

Houston Asian American Archive
Chao Center for Asian Studies, Rice University

Interviewee: Leroy Chiao
Interviewers: Mary Claire Neal, Mei Leebron
Date/Time of Interview: June 18, 2019
Transcribed by: Mary Claire Neal, Mei Leebron (6/20/19)
Edited by: Angela Hui (6/25/19)
Audio Track Time: 46:37

Background: Leroy Chiao was born in Milwaukee, Wisconsin in 1960. He spent most of his childhood in Danville, California with his two sisters and his parents. He was eight years old when he decided he wanted to be an astronaut after watching the Apollo 11 moon landing. He earned a BS in chemical engineering from the University of California, Berkeley, and an MS and PhD in chemical engineering from the University of California, Santa Barbara. He was hired by NASA as an astronaut in January of 1990. He flew on four space missions: STS-65 *Columbia*, STS-72 *Endeavor*, STS-92 *Discovery*, and ISS Expedition 10. His post-NASA career has involved leadership positions in technology startup companies, teaching, consulting, and public speaking. He has used his platform to advocate for improving relations between the US and China through collaboration in space. He and his wife have twin children.

Setting: This interview was conducted on June 18, 2019 in the Digital Media Center (DMC) of Fondren Library. Leroy Chiao discussed his childhood, career, family, and legacy. The interview lasted about forty-six minutes.

Key:

LC: Leroy Chiao
MN: Mary Claire Neal
ML: Mei Leebron
—: speech cuts off; abrupt stop
...: speech trails off, pause
Italics: emphasis
[Brackets]: Actions [laughs, sighs, etc.]
(?): Unclear word or phrase

Transcript:

LC: So do you want me to look at you... while we film or...?

MN: Whatever you're comfortable. [**LC:** Okay, doesn't matter, okay.] It's just like it's a conversation. Yeah. Okay, so—

LC: So we'll just ignore the camera. [**MN** and **ML** laugh]

MN: Right. So, today is June 18, 2019. We're here at Fondren Library with Houston Asia—Asian American Archive. My name is Mary Claire Neal.

ML: My name is Mei Leebron.

MN: And we're interviewing Doc—um Mr. Leroy Chiao. Okay, so can you just start off by telling us when and where you were born and how your family ended up in Danville, California?

LC: Sure. I was born in Milwaukee, Wisconsin in 1960. My parents both immigrated to the U.S. Uh, originally both were born in China in Shandong province and, uh, they, uh, both ended up in Taiwan after the war, met each other, uh, at university there, and then by the time I was born, they had immigrated to the U.S. So we, uh, progressively moved westward. Uh, lived for a while in, in Wichita, Kansas and then, uh, from the age of seven I pretty much grew up in California, uh, San Francisco Bay area.

MN: Okay. Do you have brothers and sisters?

LC: I have two sisters: one older, one younger.

MN: Okay, um [LC clears throat], do you have any early childhood memories either from Milwaukee or Danville?

LC: Uh, yes actually. Uh, so you know, I have a few memories of, of being in Milwaukee and even in Wichita and then, uh, of course growing up in California. I have a lot of memories.

MN: Mhm. Um so, what were some of your favorite teachers or subjects [LC: Well I—] like early, early on as a kid?

LC: Yeah, no. I remember in first grade, Ms. Link. I had a big crush on my first grade teacher. [MN laughs] And, uh, it was a big thrill because we got to invite her over to our house for dinner [MN: Oh] and that was a pretty neat thing. And—and I asked for and received, uh, one of her class, you know, the photos that we got at school and they also took photos of the teachers. So she gave me one of her photos that I put in my photo album [MN: Wow] [laughs].

MN: Is that something you did, like, as a tradition with your teachers?

LC: No, no, no. She was just, uh, I don't know why but I had a big crush on her [MN: Wow] in first grade. Yeah.

MN: Wow. [LC laughs] So, what kind of values or beliefs were you raised with as a child, whether through your school or your parents [LC: Mhm] or your community at large?

LC: Yeah, so my parents were very much Chinese, of course. They came from China, came from, um, immigrated to Taiwan, went to Taiwan, they immigrated to the U.S. Uh, but they also thought it was important that we, their children, assimilate into the American mainstream. So uh, so we kind of grew up with one foot in each culture. And so, you know, the Chinese values that were instilled were of course, uh, you know, integrity, honesty, hard work, uh, doing well in school, and making something of yourself, you know. And then, uh, kind of the—the, uh, the nice blend with the American culture. A lot of them overlap, like the honesty and the integrity but also, uh, you know, being creative and thinking outside the box and taking risks. Things like that.

MN: So did you kind of—did that make sense to you or did you ever challenge any of those values [LC: Uh, no, I wouldn't say I really challenged them, you know] as you grew?

LC: Uh, my parents wanted us to speak Chinese and so we did speak Chinese at home [clears throat]. Although, as I'm finding with my own kids they, they really don't want to speak Chinese at home. I really don't—didn't want to either. Uh, but uh, my parents, it was important. They used to fine us, you know, five cents, ten cents for speaking English at home. Uh, but uh, so I guess in a way it was kind of challenging in that way. But uh, otherwise, you know, I saw the value in—in what they were saying.

MN: Mhm. Okay, uh, let's see. Um, so who were some of your best friends growing up?

LC: Uh, so I remember some good friends when I was very young, you know. Uh, uh, some people in uh Wichita. And when I left—we left Wisconsin when I was three so I really didn't have any friends there. Uh, but uh, by the time I was you know, five or six years old, I had some friends in the—in the neighborhood growing up. So, I remember a guy named, uh, Morgan, uh, Kr— you know, that went to school with me. A guy that lived across the street, Lance. You know, I remember him. Uh, of course I don't really keep in touch with them anymore. But—but actually after I moved to California, I had some—have some friends that I do still keep in touch with from you know, age of seven, eight, kind of thing.

MN: Wow. Um, so what did you imagine yourself being in the future? I—I think you were probably eight years old [**LC:** Mhm] when Apollo 11 happened? [**LC:** Yes, right] Before that, did you have any [**LC:** Yeah] big dreams?

LC: Well, you know, I always liked technical things. I like building things and taking things apart. So, uh, engineering was kinda the way I was steered and it was a natural fit for me. Uh, but uh, yeah, when Apollo 11 landed on the moon—I'd always been interested in airplanes and rockets. But after, after watching Apollo 11 land on the moon then that's when the dream of becoming an astronaut started for me.

MN: Did you talk to your family about that or [**LC:** I did, yeah] or your parents or—?

LC: Yeah, and uh [clears throat], you know, of course, a lot of, all the young people back then—most young people wanted to be astronauts in that—during that period of time. But most—but I kind of took it seriously. It was always in the back of my mind. And I think my—my parents probably thought it was kind of cute that I wanted to be an astronaut. But they didn't really think it was a serious [**MN:** Mhm] ambition [laughs].

ML: Did they [**LC:** clears throat] change their view on that over time or...?

LC: Uh, not really. They thought it was important that I become an engineer which was kind of a prerequisite or at least technical you know, science or technology some kind of science or technology degree. So, they were happy that that was driving me towards getting an engineering degree. But then um, even after I applied to NASA, they thought, "Oh, that's nice." [**ML** laughs] [clears throat] You know, and uh, I don't think they actually believed I would get in, you know? [laughs] And then after I did, of course they were—they were happy about it. But uh, my dad even you know, being Chinese, kind of pulled me aside, said, "Okay, well go do this for a few years and come back and do a real job. You know, go back to engineering." You know? [laughs]

ML: Mhm.

MN: Did you have [LC clears throat] any, any especially important role models or even, like, music or books that really got your attention [LC: Well, you know—] growing up?

LC: I—so I was pretty much the you know, the—the—the nerd kid that was interested in as I said, science and technology and things like that. So, I would read a lot of technical things. Uh, but even as a kid I would read, uh, books about airplanes and, and one of my favorites was one of the series the LIFE series of books I think that became TIMELINE but back then it was just LIFE. And there was one about flight and one about um, uh space. And so, those were well thumbed and pages kind of you know, loose some things like that 'cause I read them so many times. And so I remember those, those books fondly.

MN: Mm. When was that, like, elementary school?

LC: It was probably, like, 19, you know, 67, 68. [MN: Mm] So I was like seven, eight years old. [MN: Wow] That—that you know, seven to eleven kind of age range [MN: Uh huh] Yeah.

MN: Okay. [LC sniffs and clears throat] Um, is there a certain time in your life that you think you came of age? Is it later or earlier?

LC: I was definitely more of a late bloomer. Uh, you know [sniffs], uh I was always the youngest kid in my class. My—my birthday's in August so being properly Chinese my mother thought it would be good to start school early rather than later. And uh, and so because of that, I was also the smallest kid [ML: Mm] always in my classes, you know. And so, um, you know, especially in the 60s it was not easy because I was the only kid that looked different in my school and [ML: Mhm] so you know, that wasn't always an easy time for me. But um, so I was definitely more of a late bloomer. In fact I would say probably didn't really bloom until I got to graduate school. [MN: Mhm] Yeah, after I finished my undergraduate degree.

MN: So when, when you went to college, how did you decide where to go?

LC: Uh you know, I wanted to study, um, engineering, and we were living in California, and, uh, Berkeley was right there. And it was an excellent, it is an excellent engineering school. And so that was my first choice was to go—go there. Um I applied to a number of different schools as well, I mean, all the University of Californias and a few others. Uh, but when I was accepted by Berkeley, I decided to go there.

MN: How far away was that from your home and did you visit?

LC: Oh, not very far. It's about 35 miles, but I, I lived on campus, I lived in a— I rushed a fraternity. I lived in a fraternity. Yeah.

MN: Was that a new, exciting experience?

LC: It was. Yeah, it was a new and exciting experience [MN laughs]. Uh, you know, so uh certainly, certainly living with— Well, how many of us were there at the time? Probably about thirty of us, you know, [MN: Mhm] uh, it's definitely different than living at home [laughs].

MN: Um, [LC clears throat] so during your undergrad, what most excited and worried you and how did you kind of spend your time?

LC: Well, I think that freedom was exciting, you know, living away from home for the first time and, and uh making my own decisions and doing things. But at the same time it was a little terrifying, because, uh, actually, you know, university turned out to be a lot harder than high school [laughs]. And so I was kind of shocked when I first got there, because I was working harder, studying harder than I ever had, and I was getting—starting to get bad grades for the first time in my life, you know. I got a C in physics my first quarter, which was shocking, because, you know, it was the—the science and and the, uh, math courses were always what I was strong in in school, you know. So uh, of course, now I was being around, uh, a lot of very smart kids. And, uh, so I had to kind of up my game, I guess. **[MN: Mhm]** Yeah.

MN: Did you feel like people knew you well as a person there? Did you feel comfortable there socially?

LC: Uh, yes, and no, I think it's kind of, uh, hard to answer because I think you're developing. I was certainly developing as a person so you know, developed for uh—being especially being a late bloomer, I think. Uh but um, yeah, people—I mean, you know, I had a few close friends, mostly fellow engineering students, and we're trying to, trying to get through all our courses and uh do our problem sets and exams and things like that.

MN: Mhm. So this is right when you submitted your application, right?

LC: No, I—I actually submitted my first application in graduate school. **[MN: Okay.]** And so I knew I hadn't quite met all the requirements, because there's a whole scale of how many degrees you have, and then how many years of work experience and then kind of balance that and—and I didn't quite meet the requirements. And so I knew I was early in applying, but I put an application in anyway. And, uh, that was actually—I had the application and had a, you know, was working on it, uh, when the Challenger accident happened back in 1986. And so, um, I actually submitted my application right after the accident you know 'cause I hadn't quite finished it yet. But it didn't deter me from, from turning it in. So that application was not successful, because I had not, you know, fulfilled the requirements. So I got a nice letter back saying, “Well, you don't quite qualify yet. So apply again, when you do qualify.” But at least I wanted to get myself on their radar.

MN: Mhm. So when, when um, when you went to grad school, is that something you planned to do? For a long time? **[LC: Mhm.]** Okay.

LC: Yeah, yeah, I had actually applied to work after, uh, for (?) jobs. After—while I was getting my undergraduate degree. And I did have a couple of job offers. But then my father convinced me to go to grad school. He said, “Look, if you don't go, now, you're, you need to get out and start making money, you're going to get comfortable and you're never going to go.” So he kind of convinced me to go. And that was the right decision. I went down to Santa Barbara, and got my doctorate in chemical engineering and—and, uh, really enjoyed it. And, uh, that really set me up, I think, that qualified me even more to—to apply to NASA later.

MN: So this whole time, like, through middle school and high school and college, was that always on your mind? Or did it come and go in waves or...?

LC: It was always in the back of my mind. You know, I mean, even when I was studying my—for my degrees, I would kept coming back to, well, what do I want to do with these degrees? And uh, you know,

I thought about some career paths, it would be interesting. Uh, but ultimately, I said, you know, ultimately, I do still want to apply to NASA and, and hope that works out.

ML: S—

MN: Did the reason or motivation for it change over time as you got to know, as you just matured, and got to know...?

LC: Uh, I don't think that—I don't think it changed, you know, I always wanted to, uh, to experience flying into space and being part of a crew that—that did things like that. Uh, but at the same time, you know, I—I was very realistic about the opportunities, you know, there's so many qualified applicants. And, and so few positions that I knew that just from the numbers game that it was, you know, it would be, uh uh you know, a challenge to—to actually be one of the ones getting selected. [**ML:** So—] So, yeah.

ML: So, where were you when you first got the news and what was going through your head when you got the news?

LC: Yeah, so it was very exciting because I put my application in around February of 1989. And then in the middle of the summer, I got a call from NASA. And they said, “Well, you know, you—you checked on one of the boxes that you didn't want us to contact your current employer, but we really want to. Can we do that?” I said, “Yeah, you can”. And so they called my boss and wanted to know what kind of person I was and all that, you know, and so that was interesting. And then in September, they called me at home and asked me if I would come to Houston to interview. So that was really exciting. You know, and so I came out, spent a week out here, and interviews, mostly medical exams. And then, uh let's see, January of '90 is when we got the phone call, inviting me to—to join the next class. And so that was a—a really good day, you know [laughs], very exciting, was very early in the morning, because it was probably about 9 AM here in Houston, or maybe even earlier, maybe 8:30 or so. And so I was living in California, so it was two hours earlier. So they woke me up, you know, [**MN:** Mhm] they were called the uh—selection committee called me in and, and, and uh talked to me for a moment and then asked me if I'd like to join this class. And I said, “Of course, yes, of course, I would like to.” And, and so it was very exciting. Yeah, where, you know, kind of one of those uh, you know, wanna make sure I was really awake. [laughs]

MN: Mhm. What—who was the first people you told?

LC: Uh, let's see, I think I—I think I called my parents, you know, 'cause they were you know, uh already, I knew they were already awake. [**ML** laughs] And then uh, you know um, went to work told—told my friends called my—my sisters and yeah so.

MN: All that day? That same day?

LC: Yep. Yeah, on the same day. Yeah.

MN: Wow. Um [**LC** clears throat], so how soon after that did you move to Houston?

LC: So I moved to Houston in, uh, let's see, I think it was the end of July—or end of June, end of June. And, um yeah, so I had about six months to kind of wrap up my job and, and sell my house and—er, not

sell my house. But you know, at least find a place to live down here and buy a house [MN: Mm] and then move everything down here and get set up. Yeah.

MN: So, was that your first time being that far from your family?

LC: Uh, I guess so. I mean, I was in grad school, which is Santa Barbara, you know, so from Northern California to Santa Barbara is what? About close to 300 miles, I guess, you know, but there's a little farther, but that's okay. Yeah. [MN: Mm] But actually even as an undergrad though I had spent five months, I think, doing a co-op job in Vermont, Burlington, Vermont, so I was pretty far away then.

MN: Okay.

LC: Yeah.

MN: So, going back to how you were you kind of bloomed in grad school? What, um [LC: Mhm], what was that process like and how do you think you grew and what made you more comfortable just being yourself?

LC: Uh, I think it's, um, I think part of it was, you know, kind of getting—getting a little older. And having finished my bachelor's degree, um, going, coming from Berkeley, which like I said in the early days, in the early years beat me up pretty badly. Um, coming down to Santa Barbara, I was more of a big fish in a small pond. And so I think that gave me more confidence. And I think that really was the key to blossoming, is, is having that more of that self-confidence. [MN: Mhm] And so I think that helped me in, in all ways. And uh yeah, so I think that that kind of, uh, that process was what, what led to blooming uh in graduate school.

MN: Okay. Um, so when you came to Houston, did you find a kind of like a community here? And how was—what do you think of the city?

LC: Yeah, so I came to Houston. And of course, the weather was uh pretty stifling, you know, coming from Northern California to, to the, uh, summer heat and humidity here. Uh but uh, but I liked it because the people I was with, you know, my classmates, we all kind of came from different parts of the country. So we kind of had a built-in community to begin with, uh, after moving here. And people here were very friendly, actually much friendlier than they are in the San Francisco area [laughs]. But uh, you know, the—the kind of that Southern hospitality thing. And uh so I really enjoyed it from the beginning, the only thing that was tough was, uh, how absolutely flat everything was, and—and the heat and humidity in the summer, but—but I got used to those two.

MN: So, did your class spend, like, a lot of time together from the very beginning?

LC: Mhm. Yeah, we did in the first year, first year, we were all together doing everything together, you know, in classes together, training sessions, going on field trips to the different centers and different, uh, contractors that were building components for space station and space shuttle. And uh so yeah, we—we got to be very close, yeah.

MN: So, did you get to know each other, like, on a personal level? And you knew— [LC: Oh, yeah] did—did you gossip [LC: Very much so. Very much so, yeah] did you have drama? [laughs]

LC: Uh, not a lot of drama. But um [MN laughs] yeah, yeah, not a lot of drama. [MN: Hm] But it was all good. Yeah.

MN: That's great. Um, so at what point did you learn to speak Russian?

LC: Oh, that was part of my training for the space station. So once you get a—once you accept an assignment to go work on the space station, back then you would start immediately in intensive language training. Nowadays, uh, all the astronauts begins learning Russian when they—when they come in, because we're heavily into the space station program. [MN: Mhm.] But back then, and we were still, you know, still fairly new. And so you didn't have to learn Russian [clears throat], unless you were assigned to a space station mission. [MN: Mhm.] So that began right away.

MN: So, having [LC clears throat] looked forward to this job [LC: Mhm] since you were eight, [LC: Yeah] did, did anything surprise you or catch you off guard?

LC: Uh, yeah, caught me a little bit off guard. Uh, some of the things you know, it's, it's funny, uh, you know, you have this idea that a group of people like astronauts are kind of different than other groups of people. And, s—in some ways we are, but [clears throat] in other ways, we're very much like any other group of people, you know, so you have some people with big egos, some people are you know, very humble, you have some people—Well, everyone's pretty capable, [MN: Hm] you know, but you have some people that are much more op—what I call operationally driven than others who are kind of more pure scientists, you know. And so, it's, it's, uh you have to have kind of a balance of all that, I think, to be the most effective. But it was interesting that you, uh, you know, in in a spectrum of about a hundred people, you still get that distribution, whereas I think the public kind of has an idea, and I did coming in [MN: Mhm], that we were all one very tight group, and we were all kind of the same up on this side of the—the curve. [MN: Mhm] But in fact, we're all spread out.

ML: What was the most challenging thing or situation that you have faced while doing your job?

LC: I think, uh, at NASA, you know, dealing with the bureaucracy is pretty tough. Uh, NASA has become, and—and I think all big organizations tend to go this way, they tend to become more and more bureaucratic and less efficient. Um, they're competing, uh, little fiefdoms that pop up that fight each other, you know, not necessarily for the common good. And it—it can get pretty tiring, you know, you spend a lot of energy and time going to meetings and, and doing things that you don't feel are very productive. And, you know, you get the sense of, of you're fighting the system all the time. Um, being an astronaut was also, uh, an interesting position, because we're in the public, we're held up pretty high and even within the agency, but at the same time, uh, you're also a target for a lot of people in the agency, you know, they kind of resent you. And it's, it's a weird, it's a weird mix of kind of a love-hate thing of some of the people in the agency.

MN: Ah. Um, were you— [LC clears throat] were you the only, like, son of immigrants or um, Chinese person among your class? And was that in your—how much was that in your mind or how much did it affect you?

LC: Yeah, I mean, there weren't many Asian-American astronauts, especially back then, there had been Ellison Onizuka, who was a Japanese American. He, of course, unfortunately, was killed on the Challenger accident. Um, before me, Franklin Chang Díaz had joined the Corps. He was one quarter

Chinese and three quarters Costa Rican. And so I was the—I guess I was kind of the first full-heritage Chinese-American astronaut. [MN: Hm.] And so, I was aware of that, but it doesn't—didn't um, you know, wasn't something I thought about every day. But I was—I was aware of, of that. But I was certainly not the only son of, or you know, child of immigrants that were in the Corps. Let's see, José, um and let's see who came in a few years after me. Uh, his story is very interesting. He is—he is the son of migrant farm workers in California. You know, I mean, what—what a story, he came up through the National Lab, like I did, Lawrence Livermore National Lab. And he came in a few years after I did.

MN: Okay. [LC clears throat] Um, let's see. So, um, do you just have any most prevalent or most exciting memories from that time? Any stories?

LC: Yeah, I mean, I think the most exciting is—is probably the first time I got the launch into space. And uh it was so exciting, because it was uh, we were flying on the twenty-fifth anniversary of the Apollo 11 mission. You know, so our—our mission encompassed the entire Apollo 11 mission, which is kind of neat, because so many of us, including me, were inspired by that flight. [MN: Mm.] And it's kind of interesting. Now we're looking back at fifty years, because it was twenty-fifth anniversary. Now, it's fifty years, it's twenty-five years after that. But [clears throat] you know, getting to fly during that time. And having dreamed about it for so long, and—and worked so hard, and jumped through so many hoops, and then gotten a couple of lucky breaks and, and had gotten into the program, uh, getting into the rocket for the first time [clears throat] uh, to launch and then getting up into space. And—and, you know, realizing that goal was, uh, much more of an emotional experience than I expected [MN: Mm], you know, back then, looking back at the earth was so beautiful and colorful and bright. And um, you know, that was probably the—the best moment.

MN: Mhm. How long [LC clears throat] like, for each for each trip? How long did you stay and then—?

LC: Yeah, so shuttle missions were about ten to fourteen days in duration. [MN: Mhm] And so I flew three shuttle missions before my station flight. So I had accumulated somewhere I think around thirty-three-ish, kind of days in space. [MN: Mm.] And then the—the shuttle—the station mission was six and a half months. So that flight was 193 days. [MN: Mm, okay.] And so the bulk of my time in space was on my fourth flight.

MN: Okay. And then [LC clears throat] right before that is when you got married, right?

LC: Yeah, I got married a year before I launched to the station.

MN: Okay. How did you meet your wife?

LC: So we were set up on a blind date [all laugh]. One of my classmates, uh, my astronaut classmates, his wife, um, you know, she was uh she worked as a nurse in. a dermatology clinic and, and uh my future wife came in one day, and they hit it off. And she said, “I've got some guy you got to meet.” You know, “Yeah, right. Okay.” And she called me said, “I've got someone you gotta meet.” “Yeah, yeah. Okay.” [MN laughs] Uh, but then it worked out. Yeah [laughs]. [MN: Wow.] So that's kind of one of those funny blind dates that worked out [laughs].

MN: Mm. Did you know you wanted to get married at that point, or...?

LC: You know, it's interesting, I was uh pretty much a confirmed bachelors throughout my twenties and thirties. And, and once I got into my forties uh, you know, my perspective changed a little bit. And—and I thought, well, you know, I actually want to have a family, I want to have kids and I have a family. And uh so at that point um uh, you know, I became more serious about, about uh, you know, about that. And so then once I met the person that felt right, then—then uh, you know, we ended up getting married, and we have twelve-year-old twins now, so [laughs].

ML: Wow.

MN: Okay. So um, that was what year? Sorry.

LC: 2003. We got married.

MN: 2003. Okay.

LC: Yeah.

MN: And then your last, um, expedition was 2004?

LC: Yeah October of '04 to April of '05.

MN: Okay, okay. Um, so was that different that time, since you were married, or...?

MN: Very much so, I mean, you know me (?) flying as a single guy, uh, you know, I had girlfriends, but I mean it was, uh, very different than actually having, uh, a wife at home and— we didn't have kids of course, uh not yet, and uh but uh having someone that was really worried about you, well not that my girlfriends didn't worry about me [laughs] but you know, it was a little bit different. Yeah.

ML: Are you allowed to wear your wedding ring into space?

LC: You are, yeah. [**ML:** You are? Cool.] Yeah. Yeah [laughs].

MN: Ok, um. So, I think—

LC: As long as it's not sharp. [**ML:** Yeah.] It has to go into the glove. [**ML:** Yeah] [laughs] [**ML:** No tears in the suit] You don't want to c— you don't want to cut the glove up. [laughs] [**ML:** Yeah.]

MN: Wow. Um, and in this mission, you decided to carry a Chinese flag on, right? [**LC:** Mhm, right.] So why did you make that decision?

LC: Well, on my first flight I wanted to carry, uh, let's see I wanted to carry something from the, the places where there were, you know, major Chinese populations. So, I carried a f— a, a f—small flag from China, um I carried a um, uh uh a rock carving of the symbol of Hong Kong from Hong Kong. And then I wanted to carry a Confucian scroll from, from Taiwan, and so there were some political issues going on because State Department [**ML:** Yeah] has to approve all these things and so, um, the scroll actually flew, kind of informally, in what's called a "crew support locker." And so it was not on the official manifest because of the sensitivity of China and Taiwan. And um, but yeah so I—I f—I really wanted to kinda, you know, um, because I was the first, you know, full-heritage Chinese American astronaut, I wanted to kind of, you know [clears throat] represent the major population centers, Chinese people.

MN: Did you talk to your parents about that?

LC: Uh... I don't think I really did [clears throat]. [**MN:** Mhm (laughs).] You know, I mean think I just kind of did it. [**MN** and **LC** laugh.]

MN: Did you, like, receive any feedback or anything from Chinese Americans?

LC: Oh yes, you know, I—I received, well actually the biggest um, uh biggest feedback I got was from Hong Kong. They were very thrilled about the whole thing and back then the—the governor of Hong Kong was Chris Patten, that was back in 1994, 1995, before it reverted back to China. And so he arranged for me to, to come and visit Hong Kong and go on a whole tour through Hong Kong and, and talk to universities and schools and things like that after the flight. Uh, Ch—Taiwan didn't really have much of a response because they were not supposed to. I guess they were told not to [laughs], uh, by the U.S. And China was, I don't know what China was, China was kinda, they seemed almost indifferent at the time. [**ML** laughs.] Yeah it was kinda weird. [laughs] Probably 'cause they were working on their own astronaut program. They didn't really want to play me up [laughs].

MN: So with all these political things being so, like, inextricable with, with your job basically, was that—how much was that present in your mind?

LC: Uh, it was present, but I didn't worry about it too much. But uh, certainly NASA and the, and the, uh, State department did. So whenever I would be invited to China while I was, while I was a NASA employee, I was not allowed to go because they'd say, "Well, we don't wanna get Taiwan upset." And then every time Taiwan invited me they'd say, "Well, you can't go because we don't want to upset China." So I think it was just easy for them, they were just being lazy, they didn't want to work on it. It was just easy to say no [**MN:** Wow.] [laughs].

MN: So was that personal for you at all, or...?

LC: Uh yeah, I mean I thought it was unfair and, and foolish, frankly. I thought it would have been good, uh public relations and—and, you know, things like that. But um, it wasn't my decision so, I never got over to China again. I, I actually went to China before I joined NASA in '88 for the first time, and I never got back until 2006 after I'd left NASA already.

MN: What kinds of things did you do there?

LC: Uh you know, I was in, I was part of an, an organization that was kind of promoting some of the uh, like education programs in space and, you know, using space as kind of a hook. And so I participated in some of those events, talking to Chinese schoolchildren, things like that. And I met some of the Chinese space officials and was invited to visit the astronaut center of China in 2006. In fact I was the first American to go visit their center, and I got to meet their astronauts including their first astronaut and, and a few others, and kept in touch over the years, met several other, uh, important, uh, you know leaders of their space program as well as other astronauts. So we've kind of kept in touch, although these days it's a little more difficult with the—with the current government. I think everyone's a little bit nervous over there about, um, you know having too many foreign contacts. So it's kind of a—a strange time I think for China right now.

MN: So has that been a big focus of your work since leaving being an astronaut? Kind of representing those conversations, or...?

LC: Uh, I wouldn't say a big part, but it's been something that's important to me and—and I try to do you know, small, in my own small way I guess I try to help contribute to, uh, you know trying to bring our countries together, you know bring the U.S. and China together. The, uh, I'm a member of the Committee of 100 which is a group of prominent Chinese Americans. That was started by I.M. Pei and Yo-Yo Ma, you know, around 1990 after the Tiananmen Square Massacre in 1989. And trying to promote more communication and understanding and, and kind of be a bridge, you know and so, I've tried to do that through the space—space part and I've been an advocate for working together in space because looking at our example of working with Russia in space, I think that's really bettered our relationship overall. Even though our relations aren't great now, I would s—I would argue they'd be a lot worse if we weren't working on the station together.

MN: So what is [LC clears throat], um, some of the work you've done since being an astronaut or to this day?

LC: Uh, you mean, just just work uh, supporting myself? Yeah so I— [MN: Yeah, we gotta cover the career stuff (laughs)] you know I kinda work for myself. You know, I kind of do a few different things, I do a little consulting work for some of the space companies. Uh, I do some speaking, public speaking, [MN: Mm] in fact I've had my own company now for the last few years called OneOrbit. And we do corporate events, we also do sponsored education events. Uh, I b—teach part time here at Rice, you know as uh, a part-time lecturer in mechanical engineering. I help out with some of the, the lab courses and also have uh, um, have a um, have a graduate, uh, space course on design for the space environment so, uh, really it's enjoyable to come out and interact with—with students, young people, and uh, they pay me a little bit, you know I can, you know about enough to buy a parking pass [MN and LC laugh].

MN: Um, so your, when your children were born, um, what was that like and how did it change your life?

LC: That was huge. Uh, you know it was kind of interesting, 'cause I, I have two nieces who are older now. Uh, but when they were born that was quite exciting, my older sister's children. And uh, you know, being an uncle was, was great. But uh, I didn't expect how different it would be when I had my own kids. And, so when my kids were born, it might surprise you to hear this, but uh it was more fundamentally life changing and significant to me than even flying into space. [MN: Mhm] So, it's uh, it's been great. Yeah.

MN: Um, as they've grown older, how do you think they—like, how do you think their life and their being raised has been different from when you were a child [LC: Mhm], whether by values or beliefs you have raised them with, or just the social world around them?

LC: Uh no, I think, I think it's, they have come up in a different environment for sure. Uh, I don't think, I think the values are the same. I think, uh, my wife and I agree we instill the same values of being a good person. You know, I think that kind of sums it up, of integrity and honesty and of working hard and the importance of doing the right thing, you know, things like that. And so, uh, I'm very proud of who they are as young people and I think they'll stay on that path. It's very different in that my father, especially, was very strict. You know and—and uh, the answer to everything I wanted was no, you know, automatically no. [ML laughs.] And you know, every now and then I would be able to talk him around

but uh, but not very often whereas in a way, I probably, I'm sure I do, I'm sure I overcompensate a little and I say [ML chuckles] yes al—almost all the time to my kids. But at the same time, uh, uh they're growing up to be very, very nice young people. So I don't feel too bad about that [MN and LC laugh].

MN: Um, um you said they're twelve years old?

LC: Yes.

MN: Ok. What are they starting to become interested in?

LC: Well my son, Henry, ever since he was very young, like two years old, he decided he wanted to be a doctor. Was fascinated by the way, you know, living things work and organs and, uh, always asking questions. And then he got fascinated by the brain, well, how's the brain work? And so, ever since a very young age he wanted to be a—a brain surgeon. So he's still on that path, uh, wants to be a neurosurgeon. He's, uh, one of my good friends is Chief of Surgery at Henry Ford Health Systems in Detroit and so, you know, he would come visit and bring him some few things and tell him some things and so encourage him along. So he's very much still going down that path. My daughter, she's not sure. Caroline says she wants to be an engineer but I think maybe that's mostly because I'm an engineer. But—but she does like building things. Um, from a young age she's uh, uh, always enjoyed you know, uh, kind of being very creative. Uh, she also has a very artistic side though. And so, you know, um, not that that's not compatible with engineering, but, uh, but I'm not sure what she wants to do. She's—she says she's—she's—she's still working on it.

MN: And they're twelve [laughs].

LC: Yeah, they're twelve.

MN: Um, oh what was I going to say? Um... something... I had another a question about your kids, I think. Do you have anything, Mei? [MN and LC laugh.]

ML: Um, I guess how has fatherhood changed your perspective on life and on things in general?

LC: Yeah, so it's uh, of course it's a big responsibility being a parent. Uh, it's interesting, though, being a father. You know it's um, so I'm kinda, I guess I'm a little bit more big-picture, you know, whereas my wife is more kind of day-to-day and—and not that she's not strategic, 'cause she is, she's got it all planned out, where they're gonna go to school and all the activities they're gonna have and all the camps they're gonna go to and things like that. But uh, um, but I, I feel the responsibility, well, we both do, we both feel the responsibility of caring for young people and trying to bring them up in a, in a good way and in a, in a good way and—and have them, you know, become productive uh members of society. Sounds a bit like a cliché but it's kind of true [laughs].

MN: Um, do they think it's a big deal that you were an astronaut?

LC: Well it's kind of funny, when they were little, I mean of course, I have many astronaut friends so uh they were used to other people having astronaut dads you know and [MN laughs]. So, it didn't seem like that big a deal until they started going to school. And then they figured out that, uh, well, oh I guess not

everyone's dad is a—[ML and MN laugh]—is an astronaut! [MN: Wow.] [laughs] So. Um. But it's uh, you know, it's okay. I don't think it's... yeah.

MN: So, are those a lot of your family friends, and do you guys still spend time together a lot?

LC: Uh yeah, yeah, I mean some of them. Yeah, yeah, a f— lot of them have moved away [MN: Okay] but yeah. Yeah, but uh, we still see them now and then. Yeah.

MN: Um, what are your hopes for the future just in your own life?

LC: Uh gosh, my own life, so, I, I've kind of saw, seen my post-NASA career life as, as kind of bringing my, my kids along and helping them. You know and so, um, still working pretty hard 'cause I've got these two kids to support and put through college and put through the schools they're in now. Uh, but um, uh, you know so I want to be able to, uh, make sure that they get the opportunities to—to go and thrive and start their own lives and—and that's one thing people o—often ask me, “Well, are they going to be astronauts.” So well, only if they want to be. I'm not pushing them to do that, you know, I want them to find their own path and. Case of Henry, he already knows what he wants to be, so that's great but uh, you know Caroline will, I'll let her kinda find her way. So, yeah.

MN: Do you guys have relationships with, like, your extended family? Do you see them a lot?

LC: Uh my, my family lives in California so we see them maybe, uh you know once or twice a—a year, so not that often. My wife's family is kinda scattered around so we see them intermittently as well, so not really. Unfortunately, um, yeah so unfortunately we're kind of isolated here in [MN: Hm] Houston. But being in the middle of the country it's—it's easy to get to either cost or to, to different places. So it's not too bad.

MN: And then you said you'd kind of taught them Chinese, right?

LC: Yeah so they've learned Chinese. Uh, from a young age [MN: Okay] we had a Chinese nanny, and so they were—grew up bilingual in their early years. And uh, they don't really want to speak Chinese so, so I think they've forgotten a lot but it's still in there. And uh, they took some Chinese in an afterschool program that my wife started at their school. And um, then um but it's still in there 'cause I know that um when I went to college, when I went to university, I forgot a lot of my Chinese. But, but then when I went to visit China in '88, being immersed in it, a lot of it kind of came back. [MN: Mh] And so, so I'm sure that, you know, when they go to university if they want to take some Chinese classes that it'll come back. And if they ever go somewhere where they speak Chinese, in China or, or one of the other countries they'll—it'll—it'll come back.

MN: What, when did you decide that was important to you to teach you kids Chinese?

LC: Uh right away because uh I saw the value of it. Because not only, uh, speaking another language of course, you know of one of the most populous nations of the earth [MN: Mhm]. But um, it really helped me to learn Russian, I think. I know your brain gets wi—wired differently when you grow up bilingual. And that way you can except a third or more languages easily. And so, learning Russian was still a big challenge for me but I think it was easier because I was already bilingual.

MN: Um, let's see. Do you have any other interests or hobbies either that you've grown, you've picked up [**LC:** Mhm] in your adulthood or...?

LC: Yeah, no I, I've always loved flying and you know, that goes with my interest in airplanes when I was young. And so I learned to fly in grad school as soon as I finished my coursework for my PhD and passed my qualifying exam I took out a student loan, went right down to the airport and started learning how to fly. And so I've been flying now for almost thirty-five years. I've got my own little airplane, I've got a house down near NASA in a flying community. So I have a—a house with a hangar and a private runway for the community. And uh, still, still get out there and fly now and then. And when I have a business trip close by to Dallas or—or San Antonio or Austin it's easier to fly myself rather than get on Southwest. So, yeah.

MN: Anything else, any other books or music or sports or...?

LC: Uh, let's see so yeah, I like skiing. I haven't been skiing in a few years. In fact the last time is when I, I, we ran into your family [gestures to Mei] in Deer Valley [**ML** laughs]. And you know I think that was 2014. [**ML** laughs.] Uh but uh, yeah I still enjoy skiing. I'll have to get back out there. I've just been kind of busy but um, let's see what else. Um... yeah I guess that's, that's about it.

MN: Mm. Um, do you have any hopes or worries or fears for just the future of America in general or the international—in the world?

LC: Yeah. Yeah, I think you know, well, I mean, yeah I mean I, I don't want to see America become complacent, especially in places like, in areas like space exploration. And I'm glad to see that we're trying to do more. And actually I'm very glad to see other companies and people like Elon Musk and SpaceX and Jeff Bezos and Blue Origin who are, you know, commercially trying to go build a space infrastructure and to explore, you know, so I think that's very exciting. And in fact, um, I would bet that SpaceX gets to Mars before NASA. Unless they partner together. [**MN:** Mm.] You know, because uh, I've met Elon Musk a few times, I do some consulting for SpaceX and uh, you know, people have counted him out on so many things. And he keeps coming and—and achieving those things. Much—takes much more time than he estimates, but, but he ends up getting there. And so um, yeah I, I think he'll definitely get to Mars. You know, but it won't be as quickly as he says. [**MN:** Mhm] But uh, he'll get to Mars with or without NASA. But I think it would benefit to do a partnership because NASA has a lot of know-how. A lot of experience that, that can and should be drawn upon. [**MN:** Mhm] And resources.

MN: What do you think humans will do on Mars, or do with Mars?

LC: Uh, you know it's hard to say, uh, because we don't really know what's gonna come out of the exploration. I mean, I think that one of the most significant things that could come out is possibly, uh astronauts could possibly find, you know positive evidence of maybe past life on Mars. You know, maybe just microbial life, but because there's been some evidence from some of the as—you know, some of the um, uh, you know, asteroids that we think might have come from Mars that the—they indicate there could have been some forms of life, and there's been an argument, scientific argument back and forth on that. Uh there, you know, the—earlier this year, the Curiosity Rover found trapped methane in the sedimentary rocks which could indicate that there was some kind of life process going on that created that methane and that got trapped in the sedimentary layers. And so if, uh, astronauts go there someday and actually

find some kind of fossil, you know, of some simple life form, I mean, I think that would just really change the whole, [MN: Wow] change our world. The fact that we found positive evidence of life elsewhere in the universe, in fact in our own backyard. Which would suggest there's life all over the universe. Which I believe actually [laughs].

MN: Mhm. Wow.

ML: So, if your, um, if your future great-grandchildren were to watch this, [LC: Mhm] what advice would you have for them or just the future generations in general?

LC: Yeah I think it's important to be proactive t—in your life, you know figure out, I mean find your passion. Figure out what you want to do. Try to guide your life in that direction, you know plan a path, have the courage to take that path. Um, you know too—too often I think people just kind of bumble around and you know see what happens, and where I end up. And, you know, to me it's important to try to guide your life to—to where you think you want to go. And you know you'll probably end up somewhere else [laughs], but—but I think it's important to try to do that. You know and so, uh, that and, and being true to yourself. You know, being a good person, doing the right thing. Yeah, being true to yourself, making sure you take some time out for yourself to, you know, your happiness is important, too. You know, I mean, it's important to help others and serve others, but you have to help yourself as well. [MN: Mhm.] So it's, it's all a balance. I think it's a balance.

MN: Um, oh I was curious about, this is kind of out of order of the chronology but, [LC: Uh huh] in 2004, we like, we read all the, your Wikipedia page and stuff—

LC: Oh you did okay! [MN and LC laugh]

MN: And it talked about how you got to vote for the first time [LC: Yes, right!], first American to vote in space.

LC: Uh, vote for president.

MN: Oh, okay, okay.

LC: Yeah, first American to vote for president, uh, from space. Yeah.

MN: Yeah how big of a deal was that for you?

LC: Uh, it was kind of a big deal. I mean had, literally had, hadn't thought about it 'cause we were gonna leave for, for Russia, um, you know, in, in August before the election and I hadn't thought to put in for an absentee ballot, and so there was no way for me to vote unless [MC laughs], you know, and so, fortunately, one of my classmates had voted in a local election from space before. And so the mechanism was kind of set up and they just had to adapt that for a federal, you know, a presidential election. And so um, so fortunately they were able to do that. And uh, and we were able to publicize that to try to encourage people to go out and vote. Yeah.

MN: Did that change the way you look at elections now, or was it kind of a routine...

LC: No, not really. I mean, you know I've, I've voted in, I haven't voted in every single election, I voted in every presidential election [**MN:** Mhm] but not every single local election. You know but uh, but I think it's important to go out and exercise your right if you, if you have a, you know, an opinion on who you, who you want to win and, hopefully you do. But uh, so, it was, it was nice to set an example for other people on the Earth that they should you know, think about, think about getting out there and voting.

MN: Mhm. Okay. Um, what are you most grateful for?

LC: I'm most grateful for the opportunities I've had. You know, my father has said many times, as an immigrant he's said, you know what, uh, and my mother's the one that had the insight on this because when they were young people in Taiwan, my father was perfectly content to stay there. And my mother's the one that pushed him to come to the U.S. because she saw the opportunities here. And so my father said, many times, that he's grateful that, uh, my mom pushed him to come here because this was the place where there would be opportunities for us, you know, especially their children. And so I'm grateful for—to have this—these opportunities. My father's always said that he owes everything, uh, to this country, uh, to becoming American. Yeah, so it's very important I think.

MN: And then, do you identify particularly as American or Chinese-American?

MN: Um, very much as an American. I mean, I was born here. Uh, I you know came and, uh, uh, you know was a s—took advantage of all the opportunities here and became who I am and, uh, served as an astronaut for NASA so I'm very much feel American. At the same time I feel my Chinese heritage and that's why I've been interested in trying to get, uh, you know, the two countries to have better relations. And I saw spaceflight as a possible avenue for this. You know, unfortunately when I got out of NASA, gosh, almost fourteen years ago, you know, I thought, "Certainly in ten years relations will be better." And unfortunately I think they're actually worse. [laughs] Actually much worse [laughs]. [**MN:** Hm] So, uh that's unfortunate, but it doesn't mean we should stop, shouldn't stop trying. Yeah.

MN: Um, I think, those are all the questions we have [**LC:** mhm] but do you have any other stories or advice...

LC: Uh, gosh, I think you guys covered it. That's pretty good, yeah. Pretty comprehensive. [**MN:** Alright] You guys did a lot of homework. You're the most prepared interviewers [**MN** and **ML** laugh] I've ever, by far, by like a factor of a hundred. In fact the interview I just came from, "Uh, remind me again how many missions you flew." [all laugh]

MN: Oh, that was actually one question they wanted us to ask was like, what kind of demands are there on your time and your schedule from just the fact of being an astronaut? [**LC:** You mean, today, like now? Present day?] Are you invited to things [**LC:** Uh, yeah, yeah] or yeah, are you constantly invited to things?

LC: Yeah, I—I—I get um requested to do a lot of different things and, um, you know it's um, it's kind of a b—uh, well it's a balance. [**MN:** Mhm] So, uh, I get to do some pretty cool things. Uh, last week, about a week ago, I was part of a big opening for Montblanc pen and watch company they uh, unveiled a new pen called the StarWalker, uh, in the Flight Museum, uh, down here. And I was part of that. They had

several movie stars there, Hugh Jackman, you know, the Wolverine. My kids were pretty excited that I got to meet the Wolverine, you know. [ML and LC laugh] Charles Melton. You know. So...

MN: Alright well thank you so much!

ML: Thank you so much!

LC: Yeah my pleasure! Thanks, you guys! Look at that, right on time. [all laugh]