

Space Capital Podcast S01E12 - Dawn of a New Era with Lori Garver Transcript

I remember one year at work, Congressman said I was missing the mission. It was to boldly go where no one had gone before, and we had to remind him that was, in fact, the Star Trek mission and not NASA's. But the NASA Space Act allows for all this. In 1958, it was seen as, really, just another place to do business, and one of the things that, I think, business community is also going to be interested in is the value of this information we're getting about our blue marble.

Welcome to The Space Angels Podcast, episode twelve, Dawn of a New Era. I'm your host, Chad Anderson, CEO of Space Angels - the world's leading source of capital for early stage space ventures. You can find us on Twitter at Space Angels. In this podcast, we explore what's happening at the bleeding edge of entrepreneurial space and speak to the founders behind the companies at the forefront. The Space Angels Podcast is brought to you in part by our friends at Cosma Schema - the new space design and branding industry, with a suite of services like brand positioning, company and product naming, logo design and web design. They're the only design industry exclusively serving new space companies. We recommend all our portfolio companies to Cosma Schema, and you can view their work at Cosma Schema dot com. I'm really excited about today's guest, Lori Garver. Lori was Deputy Administrator at NASA during the Obama Administration, where she was a key component of the commercial space industry. She's a co-founder of the prestigious Brooke Owens Fellowship for women in aerospace, and is also the CEO of Earthrise Alliance, a new non-profit organization which is joining the fight against climate change. Lori, welcome to the podcast.

Lori:
Hello.

Chad:
I honestly can't think of anyone more ingrained in commercial space, from the beginning of it until now, and we are incredibly excited to have you on with us today. So, you originally worked at NASA in the 90's to 2001, which means that witnessed the ISS launch in 1998 and the first long-term residents arriving there in 2000. And there was, obviously, a lot going on then. Space Adventure sent the first American businessman to the ISS, making him the first space tourist. And I understand that you attempted to secure your own space flight, did some the training, flew out to Russia for that. Can you tell us a little bit more about that, and what was motivating you and how far along you got?

Lori:
Sure. Of course. Much of my space career has been focused on the commercial side of things. I come about that honestly because my first job in the community was at The National Space Society, which was merged with the L5 Society very early while I was there. So, I had been there for thirteen years when I went to NASA the first time in 1996, and we happened to have a NASA administrator who was very supportive of commercial space. I think that's one of the reasons he brought me on. He did not feel he was getting advice from a lot of NASA bureaucracy and typical aerospace industry, and like The National Space Society, really understood that NASA had a role and part of that role was to incentivize more US companies to go to space. So we were

working with a private sector individual who was paying money to fly commercial experiment on Space Station. And when I left in 2001, because I'd become a political appointee, so I had to leave, this individual reached out to me to try and get him to fly with his experiment. So, I took him on as a client, we went to Russia, we negotiated a great contract for him. And along the lines of his training, fairly early on, he found out he was having a new business challenge - he's never wanted to be public about this - and so, we had negotiated for a seat. It wasn't very far away, and the Russians to me and said, "We need to find someone to fill that seat." I was aware, at the time, that their only other shot for getting money, and in 2001, 2002 this was a serious challenge for them, was to have a European astronaut and they only paid about three million. So, I ended up getting an agent, raising money through sponsorships, starting the training in Star City. Long story short, a agent of Lance Bass, from NSYNC, heard my story, connected it with Lance's response on an online chat about how if he hadn't been in a boy band, he would have been an astronaut, and offered Land the seat. So, I'm in Russia training-

Chad:

Okay.

Lori:

I hear from back in the US from my team that Lance Bass has announced he's flying on this mission. And Lance showed up and he hadn't really been told about how we had to raise money. And, ultimately, he didn't go to either. But my whole model was to get someone to go. Both, I think as to raise the money that the Russians needed to keep their side of the space program, as well as be able to highlight the value of what we were doing in space. Because you're not restricted as astronauts are to marketing. And I had Visa and Mastercard, who were bidding to see who would sponsor when I was called Astro Mom, shamelessly exploiting my children, who were four and six at the time. The flight was early November, so I was gonna buy something in space. What does mom do when she goes to space? Shopping. And so, they wanted me to make the first credit card transaction. There were many things like that.

Chad:

Interesting.

Lori:

And, as I said, was ultimately not to be. But I was very supportive of Lance going if could, because he had, I thought the ability, even more than me, to really, not only give them more money, but to share with the world what we're doing on Space Station. And unfortunately, that didn't happen either.

Chad:

So, bumped from your seat on a space station by a member of NSYNC. Who wouldn't have seen that coming? And so, the way that it works is that they have a primary person that's in the seat and then you have a backup in case someone doesn't go? Is that what you were training for, is that what Lance was training for? Or was it for a primary seat?

Lori:

No. It was for a primary seat. It was gonna be the Fall of 2002. As I said, when I negotiated for the seat, that was a primary seat. And I felt sort of bad, because I don't think they had marketed beyond that, because they thought my client was going. And, you know, the Russians, it's for sale. So even with a shortened training time, they felt they could do it.

Chad:

But you didn't let that stop you. You've continued to be an incredible advocate for entrepreneurial space. And you became the Deputy Administrator of NASA from 2009 to 2013 in the Obama Administration. And it was right in the heart of the commercial cargo and commercial crew programs, as they were developing. Which were, of course, a key ingredient to the success of private companies, like SpaceX and others. Can you tell us a little bit about how you became Deputy Administrator, and what it was like to be there at the agency working on these transformative programs?

Lori:

Well, I- There's so many things that led to becoming Deputy Administrator of NASA. Primarily, I do think having worked at NASA, as the head of policy in the 90's in the Clinton Administration. I have a political science and economics background. I'm not an engineer or scientist. So, this is how I come at space. And from my early days at The National Space Society, whose goal is to create a spacefaring civilization, widely held view from the very beginning that it was NASA's job to facilitate those kinds of things, not to do it themselves. And this made me different. And also, I think for Democratic candidates, I was willing to show that I had beliefs that were aligned with Democrats, where a lot of space policy people like the say that are nonpartisan. But Washington, if you're gonna work on something and set policy, you need to make the choice. And while I was raised a Republican with a stockbroker father in Michigan, the Republicans lost me with a few of their social issues in the 80's. So, I worked, first, probably most visibly, after that NASA job in the 90's, on John Kerry's campaign doing space policy. I then worked on Hillary's campaign in 2008 doing space policy. In fact, debated the space policy person Obama. And after the primary, Obama's team came to me and asked if I would lead their transition team for NASA if he were elected. That happens in the Summer before anybody knows who wins, and you quietly start building your team and your policies. And you've got a lot done ready for the day after the election, in the case that your candidate wins. We were lucky enough to win. We started immediately. And during that time, they asked me what, if I were to serve in the administration, would I be most interested in doing. And my dad had always counseled me to ask for one thing higher than you thought you could get. And my dream job was Chief of Staff at NASA, so I said, "Deputy." And they came back early February, said the President wanted to nominate me as Deputy Administrator of NASA. So, we still had a few months' worth of churn and getting an administrator before I could be public that May and confirmed in July. But that was the background.

Chad:

Interesting. Appointed the Deputy before the Administrator. Is that how it normally works? Or does it normally work away? [laughter]

Lori:

Hard to know what's normal in Presidential transitions.

Chad:

Okay. Yeah.

Lori:

Because, of course, NASA administrators have continued before. Dan Goldin was held over by the Clinton Administration from being appointee, and then the second Bush Administration even kept him a bit. There hadn't been a confirmed Deputy in the Clinton Administration, so we always had an acting, General Dailey. So, the Deputy has been used for different reasons. And Shana Dale had been there before me and had no intentions of staying. Mike Griffin had made his intention of staying known, which was not something that was acceptable to the new administration, largely because of his public views on climate change that he had shared on NPR. And so, I think mainly the head of the transition teams, we became Deputies. In our administration, that was a pretty typical path. They had asked me for an administrator suggestion well before the inauguration, and I had provided those. We were not successful in getting some of those early choices accepted by the Senate. So, that's why it took a little longer.

Chad:

And so, back in the 80's, there wasn't much entrepreneurial activity in space, really, to speak of. And then there was a few things developing, and then through the 90's there was a bit. But things haven't really started to pick up until, you know, we like to say from 2009 is where draw the line in the sand. Where did you start to see the shift towards public, private partnership in its new incarnation? You know, like the COTS program and things. When did you start to see this really gain traction?

Lori:

Well, you know, it is- it is hard for me to separate that from the ideology that came out of Gerard O'Neill. And actually, Jeff Bezos' announcement about his lunar lander, spoke to that as his own inspiration. And in the 90's running NASA policy, I did get money for a number of things that became commercial. I worked with X Prize folks, and Peter, to- Gosh. I met with one of their bankers to make sure they got money, and to show they were serious. We got Dan Goldin to come to their kickoff to show NASA was serious. We spent money on Alta access, giving it to a lot of these commercial space launch companies, many of whom have gone away. So, I do believe that as SpaceX came along, in the early 2000's, we saw somebody who might really be able to pull it off. But it wasn't the first time. We thought Andy Beal would pull it off. We thought Kistler, Kelly, Rotary, you know, we supported them all. So certainly, SpaceX was game changing. When we bet on them, it was a risk, for sure, but honestly, we just didn't have much choice, and it was the ideology that I had always believed in. And the President, the head of science technology and policy, everyone in the administration really believed in this for the entire transition. Being able to utilize innovation and technology to make the world a better place, to advance our economy, and to advance the space program. So, it evolved over time. I think the addition of Bezos and Blue Origin really cemented to me. Jeff came in and talked to Charlie and I rather early in our term, and they, to me, I felt, "Okay. It's one thing to have SpaceX, but we don't want someone with no competition." That doesn't really help over the long-term. So when Blue came in, and with his resources, he was willing to do this. That's when I was

like, "Aha. This is gonna work." Because we needed that competition. And had I known what that competition would inspire, I would have run at it even harder if that were possible. But it really- it really did take. And so, I think you're timing is right on. I came in doing this in '08 behind the scenes, and in '09 we were rearing to go.

Chad:

And I'm glad that you brought up the Blue Origin's Blue Moon event, yesterday, because you tweeted, "If NASA embraces this Blue approach, a lunar landing could be accelerated." Maybe not in 2024, but sooner than you had thought that morning when you woke up. So, I'm curious to hear, what do you think of this 2024 and about Blue as an architecture to pull it off?

Lori:

Well, what I think, and why I tweeted that, is that I do believe that one of our biggest challenges to going back to the Moon or doing anything bold in space is political alignments. It's even more than the money, cause you actually, if you were politically aligned, these aren't dollars that are available. If we all agreed there was a value in what the mission was. And I don't think for the Moon program, the administration has laid out, there is that. There's not really even an articulated why. And certainly, not enough to get Congress, who's pretty invested in SLS and Orion, and the big things NASA's spending money on now, to switch horses. Cause we've run that experiment. It takes a lot. So this, to me, sitting there listening to Jeff Bezos outline both his ideology coming from the same as mine, this advanced communities to space as a way to help Earth, preserve our own resources, and ultimately be able to expand as a civilization, gives it a why, to me. And then he unveils a spacecraft that's been three years in the planning. So, they're three years ahead. And he's got a willingness to go and work with NASA to help make this happen. So, it not only drives down the price, it would drive down of what it is we're doing there and the very purpose that has not been articulated. You know, Administrator Brian Stein got asked in a hearing, "Why are we going to the Moon? Why do we have to go by 2024?" His answer was because we have to get there and go before, we go to Mars. Well, first of all, no one really explained why we have to go to Mars. And we all know it's not a fact that you have to go to the Moon first. So, to me, I've been, not really cynical about 2024, because I've always said, technically, we can do anything. NASA and this country has a ton of capability, but we didn't have a way to lower the price or get a mandate to go. And so, if NASA wanted to embrace this, I do think it would accelerate the timeline. Not before 2024.

Chad:

Yeah. Fair enough. And so, why would they be working with NASA on this, given then they, you know, richest person in the world, he's able to fund this himself? Why would he want to work with NASA and throw it out there as an architecture to help them get there?

Lori:

It's very similar to their approach on their heavy launch vehicle. So Blue Origin, Jeff came to us very early, and said what they were working on. It was under a veil of secrecy, so we couldn't talk about it. And it was their large rocket, and they said they were going to do this. But if NASA wanted to use it, and this when we were directed to do a big rocket, SLS, they would work with us on it and they could pay for a bunch of it and accelerate our timelines. Unfortunately, NASA could not find a way to work with them. And as hard as I tried, the existing forces were

committed to building SLS with the contracts that we had. And so, we were not able to accept that.

Chad:

How interesting.

Lori:

But did they go do it? You bet they did. They did it exactly as they said. So, this is insane? And I asked Jeff yesterday, I said, "Is this that?" And he said, "Yeah. We're gonna do it. If they wanna work with us and help with funding, it will be accelerated. But we are gonna do it."

Chad:

Okay. So, I would like to get back to you and some of these other things that you're on. So, since leaving your post as the number two at NASA, you've been involved with a number of different initiatives. But I want to discuss a couple of them, in particular, in some more detail today. The first of which is the Brooke Owens Fellowship, which you helped found in 2016. We hosted an amazing Brooke Owens fellow at Space Angels last Summer, and we have another one joining us again this year. And we love the mission, and we're really honored to be involved in what is a really selective program. Can you tell our audience a little bit more about the program, and what it does and how it came to be?

Lori:

Of course. I mean, this is my favorite topic. And my children who are only male, call them my favorite family, because not having girls and now we've got a hundred and fourteen Brooke Owens fellows having either been in the program or currently in the program. And I really appreciate your and Space Angels support. Brooke Owens was just a fantastic person, who I had gotten to know through her career. Her last part of her career was at OMB, the White House, when I was Deputy Administrator. And she was absolutely critical to getting me all the information and details to go and be the champion for these things we're talking about. So, I do get a lot of credit for things that really represent a lot of people's work. But Brooke was one of those very special people. And she died at thirty-five of breast cancer, and I just did not think her spirit and her change that she was making in the space program should end with her physical death. And her life was inspiring. I reached out to many in the space community, and Will Pomerantz and Cassie Lee took up the mantle with me. And our goal was to not only have a more diverse work force join the space community, but also to help the space community by having new innovative thought and diverse work force. So, we set out to do a program where we could have collegiate women intern at primarily commercial space firms. We- First of all, that's who I knew. I could call heads of space firms, like yourself, and say, "Will you host an intern for a Summer?" So, it's a Summer internship program. We assign them senior mentors, again, throughout my time in my career, I have had the great pleasure of connecting with a lot of the most senior people in the business. And they've all been willing to share their time as mentors. They have rallied. I'm so proud of the space community. All I really could have ever wanted out of being the position I was at NASA. I didn't get everything accomplished, but I feel like through these women and their careers, they're going to. And they come together once a year at this big summit in Washington. I have them to the house, and I- I've already started to get Mother's Day cards to Space Mom. I'm known as Space Mom to them. And they really, as I said, the

community embracing them, such as yourself and Space Angels, has been a joy of my life. Because I do feel that my career was made more challenging by being a woman. I, of course, was often the only woman in the room. But mainly, it's how my views were not accepted by many, because they aren't hearing something, they don't want to hear from a woman who is more senior to them. And I cannot wait for that not to be the case for the next generation.

Chad:

Well, I have to tell you that we get as much out of this program as they do. And these are really exceptional young people that you're pulling together. And they are, without a doubt, gonna do amazing things. So, thank you for that. We're really, really happy to be involved. So, you are- you've touched on it a couple of times already, but you're a long-time advocate of Earth and climate science. And back in 2010, you addressed the UN on the peaceful uses of outer space. You also signed an Earth Science Satellite agreement. Just last month, your latest project was announced, Earthrise Alliance. What does this organization do, and what made you decide to start it? Can you tell us a little bit more about it?

Lori:

Sure. Again, my thirty-five year career in aerospace has never been about the rocket or the widget. It's been about what the opportunity of going to space can allow us as a society, as humanity. And the benefits that we get when we go to space. Some of the more near-term ones is this overview of a perspective that astronauts universally come back and say, "We live on a very fragile planet. And the atmosphere is very thin." And of course, we live in a time when, because we have been able to reduce the cause, getting to and from space, reducing the expense of the satellite, all the things that you help people see and invest in. That technological advancement, along with the policy advances that we were able to drive, along with things like computer modeling of climate data and cloud storage of a massive amount of data, have really allowed for renaissance in our understanding of the Earth. And I am so excited to be able to work on something that all of our efforts have allowed to be possible. And that is to really understand what's going to the planet and do something about it for future generations. We are late. The science is compelling. And what we at Earthrise do, are working to connect this new data and information with as many users as possible. So that we can find solutions, adapt, because we know some of it is inevitable at this point. And be able to utilize the incredible perspective of space, for the Earthrise photo, in 1968 showed us about our beautiful planet. And it's just- it's a great thing for me right now, because I am so proud of the accomplishments of space, but I also think we're spending a lot of money on things that are not meaningful. I used to get some criticism for talking about the meaningful parts of space. I remember one hearing where a congressman said I was missing the mission. It was to boldly go where no one had gone before. And we had to remind him that was in fact the Star Trek mission and not NASAs. But the NASA Space Act allows for all this. In 1958, it was seen as really just another place to do business, and one of the things that I think business community is also going to be interested in is the value of this information we're getting about our blue marble.

Chad:

Fantastic. Very worthy cause. And happy to hear that you've turned your attention to it. Lori, on this show, we like to say that there has never been a better time to get involved in space investing. For our last question, I'd like to ask if you could give us your personal perspective on that, and which areas maybe you think are the most exciting.

Lori:

Because, for me, this is an overarching ideology that space is a place just like as we crossed the oceans for purposes of commerce, it's positive that we go to space and discover new ways to expand commerce. And really, the lowering of launch costs was the holy grail, the Gordian knot that we set out to achieve during my entire career. So being able to do that - Of course, more can be done. But through reusability and competition, allows markets to open that we could not even imagine. So, to me, the investments are in markets where we know the value from space is going to be unique. So, when you're looking at satellites, so many of them, are they going to be refueled? Are they going to need to be fixed? Well, we don't know based on launch costs. You know, there's a lot of unique things right now. I would, I guess, encourage people to invest, you know, a broad array of space activities. We know communications has been extremely profitable and important. Remote sensing GPS. I'm a believer in the long-term benefits of things like mining the Moon and asteroids to build, to use resources to build habitats or other things in space. But those are a ways off. And I tend to, if I were advising, as I said, my father was a stockbroker, something that you know there's a market for that the space provides you. And I think you will watch your portfolio grow in that scenario.

Chad:

And you're seeing that open up today in a way that we haven't seen before, or is it on par with something more akin to something we've seen in, I don't know, maybe the 90's or something?

Lori:

Well, certainly in space, there's never been this opportunity. And the whole reason is driving down launch costs. I mean, I know it sounds simple to say, "Oh, where would we have gone if we threw away the airplane after every flight?" But that is literally the change that's happening. So, that's transformative. And we're just at the beginning of that. So, you know, most things that we thought of to do in space had to be expensive in order to justify launch costs. So, this is an entirely different arena today, and becoming something that, of course, it's not been before.

Chad:

Wonderful. Lori, it has been great talking with you today. Thanks very much for your time.

Lori:

You're so welcome. It's a pleasure.

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