Sign Oral History Project

Oral History Interview with Frank B. Salisbury, Ph.D.

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Interviewer: Thomas Tulien

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Transcription by Elaine Douglas. Additional editing by Tom Tulien and Frank Salisbury.

Frank Salisbury: FS
Interviewer Thomas Tulien: TT

[Preparatory talk]

FS This reminded me of an interview I once had with the local Fox station. They interviewed me for half an hour and put on 2 or 3 sentences that made me look stupid.

TT Probably cut two sentences out of context.

FS They did! They did! And I vowed I wouldn't do any more such interviews, but this is a different kind of a deal, sounds like.

TT Let's begin. I'm assuming you're from Utah, right?

FS I was born in Provo but actually lived in Springville. It was in "Ma Crane's" hospital in Provo, where my folks went to get me born. Well I'm sure that wasn't the official name but just how my dad referred to it: basically a birthing hospital, maternity hospital; as I remember a large rebuilt home, a private home. I grew up in Springville till I was 9 years old, then my dad came up to Salt Lake and I grew up in Salt Lake City until I was 18; went in the Air Force for a year, just at the end of World War II.

TT 1945?

FS I spent '45 in the Air Force. The end of the war in Europe came when I was in Texas; it was V-E day, and later I was in Chanute Field, Illinois, on V-J day. I'd love to talk for half an hour about that experience. It was kind of interesting.

TT Why?

FS Well, because of the way they kicked us around at the end of the war. They didn't really need us and, well, to begin with I volunteered for the Air Force here in Salt Lake. You had to take tests. There were about 10,000 who volunteered, and about I guess it was 3,000 who passed the test. Then we were sent, in my case to Amarillo, Texas, the Air Force field there. And—

TT The Army Air Force?

FS The Army Air Corps, that's right. And we supposedly were all going to be pilots or navigators or bombardiers or something, but the war was winding down, and on V-E day we were all marched into the theater there and told that for the convenience of the government we had been released from possible pilot training. I remember that day because some of us were quite disappointed, and we had to march about 10 miles out to a bivouac area, where we bivouacked for a while. I got strep throat along with half the base and spent some time in the hospital and all that. And then they choose 111 of us from the original 10,000—told us we were the most select group of enlisted men ever put together—and put us back into pilot training. Our interpretation—they never told us anything about why all these things were happening, of course—but our interpretation was that the Japanese kamikaze bombers were beginning to sink a few ships and things, and it looked like—this was the summer of 1945—looked like maybe it wouldn't end quite so quickly after all. Of course, nobody knew about the bomb.

So they shipped us off to Selma, Alabama, all 111 of us, and I remember the colonel in charge of the [quite small] base came out to meet us and *didn't have a tie on!* Man, were we impressed! This was going to be terrific. [Less formality than at Amarillo.] He welcomed us to the base. It took about a week to check in. At the end of that week they assigned me to a P-40 pursuit plane that I was supposed to gas up and rev up in the morning. They taught me how to do that in *one day*. The *next day,* I went up in it, with the captain who was flying it. They'd taken out a gas tank, and it had two seats, and we flew over Alabama—neat! And the *third day* we were all kicked out of the program and alerted for shipment. I guess the word about the bomb filtered down or something, but

they sent us up to Chanute Field [Army Air Force Base] in Illinois to be parachute riggers. So here were all these, most select group ever put together, and we were taught to use a sewing machine and pack parachutes. And some of them were really bitter.

There was some guy, I remember, named Sumption, from Aruba, who made the special trip to get into the Air Force so he could fly, and here we were learning to use a sewing machine! "The enemy approaches! Man your #112 Singer sewing machine." So we did that. Then I was sent to Lamoore Field, California and from there assigned to Walla Walla, Washington where I actually packed one parachute with permission of the civilians who were really doing it—they didn't trust us at all, and I don't think, as far as I know, only two of us ever saw a parachute shop after training. The rest were assigned to motor pools and this-that-and-the-other. The war was over. Matter of fact, the war was over while we were in [near] Chicago at Chanute Field in parachute rigger school. V-J Day came along. My total time was 10 months. I went to 5 different places, on KP [kitchen police] half the time. I took 2 basic training sessions. Anyhow, where do we go from there? I came back.

TT Were you released then?

FS Oh yeah! That is the wind up of this story. I forgot. They called us in one day in Walla Walla and we had to go back to our barracks and get dressed up and put on our ties and things, and we went into the headquarters and they said, "Would you like to be civilians?" At that time they were releasing people according to a point system, and it would have taken us another year and a half to get out by the points, cause we didn't have many. And I had friends not in this group of 111 who did wait another year and a half before they got out. But, apparently as a reward for what they had kicked us in and out of, they said "would you like to be civilians?" We raised our right arms and volunteered to be civilians. On my discharge it says, "Reason for discharge convenience of the government. Volunteered for civilian life." Which of course about a million others would have like to have done at that time, and the ones who were discharging us were among those who would like to be out, so they postponed. It took about a month to get the paperwork done, and finally I came home. Ten months altogether.

TT You went back to school?

FS Came home, went back to school. I started school before the Army experience, and [finally] got a Bachelor's degree at the University of Utah in botany.

TT What interested you in plant physiology?

FS Well, I was a boy scout and I got a lot of merit badges. Got my Eagle Scout, and the one merit badge that was really a challenge was the botany merit badge. I was set on science from the time I was 9 years old. I just didn't know what aspect. And the one [merit badge] that was really the most challenging was the one in botany, so that's the direction I went. But I liked all aspects of science. I thoroughly enjoyed chemistry, physics, and math. And the way to combine chemistry, physics, and math with plants is

plant physiology: the function, the biochemistry, the biophysics of how plants work. So that's what I did. I got a Bachelor's degree, and then I stayed there for a Master's degree and finished that in a year and a couple of months, I guess. My good-old professor Walter Cottam suggested I go to Caltech, so I did. James Bonner was my major professor, and there it was possible to actually major in plant physiology. At the University of Utah, I guess my master's degree probably says botany and biochemistry. At Caltech it was plant physiology and geochemistry. Lot of details there.

But, semi-important, the geochemistry part is important in the context of this interview because Harrison Brown was the great man [one of the great men] at Caltech: a geochemist who had written a book on where we were going, energy-wise and so on, so he was internationally known. To minor in geochemistry, all I had to do was attend a seminar once a week for the two years I was there and then write a term paper, each quarter. If I made an original contribution to knowledge, I'd get an A, and otherwise I'd get a B. So I decided to write about life on Mars.

Well, the seminar topic that year started out in the universe and worked in [to Earth, including the Solar System]. It was a great class because they had all the great men come and tell us about what they were doing.

TT Names?

FS Well, for example, the one I think of—we talk about the Richter Scale—right? Richter came and told us how he developed the Richter Scale for earthquakes. That was typical of the sort of thing that Harrison Brown arranged.

TT Caltech top of the field?

FS Caltech was totally the top of the field for my study. My major professor, James Bonner, and Arthur Galston, who was there, had just written a textbook in plant physiology that captured the field. Everybody was using it. Bonner had come from [Salt Lake City and] the University of Utah [although the Bonners were not natives of Utah]. He'd grown up there. His dad was head of the chemistry department at the University of Utah. James Bonner died in 1996, and I got to write his biography for the National Academy of Sciences.

So anyway, I took this geochemistry class and wrote the paper on life on Mars, the possibilities of life on Mars. I did a lot of research and thought I had an original contribution to knowledge. But Harrison Brown didn't [think so], and he gave me a B anyway. I was bitter about that the rest of my life!

TT What year?

FS That would have been '53, '54. I finished [the work for my Ph.D.] in '54.

TT Besides, the Percival Lowell controversy extended into the sixties…

FS Yeah, that's right. I got a chance to go back and tell Harrison Brown that I was unhappy with the B, because several years, ten years later or more, I went down there on a job interview, actually. The term paper I wrote was published in a book by [Robert S.] Richardson: *Exploring Mars*. He'd heard about it [term paper]. I guess he called Harrison Brown and got ahold of my term paper and published it [with my permission]. And it was sent off to the San Francisco Examiner, and they published it. It won a prize for science writing from Scientific American. I got a little money for each of these things. Then I was asked to write a couple of articles for Scientific American, which I did. So I told Harrison Brown, and I got a little less bitter about his B as time went on.

The dates are '51 for the Bachelor's, '52 for the Master's, and '54 when I finished a Ph.D. Everybody told me it was impossible to get a Master's at one school and go to another school and get the Ph.D. in three years. Everybody told me that except my major professor, James Bonner. He said: "You learn just as much after you have your degree as you learn before, so why mess around as a grad student all your life?" Great man, he was.

So that was one semi-unusual thing in my life, was getting my Ph.D. in three years with a Master's at a different university. I went to Colorado—well, first I spent a year substituting for Ed Phillips at Pomona College, 50 miles east of Caltech: In Pomona, Claremont, actually. And—

TT It is nice there.

FS Wonderful, I loved it. I substituted for Ed Phillips who was on sabbatical, so I knew this was a one year deal. And it was great. It was undoubtedly the best teaching I've ever had a chance to do, other than Sunday school classes. I taught mostly ecology. They alternated ecology one year and plant physiology the next year. I was there during the ecology year. And that was alright. I always liked ecology too. That was one of the reasons I took the job—

TT Mid-fifties?

FS This was the academic year '54-'55. At Caltech you only graduated in June at that time, and I finished in August, so officially I graduated in '55, but actually I'd been at Pomona College during academic year 54-55. I was all done in August of '54.

Then I applied for jobs—it's interesting, it never occurred to me it might be difficult to get a job, and it wasn't. My students now—it's quite a struggle, and there are all kind of things with tenure and so on which weren't much of a problem then. But in my case, I took a job at Colorado State University in Fort Collins. It was Colorado A&M when I took the job, and about a year or two later it became Colorado State University. I was there for 11 years. The head of our department hired me and apparently liked me—and then he became a little jealous of the success I was having with grants from the National Science Foundation that were just starting at that time.

TT For the planetary exploration program?

FS No, this was the National Science Foundation, and it was basically for work on the physiology of flowering. That's what I'd done for a Ph.D., and that's what I was getting money for. And I've never given much thought to honors and accomplishments and such, so it didn't occur to me that after about seven years I should have been advanced to associate professor. All of a sudden I was advanced, not to associate professor but to full professor! Again, I don't know anybody else this has happened to. I was on the Colorado State University Research Foundation, and I got pretty close with the president and the vice president—Ray Chamberlain was the vice president. I was closest to him. Can't remember the name of the president. They told me our department head—well, they told me they had decided to advance me to full professor, and the department head had just really raised cane and fought it and said that was not to be done. But they did it anyway. I remember meeting the department head on the campus one day, walking opposite directions, and he stopped me, and said, "You know what I did for you? I got you advanced to full professor." He told me that just after I had heard that he'd fought it tooth and nail!

TT Covered his tracks…

FS Covered his tracks. I went to Germany on sabbatical. I'd been a Mormon missionary in Switzerland for two and a half years, '46 to '49, right after World War II, and I had learned German and had a great urge to continue to use it. So I went back there and worked with Erwin Bunning at Tübingen [University of Tübingen, Germany], who is the world authority on the biological clock [before he died]. The physiology of flowering is related closely to the biological clock and—

TT The biological clock?

FS Yeah, it seems that all living organisms, just about—at least all those that have a true nucleus, eukaryotic organisms—measure time. It manifests in various ways. Plants have leaf movements. The leaf will be kind of horizontal in the day time and vertical at night. They go through what was called hundreds of years ago "sleep movements." And, it turned out if you put them under constant conditions, total darkness, constant temperature, constant humidity, they do it anyway. But when they are under those conditions they do it in a "free running mode," we say. Instead of a 24-hour cycle, it's usually something a little different. Mainly with plants maybe 25 and a half hours; humans too. It's often a little longer than the 24 hours. So after a few days it's out of sync with the rest of the world, and Erwin Bünning [with Kurt Stern and Rose Stoppel] was the guy who had shown that. He was a grad student the year I was born, 1926. His doctoral work discovered the idea of free running rhythms, pretty much. It was later possible to find the idea in earlier papers, which is typical of so many things; no one had paid any attention to it [the evidence] then. So that's what I did [went to Tübingen].

I had a wonderful 9 months in Tübingen and then I went to Innsbruck in Austria, the university there, where I studied alpine plants, which we were also doing in Colorado. That was another project that we had cooked up.

TT …corollary to Colorado?

Yeah, I was, it was neat. Boy, I was undoubtedly in the best shape I'd ever been at that time because I was climbing those mountains. I lost weight and was slim and trim. It kills me to remember it. I can't lose an ounce now!

TT …maybe you need to return?

FS That's right. Well in Tübingen—I'm thinking of this because my oldest son just went back with his two daughters. They visited Tubingen where he lived when he was 10 years old. You had to climb 164 steps to get to our house up at the end of the Paul Lechlerstrasse: up and down those steps every day to get to the office and back. That, and then climbing the mountains in Austria. It was great! I gained back all the weight, incidentally, on the ship on the way home!

So I spent another 3 years in Colorado after coming back from Austria and Germany, and, well, back to the Mars thing a little bit.

TT How did you arrive at the idea of the original paper [on Mars, published in *Science* magazine]?

FS Well, it was a continuation of this term paper that I'd done for Harrison Brown.

TT How did you evolve the idea?

FS I had to write it as a term paper, and that was a start. I just expanded on that—

TT What inspired you?

FS Well, I had to write about something that related to the universe and the planets. That was the assignment in this particular quarter [at Caltech]. And because I was a biologist, it seemed logical to…and I had an astronomy course at the University of Utah that I utterly loved. So it was kind of a logical tie in. But [after arriving in Colorado] I had begun giving talks about it, and I don't remember how that came about for sure.

TT What was your assumption in the fifties regarding life on Mars?

FS The thought then was if there was life on Mars, it might be lichens. My term paper tended to shoot that down. At the time, they were observing in telescopes this wave of darkening that came with spring on Mars. And it looked a lot like plants. And I didn't think it could be lichens. I thought it might be some other kind of life. I was giving those talks, and in 1962 or maybe late '61, they had a symposium in Colorado on communicating science to the public. The editor of *Science* magazine was there, and I gave my little talk on Mars, life on Mars. He liked it and suggested I write an article for

Science, which I did. It was the cover article published in April of 1962. I suggested in that article that there were three evidences, not only for life, but for intelligent life.

All this is very interesting, because as soon as we got the Mariner spacecraft photographs everything more or less changed. But I was expressing what was thought by the community of astronomers at that time. The evidences were, well the canals, of course. And there was much controversy. Edmond Slipher had actually taken at least one photograph that seemed to show them a bit. It's a mystery. I don't know what the answer was! Mostly they saw 'em and they didn't, but if you photographed them, then we ought to be seeing them now, and we don't. So it's a great mystery.

TT It was probably on the edge of our ability to resolve.

FS That was then. But now we've got detailed close up pictures and we don't see them; clearly some kind of optical illusion or something. But nobody knew that at the time, and people had good evidence that there must be such a thing. That was one evidence. Another evidence was that there'd been a couple of reports of brilliant flashes on the surface of Mars. Conceivably they could have been atomic bombs or something. The two satellites of Mars, Phobos and Demos, were the third evidence. They went in the opposite direction of other satellites and were very small. This was 1960, and the thought was they might be artificial satellites. So those were the three evidences, and I just reported them without coming to a conclusion. And Coral and Jim Lorenzen—

TT …let me break here.

FS Right, you break and I'll get something to drink.

TT Ok, you're going to mention Coral and Jim Lorenzen?

FS Right. So I wrote this article for *Science* magazine and even had the cover picture of Mars.

TT One minute, I'm sorry. Ok, we're back. So did Jim and Coral contact you?

FS Yeah. I wrote this article about life on Mars in *Science* magazine with cover pictures by Slipher of the planet. I was driving home from Denver to Ft Collins on the day it was published, and I heard Lowell Thomas talk about it on the national news. A while later I got a letter and a copy of Coral Lorenzen's book—a letter to me from the Lorenzens telling me about UFOs. And that was the first I had paid any attention to the UFO side of it all. But because I had suggested the possibility of *intelligent* life on Mars, the Lorenzen's picked up on it. I was impressed with the book. It seemed like they weren't totally nuts, so I replied and over the years we got to be pretty good friends. On many occasions we were at meetings and that sort of thing.

TT Were you involved in the symposiums?

FS I sure was. Yeah.

TT [Unintelligible]

FS Well, it was '62 when this was published, and I then immediately left for Germany and Austria in August of '62. The paper came out in April. But I had read the book, and by the time I got to Germany I was—ha!—I was telling my wife and my kids about it: setting them up beautifully to see a UFO there in Tübingen. They came running in one morning and said, Dad! There's a UFO out over Österberg. I ran into their room, and for a few seconds at least I saw it. It flew around and came at me and went away very quickly: this bright light over Österberg. I said, "Now you gotta calm down dad and pay attention." I sighted it then against the side of the window frame, and it held still. And it was the planet Venus as the morning star. It took me 15 or 20 seconds to know that. During those 15 or 20 seconds, that's the only time I've ever seen a UFO.

TT …had the experience…

FS Yeah! Well it was unidentified to me.

TT You were seeing it through [very thin] cloud layers?

FS Two things: First, I was having the kinesthetic response, I think psychologists call it. I concentrated on it so intensely that I eliminated all reference sources, and it appeared to move. That'll happen if you go in a totally dark room and look at a single point of light. It doesn't hold still, I'm told. And there was a thin layer of clouds, and they were moving. So it changed in intensity. As it got bright, it came toward us—and got dim, it went away.

Anyway I came back and continued giving UFO talks and Mars talks and the like and ended up at this Blacksburg, Virginia symposium that is one of the things you mentioned. And it was interesting. This was a totally scientific symposium, and I—

TT The AAAS symposium that resulted in the Sagan and Page book?

FS I don't know. This article [in your hand] would tell but I can't see right now. Anyway. . . Well, I can probably pin it down. It was 1965, because I got a call while I was at that [Blacksburg] symposium. I was paged out of the audience to talk to the Dean of Agriculture at Utah State University. They asked if I was interested in a job there. [The AAAS symposium was held in 1969 in Boston, Massachusetts.]

I went there for an interview, and that's when I moved to Utah State. So I can pin down the time. I went to Utah State in 1966. But the interesting thing about this Blacksburg, Virginia. Symposium was that, just a few days before, the Mariner pictures had become available. So we looked closely at them, and on one of them I could see a little sign of canals. A straight line feature across the thing, so I continued to talk about the possibility

of intelligence on Mars, and I threw in a bit about the UFOs which I was doing all the time. And it led to this [Blacksburg] article—I wonder where that came from?

TT Not sure…from the NICAP files.

FS Yeah, but it doesn't have, well it's an AP article but could have been in any paper. Anyway I continued that approach, and let's see—

TT In '65 you became interested in UFOs?

FS I don't know if that's quite true or not. No, the Coral Lorenzen book was 1962, and I began right about then. I don't remember if I went to any meetings before we went to Germany and Austria or not. Surely I didn't. But we got back in '63 and from then on I was into it pretty deeply; so '65 is a little late. It was probably around '63 that I was pursuing it fairly intensely.

TT Which means what?

FS Reading and corresponding. People would begin to tell me about their sightings, and I would forward them down to the Lorenzen's if they were good ones, and most of them were not. But ok, now we're getting there. I'm remembering. [After moving to Utah,] I gave one of these talks at a Utah-high-school teachers' convention in Salt Lake at good ol' South High where I'd graduated. And after that talk, Joseph Junior Hicks from Roosevelt, Utah came up on the stage there and told me about what he was seeing over in the Uintah basin. Somewhere in there I wrote one of these [*BioScience*] articles, a '67 article I must have written, shortly after I got to Utah State University, "The Scientist and the UFO." I've got to be one of the few scientists who've been able to talk about UFOs in a conventional scientific journal—

TT Any problems?

FS Not really. I tried to be so objective, which I tried to be anyway; taking that approach, I didn't have any real trouble. No, they were happy to do it.

TT Was that a reviewed journal?

FS Oh yeah! Sure.

TT In '67 there was a more relaxed attitude?

FS Well, no I wouldn't say so. If you were interested in UFOs it was automatically thought that you were nuts. More or less. But I got away with it. I got away with it at that Blacksburg, Virginia Symposium and at many other situations that I dealt with. I eventually was on the governing board of AIBS, the American Institute of Biological Science, [and the editorial board of *BioScience*] and they're the ones who published this. Probably had to do with who you know because a close friend who had helped me get

into the business with NASA, sort of—he and I had submitted a proposal for quite a bit of money, like two and a half million dollars, to build a facility to study plant growth under controlled conditions—to build a closed, ecological life-support system like we might have someday on the Moon or Mars.

TT Like the Biosphere?

FS Well, that's another whole deal. It was not like a biosphere. I'm friends with those guys [at Biosphere 2], but the thing they built is not like what we're going to build on Mars or the Moon. We're not going to have 16 biomes and all that stuff. We're going to have very tightly controlled agriculture that will produce food and purify the air—and not worry about all the other stuff they have in Biosphere 2. They did a lot of good things, but the one thing I always griped at 'em about was the implication we would build this on Mars or the Moon. For one thing, it would explode: the pressure inside compared to no atmosphere outside. But anyway, where were we?

Oh yeah, John Olive and I—[along with]Tex Baker—submitted this proposal to NASA. The proposal was turned down. John Olive then left Colorado State University to be the director or whatever it was, the executive secretary, of the American Institute of Biological Sciences, the AIBS, the guys who publish *BioScience*. So he and I were friends, and his grad student, Don Beam, went with him (never finished his PhD but got one later, about 10 or 15 years later). John Olive was a zoologist. So I had contact with these guys, and that probably helped. I was able to meet with them at these AIBS symposia and so on, and talk about the possibility of UFOs without being laughed at. That was pretty neat.

Anyway, Devin Garrity, who was at least part owner of Devin-Adair Publishing Co., saw this article in *BioScience* and either wrote me a letter or called me on the phone but asked if I would like to expand it into a book. I told him to send me 200 bucks—this was in 1967—and I'll go over to the Uintah basin and get in contact with Junior Hicks and find out about the UFO sightings he told me about at the meeting at South High in Salt Lake City.

So Devin Garrity did send me 200 bucks. He turned out to be a good friend who died too soon, after I got to know him, 9 or 10 years, maybe more than that, because my book was quite a while after this [his first call]. It took me quite a while to get the book put together and published and all: 1974, so that's 7 years after his original call. And I visited Devin Garrity a time or two, stayed at his home in Greenwich Village there by New York, Old Greenwich, yes. Great man! He was.

The book was finally published, and it was published during a year that I spent on leave with the Atomic Energy Commission, which a year later became the Department of Energy in Germantown, Maryland. Devin Garrity sent me the 200 bucks, and I went to the Uintah basin. First, we made detailed notes on Junior Hicks' file. He had something like 80 sightings. We took about 20 of those, and in the course of a couple of weeks went around and interviewed the people: tape-recorded them, didn't have a machine like

you've got there. I took photographs of them, portraits. I'd been a bit of a portrait, wedding, and commercial photographer, part time, from the time I got back from my Swiss mission. So I put the book together, but it took a long time to do it, and I went back to the Uintah basin and interviewed a bunch of other people shortly before the book was published in 1974—brought it up to date.

It was pretty impressive! I'm still impressed when I think about it. There were incredible sightings that clearly were not the planet Venus, or flocks of birds, or all the things that—

TT ….the fact that they are happening within a community of people?

FS Added a bit of credibility? It sure did. My secretary, Pat Hagius, transcribed the belts—because I had that kind of a recorder. They weren't tapes; they were IBM belts. She transcribed them, and she became a convert, listening to the sincerity in their voices and so forth. She was impressed. It seemed obvious to me, and to Junior, and Pat, that these people were not lying. They might be misinterpreting. You know, there's all kinds of possibilities, but one possibility always is that it's a hoax, that it's something somebody made up. And I can't prove that the people in the Uintah basin didn't make it up, but I sure don't think they did. For lots of reasons.

These were really good sightings, many of them were close, close encounters. Many had multiple witnesses. Some of those multiple witnesses were scattered all over different locations, all watching the same object. They were good sightings. Daytime sightings, some of them, 4 o'clock in the afternoon, bright shiny object lands in the field, 100 feet away, 50 feet away. You know, good stuff like that again is hardly the planet Venus.

TT …out of the eighty twenty were high quality?

FS Yeah, there were about 20 I interviewed then. I've lost—it's been years and years. I can't remember the numbers. But when I went back close to 1974 there were some more really good ones that are in the book—*Utah UFO Display, A Biologist's Report*. They were good sightings. I don't know which ones to tell you about. Once I get started it goes on and on. I continued to give talks—

[Looking at the book: *Utah UFO Display*.]

FS Yeah, I wish they'd of—they were going to publish it in paperback but they never did. It was too bad.

TT Why [was it not published in paperback]?

FS I don't know either. These were drawings the people in the Uintah basin made, many of them. As you can see they're not just little spots of bright light. They're—

TT What stands out is the variety…

FS Yeah. No, they weren't completely different by any means. There's a number of these here—I mean the people aren't the greatest artists—but this one and this one, they're all flat on the bottom with the thing on top. And then there's a lot of 'em that are Saturn type things round on the top and the bottom. Yeah! Really there's basically just two kinds there! And the differences among the ones of a given kind could be ascribed to a great extent to people's artistic abilities. They were great sightings.

The one that always comes to mind quickly is Joe Ann Harris. Her picture's in here: Joe Ann and her friend, Estel Manwaring, Mormons, she was serving as a kind of missionary to the Indians over there. This is on the Indian reservation. She and her husband were living in a church down there, Randlett, and she brought a carload of 3 or 4 Indian girls and a large Indian woman who was their teacher or adviser. She brought them up to Roosevelt for a volleyball game, and her friend Estel Manwaring from Vernal, about 40 miles away, brought another Indian girl in for the same volleyball game. They were on their way home after the game. Estel is going east. Joe Ann Harris goes east for a ways and then turns south to get down to where she was living. She comes out around Ft Duchesne. They see this object that Junior Hicks built models of, this kind of an object with lights around the edge flashing.

She doesn't see anybody in the clear dome but she is imagining they are seeing her. This thing, first, is below this range of mountains here, so it's not far distant and you're not misinterpreting the distances. It's below the mountains, and it begins to come toward them as they drive around the highway here. Pretty soon it's right there, like 50 feet in front of the windshield, filling the whole windshield view. The large Indian woman who was in the front seat gets down under the glove compartment. Joe Ann doesn't have any idea how she was able to get down there, or get out afterward! And the three Indian girls are screaming their heads off and get down on the backseat floor, as best they can get, ducking down, and Joe Ann has the car in reverse backing down the highway to get away from this thing. She turns [her head] around to see where she's going as she's backing, and when she turns back, it's gone. That quick. Pretty impressive. The girls—one of 'em was 16, and she slept with her parents for the next two weeks she was so terrified.

Estel Manwaring is going along the highway, Highway 40, on the way back to Vernal, and the Indian girl looks out the window and says, "Isn't that a funny star?" Yeah, that is. They turn into a kind of a driveway. It's out in the middle of the desert, but there was a music store there (which has always amazed me). I was driving there just a couple of months ago, and it's long gone now. I look for it every time I go across that road. They pull in there. They see this thing, and they describe it exactly the way Joe Ann Harris did: round [circular] on the bottom, flat on the bottom with lights and a dome on top, and so on. But it's quite a distance, not close. It's not attacking them. They're not terrified. They just watch it with curiosity. Suddenly it goes straight up in the air. Estel says it went up so fast she almost hurt her neck trying to turn back and watch it. Just [zip]!

TT Was that the point it left the road [where Joe Ann was]?

FS Who knows. Probably not. They were too far away so if it was the same object—Estel and Joe Ann are sure it was, but who knows?—if it were the same it had to move east before Estel saw it. Yeah. But that's possible and they think that's what happened, that they saw the same one. If it could move straight up it could also move sideways I guess at a pretty rapid clip. That was one sighting, and there were lots of others.

The other ones that impressed me, I think, are the ones I have tended to repeat in talks I gave for a long time. [Showing photo in *Utah UFO Display*.] Here's how Junior Hicks and I looked, back in those days! We don't look that way anymore, quite. Here is ol' Thyrena Daniels, the lady here. Her sighting is not as good, in one sense, and that sense is that she was alone, whereas Joe Ann and Estel were at two different locations and had other people with them and so on. But this is an impressive thing. She's coming around the big bend out of Vernal—I've got a picture of the road here, where it was—and she sees this big red object. Totally different from the other one [seen by Joe Ann and Estel]. Looks like a big red ball, flat on the bottom and shooting blue flames out of either side. Very strange.

She's frightened by it but she keeps driving. This is the middle of winter, virtually no other traffic on the road. She saw only one car in the 40 miles between Vernal and Roosevelt. At night. She drives along, and it follows her. It's ahead of her much of the time so she can see it. Flames are stretching out, she says, about equal to the fence lines on either side, which are 50 feet off the road on either side. Sometimes it's above her. She can't see it, and she can only see the light lighting up the road around her. I'd give anything to find the other car that passed at the time. I think it was going the other way. That'll never happen I don't suppose [finding the other car]. The object follows her basically all the way to Roosevelt, and finally she begins to come into Roosevelt, which is a fairly populous little place, three or four thousand. It has a downtown. It begins to rise up and go faster, and she watches it go off into the distance. She pulls into her home and grabs her husband and drags him out there to see if he sees it. He doesn't, quite. She's not sure whether he saw it or not. She still could [see it], but by then it was just a little light way off in the distance. She sat down in the front room after the experience and sees the full moon coming up and thinks, "Ah it's back!"

I don't know what to make of these things. You know, that was definitely not the planet Venus. Most of the sightings I interviewed and photographed, the people were of this quality. Really good sightings.

TT …were you convinced of the physical reality of the phenomenon?

FS Yeah, probably convinced me of that. I like the way you put that. I despise it when people say: "You believe in UFOs?" The way the question's stated it's similar to: "Do you believe in God?" And whether you have any evidence or not. I always answer that I don't like the question, that I'm convinced that they're not easy to explain away. Anyway, up to the time of this book, which was about 10 years from 1964 or so until 1974 when the book was published, that was kind of the approach: Look at it

scientifically, consider the explanations people had given, see if you could do anything about those explanations, etc.

Incidentally, that reminds me of a gripe I've had against people like Carl Sagan and Philip Klass. Who was the other guy? Menzel, oh yeah. I was on several stages with him at symposia.

TT I know that he supported life on Mars.

FS Yeah but he sure didn't support UFOs, and he's a good example. They all are. The debunkers are good examples because the way that they debunk these good sightings is to make assumptions about them that are basically contrary to what the witness says. Now, conceivably, their assumptions might be true, but we need to be perfectly clear that they're assumptions. Menzel [and Tave's] book gives a good example from a totally different kind of field. He was [the authors were] debunking all sorts of things. While he was [they were] debunking UFOs, he [they] also debunked the miracles of the Bible.

One miracle was Jesus walking on water. And he has [the authors have] photographs of somebody standing on a spit of land into the lake, and with the heat waves you can't see the land; you only see the person. It looks like he's standing on the water. [Break in recording] This was supposed to be an "inferior mirage:" heat of the day when the heat waves blur the spit of land the person is standing on. And that is supposed to be the explanation [for the "legend" of Jesus walking on the water].

But this is a case where you can compare what Menzel says with what it actually says in the Bible. It records the account, and of course it's the only place we have where it's recorded. The way it's recorded, the disciples are in a boat on the Sea of Galilee. In the middle of the night there's a storm, and they see Jesus coming toward them walking on the water. Peter says *he* wants to walk on the water, and he gets out and he does, for a ways, then loses faith and has to be rescued by Jesus, who takes him into the boat. You can see what Menzel [and Taves] had to do to that story to make his [their] explanation fly. He [they] had to put it in the middle of the day, and at a great distance, the heat waves, and so on.

[I'm not concerned here with whether the event actually happened, but notice:] It's totally contrary to what the story actually says. And that's what they do. You could give many examples; that's the one that came to my mind. I remember the Captain Coyne thing, which we won't talk about, but I remember Phillip Klass or somebody explained that. It was the same kind of a deal. It was a meteor from the Leonid showers, I think. The object, as Captain Coyne described it, came and hovered over their helicopter and then went off in a different direction. That doesn't quite fit a meteor. Meteorites don't hover, and they don't change direction. [In a hellicopter,]You have to be pretty low in the atmosphere [but meteors are much higher]. And of course, as you remember, there was a change in elevation of the helicopter. But it makes the point that in order to explain that particular case, you have to say Captain Coyne was mistaken in this, this, this, this and this, and really it must have been this, this, this and this. You have to think the witness is

nuts. And it's possible the witness was nuts. Klass could be right. But there's certainly no way to know that he's right. And it's important to realize his assumptions are contrary to what was actually stated.

TT Your approach…you attempted to disprove that these could be spacecraft…

FS Yeah, there were a bunch of explanations that people had given—and that's what this book was all about: [For example:] They can't get here from there. And of course nobody knows that—what technology would be possible. What else was there? Well, there are those kinds of explanations, that the technology makes it impossible to have visitors from other planets, and that's pretty hard to prove. You can only consider it in terms of our own knowledge, and our knowledge keeps expanding and changing.

Psychological explanations? Mass hallucinations, that sort of thing. But who knows anything about mass hallucinations? It's the same deal. It's what somebody has decided must be because they won't believe that UFOs, or whatever else, the Virgin Mary . . . . I don't know what to make of all these things, but that's where I stand. I don't know what to make of 'em.

TT …what did you arrive at?

FS I arrived at the conclusion that I don't know what to make of 'em. At this point in our knowledge, we don't have an answer.

TT Would you argue that at this stage in our sciences…

FS The one thing I don't know how to eliminate is the possibility of hoax: The witness is lying. And there you end of with your gut feelings. I don't like that. I'm uncomfortable with that as a scientist, but what it boiled down to was: you couldn't disprove they were extraterrestrial visitors. And having said that and written a book with that basic conclusion, I guess as the book was being published I began to wonder and to get even farther out. And the farther out meant considering religious explanations, angels, devils, that sort of thing—

TT Hierarchical beings?

FS Something like that, yes. I just became very uncomfortable with the idea that they were visitors from another star system, an advanced civilization visiting us. There were too many crazy things they supposedly did. And I never liked that kind of an approach because, who could say what they would do? We don't know their personality [or their abilities] and so on. So I always argued that that kind of approach was invalid, but I began to feel I was stuck with it. I just could not be comfortable with the idea they were intelligent beings coming here to explore, who did all those strange things! And there's not time to get into examples of the strange things—but—poltergeist phenomena began to appear. Remember the movie *Close Encounters of the Third Kind*? The sort of things

that were shown there, trains moving around in the house—they're part of the phenomenon!

TT Were you seeing that at Uintah?

FS No. I was not. Or it was not being recorded. There were a couple of things—

TT You weren't asking about it?

FS I don't know. You'd have to ask Junior. But there were two things missing from the Uintah basin sightings that other people had. One was the witnesses saying anything about beings of some kind in those UFOs.

TT Never saw?

FS Never saw occupants—that's the word I was looking for. Never saw them. And the other thing was these strange phenomena that were recorded in the UFO literature. Who are we talking about here? Jack Acuff. [Was associated with NICAP.] He got me over to Spain on a TV program called "The Clue." Saturday night. They showed a science fiction—well, first they would interview us and talk to us in kind of a talk show setting—they had to translate what I said, and I had to wear earphones. They brought a guy there and I forget his name but he had—Kansas, it seems like, and he'd been a policeman—

TT Schirmer.

FS Schirmer. And he had had a lapse-of-time phenomenon and supposedly had been taken on the space ship. He made fabulous drawings of what he saw in there. Basically the drawings showed 1960s computers, with tapes and so on [laughs]—very strange. He brought his wife [to Madrid], and his wife and my wife talked, and it turned out there were all kinds of strange poltergeist phenomena going on in his life. And that turned out to be fairly typical. And I, therefore, on that basis, became less and less comfortable. In terms of my theology, I could find a place for the phenomena, but that was not science. And it was so different from the approach I'd taken all along that I decided it's time to back off and do my plant physiology: study the biological clock and alpine plants. I had grants from NASA beginning as soon as NASA was formed (ca. 1960) to study life under extreme conditions, like you might encounter on Mars, and we did that for a while. Plant growth under the snow—

TT …through the university, hydroponic wheat…

FS And we finally did that, yeah. For several years I studied gravitropism, the way plants respond to gravity. We'd put a plant on its side for several hours in the dark, and the growing part of the stem would gradually turn to the vertical. This has been studied for well over 100 years, scientifically, longer than that in other ways I'm sure. It was an interesting study. I had a lot of those things. We studied how you might grow plants

under controlled conditions. And NASA kept encouraging me to do space experiments, rather than the ground-based gravitropic studies and controlled-environment, agricultural studies. So we wrote proposals and got accepted for a NASA experiment on the Shuttle. At that time the Challenger blew up, and everything was on hold. It stayed on hold for about six years. They didn't even tell me whether the proposal was accepted for three years. Finally they did. In the meantime I met a bunch of Russians, and they said, "Why don't you grow your plants on our space station Mir?" I said, "Hey, that sounds like fun!" On our Shuttle they can only be there at the most 14 days or so, and that's not long enough to really see how they manage. So NASA decided to support us in our experiments with the Russians on Mir, and that's how I wound up my scientific career. We grew a super-dwarf wheat on the space station Mir, twice.

TT Successfully?

FS Yeah, 1965 was very unsuccessful. Equipment broke down: the old Russian equipment, which had been up there five years. The lights went out, wouldn't come back on. But then we replaced a lot of this equipment, and we grew some beautiful wheat! In 1996, it was harvested, and we got it back on earth in January of '97, just before I retired in August of '97. It formed about 280 wheat heads. I was the project leader, and when it came back—and my Russian colleagues were there, all of my team was there, NASA people were there—I took one of those heads and broke it open to look for the seeds, and there weren't any! [laughs] The goal was to go from seed to seed. It's a long story after that. It turns out that the gas, ethylene, is a plant hormone—we had known that—but it turns out that cereals like wheat are very sensitive to ethylene, and if there's any ethylene in the atmosphere (and I'm talking 100 parts per billion), they won't make seeds. And ethylene is produced by fungi and machinery and all kinds of things, and it turned out there were 1,200 parts per billion of ethylene in the air, the atmosphere of Mir. My colleagues, after I retired, have pursued it, have shown very clearly that the ethylene was responsible, and have used a different cultivar that's more resistant to ethylene—and finally it got seeds! And they not only got seeds, but they planted the seeds on Mir and went through a second generation in weightlessness.
So, we've shown that you can grow plants in weightlessness, and this is a surprise. Plants are extremely sensitive to gravity. Like I said, we tipped the vertical plant a few degrees from vertical, and within a couple of hours it would be vertical again. So it would not have been surprising if plants had to have gravity to make it. But our experiments fundamentally showed that they don't. When gravity's there, they respond to it; when it's not, they grow anyway. So I think it is quite significant.

TT What do you think about the work on Martian meteors?

FS Don't know, but it's exciting. It'd be fun if it were [as claimed]. The 1962 article that I wrote before we knew all this good stuff, I talked about alternative metabolisms that might get along at the extreme low temperatures on Mars, and that might use nitrogen. It turns out there's very little nitrogen. We didn't know it then; we assumed there was a lot of nitrogen but couldn't measure it spectroscopically. But those are possibilities. The idea that the markings on Mars do not represent life was probably the

work of Carl Sagan more than anybody, and I'm not at all sure he was dead right. His explanation is that the dust blows around, uncovers darker rock, covers it up later I guess. And that seems a little far-fetched to me, but I don't know. We don't have the data; we need to go. The data that we do have, where we have landed and looked for life, they always land in places where you wouldn't expect to find it anyway. Eventually that'll change; we'll get the answers. I'm not sure we have the answers yet. The possibility of fossil life [in the Martian meteors], I've followed it, I've read the papers, but I don't know what to make of it. [There are alternative explanations that can't be discounted.]

TT Gil Levin's work?

FS Yeah, for example—

TT …thinks that Viking did find life…

FS That was interesting. One of the committees I was on was an exobiology committee at NASA. What we were supposed to do was make recommendations about what to do with the lunar receiving lab.

They built this incredible lab to receive the samples from the moon *just in case* there might be some kind of life that would take over on earth, you know. They knew that the chances were one in billions, but they figured that the consequences were so horrendous it was worth covering our tracks. So anyway, I was chairman of a subcommittee to consider possible life on Mars. We went to NASA Ames and interviewed Vance Oyama, who was in charge of some of these studies [equipment to search for Martian life]. At the end of the interview—this was before they had done the experiments, while they were still preparing the things that Gil Levine and others did— I said to him: "What do you really think about the chances of life on Mars?"

He said, "We're not going to find anything." He had his mind all made up. More likely in the atmosphere of Venus, he said. Carl Sagan stuff again. [laughs] And so I thought that was pretty interesting. The one guy in the world who had a chance to really look objectively [for life on Mars] was not objective at all! And sure enough, the results came back, and they basically said the CO_2 is metabolized, and they spent the next two years figuring out ways to talk themselves out of it, which they did. And everybody bought the alternative explanation that he came up with. So I don't know what to make of it!

TT That sound like politics?

FS I don't know if politics is the right word. It would have been great politics to find life on Mars, I think. I think so. Wouldn't that have stimulated the space program and so on? But I think Vance Oyama himself was convinced there wasn't any life, and that was that. I don't think it was politics. I think it was his personal viewpoints. Whereas, on the other hand, Gil Levine did not have those viewpoints and continued to argue for years and years that the experiments had been positive.

TT Continues…

FS Continues, yeah, and he may be right. I don't know.

TT Edward Rousch symposium?

FS I did not, no.

TT Let's talk about the *National Enquirer* Blue Ribbon panel.

FS Oh yeah, that was probably in '72. I can't remember. It was going strong when I was in the Washington DC area, Germantown, in '73, '74. It's probably '72, yeah. And my name, and several others, our names were recommended by Jim and Coral Lorenzen. It was kind of a fun exercise. I did want to mention that a little bit.

TT Why National Enquirer?

FS Yeah, that's right. The *National Enquirer*—I don't know; that's a long story. But I had some faith in their objectivity, and that ought to be shown by the fact that we never came up with any positive evidence at all. But they [panel members] became friends of mine, all of whom had been associated with APRO and Jim and Coral Lorenzen—Jim Harder, and Leo Sprinkle, and J. Allen Hynek, and Bob Creegan.

The first meeting we had, we went there, the *National Enquirer* offered $50,000 for proof that UFOs were extraterrestrial intelligence. The first meeting we went to, we had big cardboard boxes of letters from people trying to win the $50,000. The letters were basically a great desire for people to tell their stories—but they were just stories. It wasn't real evidence. There was a time or two when it came close—another whole side story I could tell about Captain Franch and the Black Eagles.

TT Tell us…

FS Yeah, I'm gonna try, quickly. He [Guido Franch] was a member of the Black Eagles Galaxy Space Patrol, which had been formed in 1926, I think, and a German rocket scientist was part of it, and on and on. The bottom line was, to win the $50,000; he would take us in the spaceship Neptune to Mars and back! We laughed, but I said, "Now listen, don't be so hasty!" He was in Chicago, where Hynek was. Hynek and I went and spent some time with him two or three times. I said, this guy is probably nuts and all that, but if he really took us to Mars, I'd vote for the 50,000 bucks! So I pursued this for several years, and it is a very long story. He also converted water into gasoline; I watched him do that once. He put in some black crystals and so on. Anyway, he was going to take me to Mars, and he kept pushing it. I realized finally that ***I*** was backing out. "I can't go to Mars this week cause it's test week, and I gotta make up tests. Have to go sometime later." So he was manipulating me. Finally I decided: "I'm not going to let him manipulate me; I'll push him to the limit." And I did. And it got right down to the day when they were going to come and pick me up. He told me: "Just bring a clean shirt and a toothbrush, and we'll have everything else for you. We're gonna land out here by

Logan, and these two ladies from Mars will come and pick you up." Ok, I'd say and went along with him. But he was so convincing that I began to wonder. And the one thing I did was buy plenty of film. If I'm going to Mars, at least I don't want to be without any film! I considered writing a will; I didn't do that. But that's how much he got to me. Finally the day they were supposed to arrive the phone call said, "The Black Eagles have decided I'm not doing my duty right as their outside front man and they've kicked me out and cancelled the trip." Finally he had to back out, but I pushed him!

TT What was the result of the Blue Ribbon panel?

FS Yeah, I just had a little more I wanted to say about that. We continued to meet after I was here in Utah—well I guess I was here in Utah all along. We had one meeting up at Alta, Little Cottonwood Canyon, Salt Lake. And other meetings all over the country where we would examine these—after the first session where we had all these boxes of letters, we let the National Enquirer people sort through them first. It was a hopeless task. We'd sit there and read a letter and say, Hey! You gotta hear this! It got to be so confusing with everybody wanting to read their letters to the rest that it was just a—we were exhausted by the end of that deal. But anyhow, this got into the period where I began to see I wasn't getting anywhere scientifically, where I began to think of religious, possible theological ways out. One thing that kind of added to that was some of my colleagues on this committee—I don't know whether I should mention names or not, but I guess historically I've got to—Jim Harder became a total convert to the occupant idea. Had a girlfriend who supposedly was an occupant or had been visited by occupants, or something. Brought her to this meeting at Alta; let her tell her story. And this was too far out for me. It was no longer any semblance of science. It had become a religion for Jim Harder and to a great extent for Leo Sprinkle. And I loved those guys, and I still do.

TT Leo came to the same conclusion?

FS Yeah, I thought about him quite a bit lately, maybe since hearing from you. I haven't contacted him for years and years. I love the man and I'd like to contact him. Have you been in touch with him too?

TT Yea.

FS He's a great guy. And Jim Harder's a good guy—one of the most intelligent men I've ever known—but I felt like he had lost his objectivity totally. I wouldn't quite say that about Leo. Of course, Hynek died in there somewhere. [1986] It was after the Blue Ribbon panel. *National Enquirer* raised the reward to a million bucks, as I'm sure you know. There were a lot of interesting things there. I became quite good friends with one of their reporters, whose name—

TT Bob Pratt?

FS Yes, Bob Pratt, that's who it was. Bob Pratt got some photographs from a guy here in Salt Lake, asked me to evaluate them. So the kid and his girlfriend brought the

photographs up to Logan to show me. There was a prize involved and all that, and I glanced at them, and I said, "Did you have a tripod when you took this?" "No." Hand-held camera. It was obvious to me that he had a tripod, because the perspectives were the exact same in the different photos. He had something like seven or eight photos. It also became obvious he had pasted a cutout of a UFO on the window and taken the pictures from a tripod on the table inside the room. I went down to the house where he had done it and went in and looked and could see the situation. It was clearly what had happened. He was pretty upset. He was taking a photography course at a Salt Lake college. I wrote a letter to his teacher, as well as to him [laughs]. Told him to not be quite so naive as to think he could get away with something like that. It was pretty crude.

I've done a little photo analyzing in some other situations, but that was for the *National Enquirer*. I wonder what happened to Bob Pratt. I liked the guy.

End of Interview.

Biographical Sketch

Frank Boyer Salisbury was born in Utah in 1926. He graduated from the University of Utah with a B.S. (1951) and M.A. (1952). He received his Ph.D. from the California Institute of Technology (1955). He was an assistant professor of botany at Pomona College from 1954-1955, then assistant professor and professor of plant physiology at Colorado State University from 1955-1966. He served as a professor and head of the Department of Plant Science at Utah State University from 1966 to 1970, when he resigned as department head to devote more time to research and textbook writing. He retired in 1997 after leading a project to grow wheat in the Russian space station *Mir*.

Scope and Content

The Frank B. Salisbury Papers (1943-1997) consist mainly of research materials and drafts for Salisbury's writings, as well as information on UFOs. Administrative and teaching materials, correspondence, and other papers are also included.

http://db3-sql.staff.library.utah.edu/lucene/Manuscripts/null/Accn1778.xml/complete