excited as I think the public increasingly is about what's going on in space, there has been a lot of excitement about our Mars lander, about the helicopter that we've got flying on Mars. There has been excitement about the space race going on between Jeff Bezos and Elon Musk and, you know, Richard Branson, by the way, too. There has been a lot of interest in this. And yet, it has not translated yet, and maybe never will, into the political will to spend on a scale that can really counter the Chinese threat.

And I should add, it is a threat. I've been focusing on what China's doing on Mars. But actually, of greater consequence is what China's doing in orbit around the earth. China and Russia, in particular, have invested significantly over the last decade in what they call counterspace capabilities, which is the ability to destroy or disrupt the satellite systems on which everything down here depends, from cell phone communications to GPS to military maneuvers. Everything, of course, depends on satellite. And they've been perfecting, I mean it sounds futuristic because it is futuristic, they have lasers that can shoot down satellites. Russia has been testing successfully a satellite of its own that actually moves in on another stationary satellite and, like an octopus, sort of wraps around it and destroys it. And they've been doing this in sort of the full sight of the world because they're proving a point.

And the United States, we have our own capabilities in this regard. But it seems clear that we are playing catch up. And that we are not as able as we need to be to defend the satellite systems that we have. So, this Cold War in space is happening. But the level of awareness, again, here on earth and in Washington and New York may not be what it needs to be.

Liz Bowyer: Well, and now the interest around space seems to be on the billionaires who are funding it and pushing it. You mentioned Bezos and Musk and Richard Branson. And

certainly, those names are more familiar to people today than any astronauts. What's your view on sort of the state of the commercial space race? And I think it's Blue Origin is developing the Glenn rocket.

Jeff Shesol: Right. Well, you know, billionaires, many of them anyway, are already larger than life figures. We already knew who Bezos was. We already knew who Elon Musk was. And so, the idea that these personas are going to take their egos and their competition all the way into space, that's something that in a way is easier to wrap your mind around than whoever the latest astronaut corps might be. So, there's a lot of interest in it. And also, this sort of tantalizing prospect, as you're mentioning, about the commercialization of space and space tourism and whether this might actually be in reach for ordinary people, as we keep being told.

I'm not so sure. I mean even the Concord wasn't within reach of ordinary business travelers. I mean, so it's hard for me to imagine that a lot of regular people, however we define them, are going to get to go up on these rockets. But certainly, more and more people who are not trained astronauts are going to go up. And that will be interesting, at least for a period of time.

The New Glenn, ironically, so Blue Origin has a New Shepard rocket, which was first. And that's the one that Bezos is going to take. And appropriately enough, it's suborbital. The New Glenn is a much more powerful rocket, and it is behind schedule. And we will have to wait for the New Glenn. So, in a way, history is echoing loudly in our time.

Liz Bowyer: Jeff, thank you for joining us for this fantastic conversation. And congratulations on your wonderful book.

Jeff Shesol: Thank you, Liz. And thanks to all of you. Thank you.

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