

Sidedoor: Season 11, Episode 19 – Space Jams

Lizzie Peabody: This is Sidedoor, a podcast from the Smithsonian with support from PRX. I'm Lizzie Peabody.

Lizzie: Today on the show, we've got something a little different for you. Our friends over at the Smithsonian's National Air and Space Museum have a podcast called AirSpace. And the AirSpace crew invited me to come on their show to guest host an episode all about the Voyager Golden Record, a gold-plated phonograph record launched into space back in the 1970s with the sole purpose of introducing all of humanity to aliens some billions of years down the line.

Lizzie: So today on Sidedoor, we're sharing that episode. And it's gonna sound a little different from your typical Sidedoor. Their show has two hosts: Matt Shindell is a space history curator, and Emily Martin is a planetary geologist. They're both at the Smithsonian National Air and Space Museum. And their show has a bit of a more conversational format than Sidedoor, but I think you'll like it.

Lizzie: All right, here's the Sidedoor-AirSpace collaboration, "Space Jams."

Matt Shindell: Welcome to AirSpace from the Smithsonian's National Air and Space Museum. I'm Matt.

Emily Martin: And I'm Emily.

Lizzie: And I'm Lizzie.

Matt: Who let her in here?

Emily: Matt, be nice.

Lizzie: Wait, hey! You invited me!

Emily: [laughs] We asked Lizzie to come and hang out with us from the Smithsonian's Sidedoor podcast so that we could explore together one of the museum's iconic artifacts—the Voyager Golden Record.

Matt: Yeah, that—that strikes a bell.

Lizzie: Well, thank you for having me. I'm really excited to be here, and I've been wanting to learn more about the Golden Record for ages, because I knew we had one in the Smithsonian collections, but until we started talking about this story, I had no idea what a wild backstory it had.

Matt: The record is a collection of sounds, songs and images coated in gold and attached to the side of two Voyager spacecraft that NASA launched back in 1977. It's meant to be a detailed look at humanity for any extraterrestrial beings who might find it.

Emily: What happens when you try to represent all of human existence in one single record? We're taking you through how the Voyager Golden Record was made, and how the museum ended up with a copy. That's today on AirSpace.

Lizzie: And Sidedoor.

Emily: I feel like the Voyager Golden Record is kind of a perfect story to talk about with you, Lizzie, because while it is part of our collection, it's really the ultimate intersection of all different kinds of disciplines kind of rolled into one project.

Lizzie: Science, art, history and culture.

Matt: Yeah, and all attached to what was at the time cutting-edge space technology, and sent out to the furthest reaches of our, you know, solar system and now beyond.

Emily: Still en route, even.

Matt: Still en route.

Lizzie: Okay, I'm not a space person, so just to make sure I've got the context right: in 1977, NASA launched Voyagers 1 and 2, two spacecraft that were going to travel farther into the solar system than any other spacecraft before them. And strapped to them was this record containing sights and sounds of Earth so that if, in the course of their voyaging, either of the Voyagers happened upon aliens, they might understand who and what humans are and where we live and what we're all about.

Emily: That's pretty much it.

Lizzie: And is there a way for the aliens to listen to this record? Like, is there a turntable on board?

Matt: No, there's no turntable, but there are instructions for the aliens on how to build one.

Lizzie: Okay. Hopefully the instructions are better than the IKEA pictographs. I'm picturing a bunch of aliens fighting with each other over the little screwdriver thingy, like, "No, Gorp! The bolt goes in first!"

Emily: [laughs]

Matt: Huh. Yeah. Well I mean, presumably if these aliens can understand all of the physics that's sort of used on the record cover to explain what everything is then they can follow the instructions to build a turntable. Although who knows, right? Like, the people with the most sophisticated knowledge of the universe often can't do the simplest things. Or maybe that's a stereotype. I don't know.

Lizzie: So can we talk about why the heck this thing even exists? Like, what—why was it made, and how did they figure out how to make it?

Matt: I think to answer that question, we have to go back a little bit to a previous mission, the Pioneers 10 and 11 missions that were launched in 1972 and 1973. So these were actually the first spacecraft to explore the outer solar system and the first spacecraft that we knew were gonna go out of the solar system.

Matt: And so Carl Sagan, who you may have heard of, right? He was an astronomer and an astrophysicist, and he wrote the book, *Cosmos*, and wrote and starred in the TV series of the same name. He teamed up with his colleague Frank Drake, known for pioneering the American search for extraterrestrial intelligence, and they came up with the idea that they should attach some kind of human signature to those two spacecraft.

Matt: And so they attached what was kind of an interstellar postcard, the Pioneer Plaque, which only included imagery that showed what human beings look like, what our anatomy was, as well as an outline of the spacecraft for scale, for looking at those human beings. And then a sort of map that would show the extraterrestrials where this thing had come from. And so that idea from those Pioneer spacecraft got carried forward to Voyager, which now they realized was gonna be traveling faster even than Pioneer, and so would actually exit the solar system sooner than the Pioneer spacecraft would. And so they thought well, what can we do for this spacecraft? Why not include even more than what we included on the Pioneer

spacecraft? And so that was the genesis of the idea.

Lizzie: Okay so just to be clear, the Voyager spacecraft were not designed to carry these records, right? They had other work they were going to do. The records were more like well, almost an afterthought. Like, "We're sending these things out in the cosmos, we might as well leave our calling card while we're at it."

Emily: Yeah, the Voyagers were initially designed to explore our solar system, like, the whole solar system. So it was this grand tour to go to Jupiter and Saturn and Uranus and Neptune, and collect all this information on the moons and the systems that these planets each have. And I think one of the ways in which we can see the lasting effects of Voyager and all the data it's collected is that I'm still working on Voyager data. It is still the best data we have of certain corners of our solar system. And I think it's really brilliant when you consider the fact that this was part of the design of this mission from the very beginning.

Lizzie: So how far has it gotten?

Emily: So it's not technically outside of our solar system yet. It's gonna take thousands, hundreds of thousands, billions of years for this to really even get far enough away for us to even realistically consider whether or not it could be found as something that may take longer than humanity has, right? I mean, how long is our species gonna be here? That got really existential really quickly, so sorry.

Lizzie: Yeah. Do we have to answer that question?

Emily: [laughs] No.

Matt: [laughs]

Emily: But I think—I think it kind of takes you back to how do you create a message? And how do you create that message in a slightly more three-dimensional way than we did with Pioneer?

Lizzie: Do we know if there was any pushback against this idea? Because essentially what we're doing is sending out this roadmap of, like, "Here's where we are. Here's how squishy we are, and vulnerable, and here's how to find us, and here's all the things that make us tick. We salute you, nice to meet you." It's sort of an inherently very trusting and innocent move, not knowing, like, who we're giving this information to. It's not very strategic.

Matt: That's true. And starting in the 1940s, but especially in the '50s and '60s, there was kind

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of a growing distrust of whatever potential aliens might be out there. The narrative of abductions and of alien invasions had already kind of become a thing, and the UFO community already existed. And so, you know, the idea that you were then gonna send out a greeting and a roadmap back to the planet was kind of, you know, not something that was seen as a great idea.

Matt: But of course, Carl Sagan and Frank Drake really thought differently about this, thinking that not only is it important to include these human elements on this spacecraft, but also acknowledging that it was really highly unlikely that these things would be found within the sort of lifetime of the human species, because it's going to be many, many, many, many, many years before they encounter anything that could potentially be, you know, a technologically sophisticated society.

Lizzie: They're thinking in the billions of years.

Matt: Yeah.

Lizzie: Okay, so it's clear that there are a lot of decisions to be made in terms of what actually goes on the record. Like, this is humanity's shot to represent itself, put its best foot forward. Who gets to decide what goes on there, and how do they decide? Is there, like, a process?

Matt: So Carl and Frank get someone who's gonna handle the art, the artistic director for the record. That's John Lomborg. And they also have Carl Sagan's wife at the time, Linda Salzman Sagan working on the record. And then they also bring in a creative director.

[ARCHIVE CLIP, Ann Druyan: My name is Annie Druyan, and it was my honor to be the creative director of NASA's Voyager Interstellar Message.]

Emily: So I—you know that dinner party question people ask you like, "If you could invite X number of people to a dinner party, who would it be?"

Lizzie: Mm-hmm?

Emily: Yeah, this is a dinner party I wanna go to.

Matt: Yeah. [laughs]

Emily: So Annie met Carl Sagan and his wife at the time, Linda, at a dinner party that was being hosted by that Nora Ephron.

Matt: Name drop!

Emily: Like, *When Harry Met Sally* Nora Ephron.

Lizzie: *You've Got Mail* Nora Ephron? *Sleepless in Seattle* Nora Ephron? Oh my gosh.

Emily: I mean, like, I just—like, I just can't. Like, this is the dinner party I wanna be at.

Lizzie: This is a setting of a romantic comedy.

Matt: [laughs]

Emily: Right? So that's how they met. And then later, when Carl had this idea for the Golden Record ...

[ARCHIVE CLIP, Ann Druyan: Carl Sagan came to me and to Timothy Ferris, and told us that once the two Voyagers spacecraft completed their epic reconnaissance of the outer solar system, they would begin phase two of their mission, which would be to power through the Milky Way galaxy, perhaps circumnavigating it over the next one to five billion years. And they would outlive, perhaps, the world that we know, everything that we hold dear. What was so thrilling about what Carl was now proposing was that instead of a very brief visual message, with the Voyagers we could create something as ambitious as a long-playing record.]

Matt: It was ambitious. They were a small team. Their job was to introduce all of humanity to aliens just using three types of information: sound, images and printed messages.

Emily: And they only had about six months to pull it together before they had to get nailed to the side of a space robot.

Lizzie: Six months to make all the decisions, collect all the recordings, get distribution rights to the galaxy approved, and press the thing? Like, even I can tell that's not very long, and I don't really understand how space stuff happens.

Emily: I mean, these are big decisions to be making. They started work in January.

[ARCHIVE CLIP, Ann Druyan: *But we had to finish our work by mid-June. And it felt like a race. And I remember lying awake at night many nights thinking, "What if we leave out something truly important? Is that gonna haunt us for the rest of our days?"*]

Matt: It was a lot of pressure. The team was working mostly under the radar, but once the thing got made, a lot of people—and maybe aliens—were gonna be hearing it.

[ARCHIVE CLIP, Ann Druyan: *From the moment we began the project, we had two recipients in mind. One was the putative extraterrestrials of our imagination, and our hopes, perhaps, and some of our fears. But it was also the people of this planet. We wanted to communicate with our fellow Earthlings something of the great diversity and variety of life on Earth, and also the cultural richness of human existence.*]

Matt: And this wasn't even their J-O-B, job, right? They weren't getting paid per se, they were getting reimbursements for the money that they spent along the way, but mainly this was something they were doing for NASA pro bono. And you could say for the whole human species, pro bono.

Emily: Yeah, and as cool as this project was, it was not glamorous work.

[ARCHIVE CLIP, Ann Druyan: *My job as creative director was schlepping to sound studios all over New York and various other places.*]

Matt: Ann is doing a lot of cold calls, and she's also showing up at people's offices, trying to make the right connections to get stuff that they want for the record.

[ARCHIVE CLIP, Ann Druyan: *"Hi, my name is Annie Druyan, and I'm working on an interstellar message that NASA is sending with the two Voyagers spacecraft." Click. Hang up.*]

Lizzie: I mean, this is either like an incredibly creative scam, or just a very kooky person who somehow got my number. Or like the 1970s' equivalent of, like, "Hello, I am a Nigerian prince."

Matt: [laughs]

Lizzie: People just—that must've—I can understand why people probably hung up.

Matt: Yeah. The way that Annie tells it, it's kind of like, "Well, if NASA really wanted this from me, they wouldn't have sent a girl." Which is just misogyny of the time, right?

[ARCHIVE CLIP, Ann Druyan: And I remember being thrown out of this guy's studio, saying "NASA sent a little girl to talk to a big soundman like me?" Though his voice thunders, I still remember. It just echoes in my brain. There was a lot of that.]

Lizzie: But even with "big soundmen" in the way, the recording started to come together. And Annie's big responsibility was this 12-minute piece of audio called a "sound essay," which was basically a montage of the evolution of life on Earth. And this is my favorite part of the record.

Emily: Okay, so how do they make this sound essay?

Lizzie: So they started with a big brain dump.

Emily: All good projects start with a big brain dump.

Matt: Yeah, exactly.

Lizzie: There was probably a whiteboard involved. Yeah. They—they all sat in the same room.

Emily: Chalk—chalkboard, Lizzie. It was the '70s.

Lizzie: You're right! Chalkboard. Sorry. No whiteboards. There was a big chalkboard.

Matt: There was a lot of cigarette smoke. I'm sure.

Lizzie: And, and what—what I've heard delightfully described as "group onomatopoeia."

Matt: That's beautiful.

Lizzie: I didn't make it up. It's from the book, *Murmurs of Earth*.

Emily: Which is a great resource if you want to learn even more about the making of the Voyager Golden Record.

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Lizzie: Yeah, so Annie took this list of all the sounds that they could think of, and started trying to find them all. So she gathered them from scientists at NASA, National Geographic Society, the Library of Congress, from the sound effects archives of a record company that agreed to help. And eventually, the sound essay was organized chronologically. So I find this really interesting because yeah, you need some sort of governing structure to put these sounds together, so she decides to begin with the beginning of time, with tones that represented motions in the universe.

Lizzie: And then moving on to weather and volcanic eruptions and earthquakes. And then teeny tiny animal sounds, and then large animal sounds. And then here we come, the humans. And then there's fire and speech and tools and the noises of early industry. We've got the Industrial Revolution in there, and then communications like Morse code. And then all the modes of transportation, like planes, trains, automobiles, ships and horses, all the way to the Saturn V liftoff. And it wasn't strictly chronological because the essay ends with a kiss, which I think has been happening, like, before the Industrial Revolution, for example.

Matt: We assume. [laughs]

Lizzie: We can assume. I hope!

Emily: Possibly. Probably.

Lizzie: The sounds of a newborn baby. And then the next to last sound is my favorite thing on the whole record, and it's Annie's brainwaves.

[ARCHIVE CLIP, Ann Druyan: And I said, "Well, what would happen if I was to go to a place where I could be completely sensorily deprived?"]

Lizzie: What if she blindfolded herself, went into a soundproof room, and hooked herself up to machines that could track her brainwaves and heartbeat—maybe even her rapid eye movement.

[ARCHIVE CLIP, Ann Druyan: Maybe every single message that my body was sending. And if I were to meditate for an hour, do you think it's conceivable that our extraterrestrial could decrypt what I was thinking? Because if that's possible, I would like to create a mental itinerary of the story I want to tell. And Carl, I can still see his very handsome face looking at me. I'm looking up at him—he was taller than I was. And I see this smile, a glow. And he just looked at me and he said, "You know, a billion years is a long time, Annie. Go do it."]

Matt: She meditated about the history of the planet and the beauty of the planet, but she also thought about the sorrow and the heartbreak that was being experienced in the world in the 1970s. And then, you know, she also thought about love, which was something she was experiencing in that moment.

Lizzie: Yeah, this is—okay, so after meeting at Nora Ephron's dinner party and continuously working on these projects together, running around gathering sounds and collaborating, Annie at this point realizes that she is in love with Carl Sagan.

Matt: Yeah. And it's a sweet story because they kind of both figure it out at the same moment.

Lizzie: Annie had been on the hunt for this particularly hard-to-find piece of Chinese music for the record, and when she found it she was so excited she wanted to call Carl Sagan right away and tell him. So she called him up and he wasn't in. But ...

[ARCHIVE CLIP, Ann Druyan: And he called me back a few hours later. I was in my apartment on West 74th Street. And—and within 30 seconds we had told each other how we deeply felt about each other and decided to marry. Which was pretty crazy because he was married and I was very much involved with someone else. But, you know, I can only say that it was like making a scientific discovery. The closest thing for me to making a scientific discovery, and affirmed every moment, every heartbeat ever since. And—and, you know, it's an amazing thing to know that the recording of my feelings at that moment are the most distant objects ever touched by human hands. Nothing we have made has ever gone as far as the Voyagers.]

Lizzie: That—I don't know. Guys, this is so romantic. I'm such a sucker. I can't handle it.

Emily: [laughs]

Lizzie: I mean, what is more human than falling in love—especially complicated, messy love? It's like, the most mysterious and human of all feelings. And to think that that experience is encoded in sound for an extraterrestrial to discover and possibly decode if they can figure out how to build a turntable? I love it.

Matt: Yeah. No, that's—that's really an incredible thought, right? Like, of all the things that could be sent out there, the brainwaves of a woman falling in love, I mean, that's pretty cool.

Lizzie: The sound essay were not the only sounds on the record, because we could never represent humanity without including music. So choices of music were finalized by the whole

group, and then some outsiders, including huge contributions from the ethnomusicologist, Alan Lomax. He spent his life traveling around the world recording traditional music—everything from Delta blues to Bulgarian folk songs. And he was a big help.

Matt: Yeah. And, you know, a lot of that did come from those conversations that Annie had with Alan Lomax. And by the way, a lot of the music that Lomax recorded while he was traveling around the world collecting music and sounds is now in the Smithsonian Folkways collection. We should sort of give a shout out to that as the repository for a lot of that work these days.

[ARCHIVE CLIP, Ann Druyan: Alan Lomax was a person of very deeply-held beliefs about the theoretical basis for the kinds of music that different cultures make. And I remember him playing the Bulgarian shepherdess Valya Balkanska's amazing piece that of course ended up on the record. And here is a shepherdess standing on a mountaintop, singing with all her heart. And she was singing with the hope that there was a shepherd or a shepherdess on another mountaintop, which seemed so perfect in terms of what we were hoping to do with Voyager. We were standing on the mountaintop of science and technology, and singing with all of our hearts to the beings of a distant place.]

Lizzie: Man, I got goosebumps.

Matt: Yeah, it's pretty incredible. I mean, thinking about intelligent civilizations and their cultures being sort of, you know, separated by these unimaginable distances, right? In this case, you know, our mountaintops are our planets orbiting stars, and the next nearest intelligent civilization, who knows how many billions of miles away that is. That mountaintop might be very, very far away.

Lizzie: This is just one of 27 different pieces of music on the Voyager record, from Mozart to Bach, Beethoven, Stravinsky, folk music from Georgia, Peru, China, India. And then Louis Armstrong and Chuck Berry.

Matt: Yeah, one of my favorite pieces of music that's on the record is "Johnny B. Goode" by Chuck Berry, which also features in the time travel movie *Back to the Future*, of course. It's a very important piece of music. And one of my favorite things, though, about this is that this is the part that kind of caught the public eye, and there's this really great joke from *Saturday Night Live* of that era with Steve Martin hosting and reporting on getting a message back from the aliens.

[ARCHIVE CLIP, Steve Martin: It may be four simple words, but it is the first positive proof that other intelligent beings inhabit the universe.]

[ARCHIVE CLIP, Jane Curtin: What are the four words, Kockua?]

[ARCHIVE CLIP, Steve Martin: "Send more Chuck Berry."]

Matt: I love the cultural resonance of that. It's fantastic.

Emily: To me, it feels like an insurmountable task to not just distill the global historical record of music into what's, you know, not a lot that's being sent out into space, and trying to be a good representation of time and culture and musical type. I don't think I could have done it.

Lizzie: Oh, I definitely could not.

Matt: Nope.

Lizzie: But there's more than just sounds on the record. When we come back, we'll talk about the pictures that sum up humanity—including a pictorial guide to eating and drinking. That's coming up after the break.

Lizzie: We're back. And I'm joining the hosts of the Smithsonian National Air and Space Museum's podcast, AirSpace, to talk about the Voyager Golden Record, a kind of "Hi, my name is" name tag stuck to the side of the Voyager spacecraft containing sounds of Earth. But that's not all.

Matt: There are also 118 images that are digitally encoded onto the Voyager Golden Record. And, you know, the fact that they're digitally encoded on a phonograph record I think is super cool. And the ability to do that was completely new back in 1977. And the pictures they chose to include show people and animals and nature going about their daily life. Some of the images are anatomical, showing the human body, how it works. Some were scientific, showing things like DNA, structures of chemicals and atoms. So you've really got, you know, a pretty big mix of things. And Emily, I know you have a favorite in here, a series of images.

Emily: Yeah, I do. So I was scrolling through, and I came across this one of three different people eating. So there's somebody eating an ice cream cone, somebody eating a sandwich and somebody drinking water out of this kind of cool-looking jug thing. And it occurred to me that just as a lot of the images are kind of showing the anatomy of a human and essentially mammal reproduction, it occurred to me that an alien might not be eating with a mouth. They might not have a mouth.

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Emily: And so I spent a lot of time looking at this image—which is part of why it was my favorite—thinking about is there a sandwich-type thing in most cultures such that this guy eating a sandwich is actually a great representation of pan-cultural foods? So then I started going down a rabbit hole of, like, what constitutes a sandwich, which is another podcast altogether.

Matt: Well, you know what I love about the guy eating the sandwich is that he's taken a bite of one side and now he's turned it around to take a bite out of the other side. And I've never seen anyone eat a sandwich like that. But is it to demonstrate what a bite mark looks like? Is that what that's for?

Lizzie: No one eats a sandwich like that. It's not representative.

Emily: Yes! That's what I thought. Yes!

Matt: [laughs]

Emily: When somebody gives you the money bite of a sandwich, like, you have to take it, but you don't, like, do that to your own sandwich. Like, that's just—it's weird to take, like, a good money bite on one side and then, like, turn it around because it's gonna be all crust. I don't know. So I thought that this was what was going on was that you now have this sort of U-shaped chomp mark out of one side of the sandwich, in the same way that the woman who's eating an ice cream cone, she's shown, like, licking the ice cream cone.

Lizzie: Actively licking it.

Emily: So that you know that there is a tongue in a human mouth, which is part of the chomping process. In the same way that the drinking, I thought, was really unusual because it's kind of somebody's pouring out water out of a vessel from above them so their head is kind of tilted back and catching the water. And I felt like that doesn't seem like how we drink water. But then it also was like, well, you're trying to show that the water goes into the mouth and kind of goes down into you. And so it actually sort of made sense why they were doing it. And when you think about 118 images to represent the human diversity, the cultural diversity, the natural diversity, the technological advances that we've made, you are incredibly limited, and you have to do a lot with every single picture.

Lizzie: But they did a pretty amazing job. There are pictures of Earth, the Moon, a few of our planets that sort of—with reference to the solar system chart as it appears in another image.

And then yeah, there's people planting seeds for food, walking on the Great Wall of China, dancing. There's a person holding a frog, and a newborn baby with the cord still attached. So lots of different views of humanity, but not a full representation because they did wrestle with this idea of what aspects of humanity do we want to put forward and send out into the cosmos?

Matt: Right. How do we make a good first impression?

[ARCHIVE CLIP, Ann Druyan: Do we tell how messed up we are? Do we tell how badly we are failing as a species at the entry level requirement of not fouling your nest and making it uninhabitable for your children and grandchildren? Do we tell, you know, about the fact that one in five of us at that time was going to bed hungry? Hungry to the point of near starvation? So we had this debate that lasted much of the night, and it was: do we put our best foot forward, or do we show them the Belgian Congo, Auschwitz, Cambodia? And it was Carl's view that when you first meet someone, if you're in your right mind, you don't immediately tell them, you know, the things you're most ashamed of. You try to put your best foot forward to establish a means of communication and a kind of mutual understanding. And that was the view that won the day.]

[ARCHIVE CLIP, Lawrence Azerrad: My favorite thing that's on the record is what's not on the record. They made a conscious decision not to include war, demagogues, tyrants.]

Matt: This is Lawrence Azerrad. He's one of the team of people who, 40 years after it was created, put together the first commercially-available pressing of the record. He's co-founder of a design agency called Macroscopic.

[ARCHIVE CLIP, Lawrence Azerrad: I'm a creative director, a curator, an author, and two time Grammy award-winning art director in the music industry. One of those Grammys is for my work on creative directing and producing the Voyager Golden Record 40th anniversary edition, the first edition released here on Planet Earth.]

Emily: I think Lawrence's project is really interesting because he was one of a group of people who sort of saw the side of the Voyager Golden Record project that was for Earth's people, and really felt like this was something that should be shared more broadly.

[ARCHIVE CLIP, Lawrence Azerrad: Many people, including Carl Sagan himself, wanted to publish—publish it as a regular record. But a lot of, you know, record labels really didn't see a commercial viability for this. You know, this was the era of, you know, Michael Jackson and "Thriller" or, you know, Fleetwood Mac and "Rumours." You know, who's gonna buy a record with, you know, Kazakhstani folk music and, you know, Solomon Island pan pipes.]

Emily: The Kazakhstani folk music and Solomon Island pan pipes and everything else that

was a final selection for the record was pressed into a wax mold that was used to cast the 12 original records in a gold covered copper alloy. Two were sent to space, obviously, and the other ten were given to President Jimmy Carter, the Library of Congress, a bunch of NASA centers and one—Matt Shindell, curator—came to the National Air and Space Museum.

Lizzie: Were you there to receive it? What was it like? How did we get it? I have questions!

Matt: I was, like, one year old when we got that, so I had not yet started working at the museum. But I have talked to people who were there when we got the record.

Lizzie: Hmm. So was that a big deal, like trumpets, fanfare?

Matt: Yeah, it was—it was a pretty big deal. I've read the letters, the correspondence that happened between NASA and the museum. They wanted to sort of have a special luncheon and present this directly to our museum's director at the time, the Apollo astronaut, Michael Collins, on February 16, 1978, from NASA administrator Dr. Robert Frosch. We already had a Voyager test model from the Jet Propulsion Laboratory as the anchor artifact in the Exploring the Planets gallery, so the record became part of the way that we showed the public how we've explored the planets and what we've sent out into the planets. It was part of the story we told from the very beginning.

Lizzie: So can you see the Voyager spacecraft at NASM today?

Matt: Yes. So we still use our Voyager test model as the large anchoring artifact of that gallery because it remains to this day, even though we've sent so many missions out into space, one of the best, most successful space exploration missions of all time. As Emily said earlier, she's still using data that it collected of the outer planets. And the truth is we just haven't sent enough—I'm sure Emily would agree, enough spacecraft to the outer planets and to the moons of those planets yet, to this day. And so the Voyager data, not only did it sort of break new ground, but it remains very important today.

Lizzie: And so you're saying the Voyager Golden Record remains the "gold standard" of interstellar messaging?

Matt: [laughs] Absolutely. Yeah.

Emily: [laughs] It totally is.

Lizzie: So the Voyager spacecraft are still moving outward into the universe, right? I think Voyager 1 is, I read, 15 billion miles away, and Voyager 2 is over 12 billion miles away?

Emily: Yeah. And actually, in getting ready for this episode, I had to peek at the Deep Space Network, which is this network of satellite dishes here on Earth that we use to communicate still with Voyager 1 and Voyager 2. And so these spacecraft continue to provide data to us, and I think to consider that there's a robot, a pair of twin robot buddies that we built in the 1970s that not only have had this enduring legacy of sort of holding a mirror up to humanity and letting us think about what we can be and what we are, it's still serving the scientific community and really providing us a lot of answers to questions we've had for a really long time.

Matt: Yeah, and even outside of the scientific community, people still care about Voyager and the fact that they're still out there. Any time the Voyagers have any kind of technical glitch—which does happen—it gets very widely reported and it gets such a response from people who read those headlines online. You know, tons of comments about how we can't let Voyager die. We have to keep it going. Scientists have to find a way to fix them, right? It's such a part of our awareness of how we explore space, what we're doing in space.

Matt: The fact that those things go back to the earliest part, almost the earliest part of robotic exploration of the solar system is kind of cool, right? That we still have these things out there working. It really means something to everyone, not just to the scientists.

[ARCHIVE CLIP, Lawrence Azerrad: I believe, and ideally the relevance will persist long after we've lost contact with the Voyagers, it's, you know, the same as like this kind of totem, you know, you go, you see these Machu Picchu, these pyramids, the cave paintings at Lascaux. You know, what are these things that we did to kind of say something to other people in other times?]

Lizzie: It's interesting to think about how, although these records were pressed almost 50 years ago, when I think about the kinds of sounds, especially, that are in that audio essay, and the kinds of things that this team chose to include, I don't know that a whole lot would change. I mean, yes, probably some of the music would be updated, but in terms of who we are as a species at the basic level, you know, the uncut umbilical cord and the mother and child, and laughter, and this phenomenon of falling in love, none of that stuff has changed. And I think it's kind of a helpful reminder that the exercise of trying to represent ourselves is probably a good one to go through every now and then.

Emily: Yeah, absolutely. I totally agree. I think one of my favorite parts about Voyager is the Golden Record was an incredibly important part of a very carefully designed mission, right? The fact that it's out at the far reaches of our solar system trying to figure out where the edge is so it can head out into interstellar space, that was by design. There was an enormous amount of thought that went into that. 50 years ago we were thinking about that. And it wasn't just about the science, right? It was about what it would mean to humanity. And I think that's an incredible feat of human ingenuity to think about this from so many different angles.

Sidedoor: Season 11, Episode 19 – Space Jams

Lizzie: I feel pretty good about this mixtape.

Emily: Just wanna pop that in the eight track player.

Matt: Yeah.

Lizzie: Yeah. I feel like this is an okay representation. I think we're all right.

Emily: We did good!

Lizzie: You've been listening to a special collaboration between Sidedoor, a podcast from the Smithsonian with support from PRX, and AirSpace.

Emily: AirSpace is from the National Air and Space Museum. It's produced by Jennifer Weingart and mixed by Tarek Fouda, hosted by Dr. Matt Shindell and me, Dr. Emily Martin. Our managing producer is Erika Novak. Our production coordinator is Sofia Soto Sugar, and our social media manager is Amy Stamm.

Lizzie: Sidedoor is produced by James Morrison and me, Lizzie Peabody. Executive producer is Ann Conanan, and our editorial team is Jess Sadeq and Sharon Bryant.

Emily: A big thank you to our guests in this episode, Ann Druyan and Lawrence Azerrad. Additional thanks to John Lomborg.

Lizzie: If you enjoyed hanging out with Matt and Emily, there's more AirSpace to be had. You can find a link in our show notes, or you can subscribe wherever you listen to podcasts by searching "AirSpace"—all one word. And find them on social media @AirSpacePod.

Lizzie: Our episode artwork is by Dave Leonard. Transcripts are done by Russell Gragg. Our theme song and episode music are by Breakmaster Cylinder.

Lizzie: If you have a pitch for us, send us an email at Sidedoor [at] si [dot] edu. We'll be back in two weeks with a regular episode of Sidedoor. In the meantime, I'm your host, Lizzie Peabody. Thanks for listening!

[ARCHIVE CLIP, Ann Druyan: "NASA sent a little girl to talk to a big soundman like me?"]

Matt: [laughs]

Lizzie: Big soundman? Don't let Sidedoor producer James Morrison hear this. He's gonna change his title and email signature immediately to "Big Soundman." Yes.

Matt: Big Soundman?

Lizzie: I'm kidding. I'm kidding. He would never. But I'm gonna be "Big Soundwoman."

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