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# Interview with Sherman Schultz, Professor of Astronomy

Sherman Schultz

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*Oral History Project*

**Interview with:**        **Sherman Schultz**  
                                  Professor of Astronomy, 1958-1996

**Date:**                    **Monday, July 16<sup>th</sup>, 2007, 9:00a.m.**

Place:                     Macalester College DeWitt Wallace Library, Harmon Room  
Interviewer:             Laura Zeccardi, Class of 2007

Interview                 1:12:43 minutes

Accession:               2007-12-21-33

Agreement:              Signed, on file, no restrictions

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**Subjects**

00:00            Brief introduction  
00:47            Educational background, optometry  
02:06            Arrival at Macalester with St. Paul Telescope Club  
03:54            Evening and first-hour astronomy courses  
06:23            Understanding of instrumentation, astronomy magazines  
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**Interview with Sherman Schultz**

**Laura Zeccardi, Interviewer**

**July 16, 2007  
Macalester College  
DeWitt Wallace Library  
Harmon Room**

[00:00]

LZ: My name is Laura Zeccardi, and I am a new graduate of Macalester College, conducting interviews for the Macalester Oral History Project. Today is Monday, July 16<sup>th</sup>, 2007, and I am interviewing Sherman Schultz, Professor of Astronomy, in the Harmon Room in the DeWitt Wallace Library. To begin, if you would just like to state your name, and where you are originally from, and then what year you came to Macalester.

SS: Okay. My name is Sherman Walter Schultz, Jr. I was born in St. Paul, up on Selby and Snelling. Not in the street, just across the way there. So I haven't wandered very far from my birthplace. That was in August of 1922, so that makes me eighty-five this coming—next month, in fact, in August.

[00:47]

LZ: To begin, maybe we can talk about your kind of educational background and what steps kind of led you to come to Macalester.

SS: Well, I graduated from Central High School in 1940. And then, because my father was an

optician, I was steered in a sense to go to the field of optometry. So, I went to Chicago, Illinois, to the Northern Illinois College of Optometry for five years, and I graduated in 1945, and joined my father at the Lowry Medical Arts Building with a practice of optometry and opticianry. So my acquaintance with optics was quite early in the game. In fact, it goes back to the '30s, when I built my first telescope. And this will kind of lead into the interim term project we had here in amateur telescope making, which was quite successful. So that—and I did have in the '30s, 1930 in fact, developed an interest in aviation, for reasons that I have a little illustration for, but [unclear]. [laughter]

[02:06]

LZ: So you began teaching in—was it the night school at Macalester?

SS: Yes, yes. We had formed a group of people interested in telescope making in St. Paul—formed a club that we called the St. Paul Telescope Club. And this was in the late 1940s. And we met at the Saint Paul Public Library downtown, and we had probably twenty to twenty-five members. It grew gradually so... The problem with the library was it closed at eight o'clock, and we didn't have any time to really make much of a program. You know, we took turns giving lectures and—but one of the parties, one of the persons that was attending was Dr. Waldo Glock. G-L-O-C-K. Waldo was the chair of the Geology Department at Macalester College. And he recognized our need for doing something about the meeting time. And the place is not convenient in downtown St. Paul, parking and so forth. So he offered the use of room seven in the Old Science Hall for our meetings. And that was just tremendous. Our group grew. There was more incentive to come because now we could stay until nine or ten o'clock, depending

upon the program. And I think that that was the basic introduction of astronomy to Macalester College.

[03:54]

So...in the early '50s, they had asked some members of the club to conduct a course in the evening adult education program that Macalester was offering at that time. They would be held in the same science hall, room seven, as well. And they had some volunteers from members of the club. But Macalester wanted to have somebody with some letters after his name. And I was a doctor of optometry, O.D. Well they asked me, and I thought, well, okay, [laughs] I'll give it a try. And it went very, very easy, very smoothly. We had probably twenty-five or thirty adults in the group, and there was questions that they would ask, and I was fortunate enough to know a bit more about the subject than they did, so I could answer them with some degree of confidence. I understand that they had started a day school, a regular course in astronomy, with a professor brought over from the University of Minnesota. I can't remember his name because we're talking now quite a few years ago. I get many senior moments in my present condition. And he took on the class for two years. But he did not like the commute over from the university and that, so he dropped out. And then Professor Glock asked if I would be interested in taking over a first-hour astronomy class. He recognized that I had a practice to go to and so forth, and I thought, well I could arrange my schedule for that, so if they want me on a part-time basis, well fine, I'll give that a try. Well, that was about 1958, and they still had the evening school so I had a dual. [laughs] In the evening, I'd have the adults, and of course, these are adult students too, in a sense, in the school. So that was the start of my journey into teaching.

[06:23]

Now I have had no formal education in astronomy. My background, though, was heavy in the

sense of instrumentation and use of them. And back in the '40s, we relied on magazines such as Scientific American, Sky & Telescope, which started out 1941. And we had a base of information that an instructor—I never, I have never considered myself a professor. I've considered myself lucky to be an instructor. But when people start talking about Professor Schultz, I kind of [noise]. [laughter] Well anyway, you get the idea. So that was the start. And it was prior to Olin Hall being built, which came into being in 1965.

[07:24]

Well, they had this flying club. Some alumnus had donated a very nice airplane to the school. And they harbored it down at downtown St. Paul Airport, Holman Field. And it was a two-place airplane, tri-gear, just easy to fly. And the school furnished the time, and you paid for the instructor. You have to understand, by today's standards, and—what I have to tell you sounds impossible—but for an hour's worth of instruction flying, and, you know, doing all the stuff, that and that—five dollars an hour including the instructor. [laughs] How could I pass that up? Well I didn't. And I didn't tell my kids or my family that Dad was flying now, that he was taking lessons, so... I finally told them the day that I—before I soloed. So they went down there, and Dad took the plane up and around two or three times and that was wonderful. But... So now I could, I could be on my own and I could actually rent out that airplane for an hour or two without instruction. It was still five dollars an hour, so... It was only ten minutes from my office down to the airport because my office was downtown. So I got away with it, but I think my wife kind of [gasps] gasped a little bit when she found out. You know, what it was so that was my—well it developed, actually, to the point that, in late 1964, I bought an airplane, a new one, from the same company that made the one that we had here. With just a little different design. It wasn't the tri-gear, but it was just a beautiful little airplane.

[09:30]

So here comes 1965, I'm happy in the spring, flying, and then I'm seeing what's going on at Olin Hall in the astronomy mode. Beautiful planetarium. Huge observatory, for which I was making instruments. No, not really no-cost [unclear], because instruments are expensive. And we had—well, it wasn't—it was a bit smaller than this room. And it had four basic stations. And I could—when I had my first class in '65, I was in Olin Hall. The room—oh, by the way, I was no longer under the geology labeling. It wasn't Geology and Astronomy now. Just Physics and Astronomy, because Geology was still in the Old Science Hall and didn't get into the—until Rice Hall was built. Then that's when they got in there so... There was little change in the notation of—it was Physics and Astronomy. Well I went—I got into my first classroom, which had eighty-eight seats, and they were standing yet. How can I handle this? Well the first thing I knew, I had to get rid of the airplane. [laughter] I couldn't find time enough to make it worthwhile keeping. So, we had about four hundred dollars on it, and—the company, I called them and told them the story. They said, "We've got twenty-five people waiting for a call like this." And they picked it up on a Thursday, and gave me the check the next Tuesday. So, you don't sell things like that very often. So I could now devote my—Macalester as part of my career, to using the planetarium—I had some experience from commercial planetariums that I had visited and so forth—and fitting the observatory schedule in with my schedule. So this was 1965, and the size of the class never diminished. I mean, finally they had extra chairs in the room, you know, and so forth. I'd get there an hour early. It was the first hour of class because in my college days, when I was going to college, the first hour of class was seven o'clock in the morning. Nobody complained; that's what you did! Seven o'clock. So, I continued that. I filled up the board with material, and—reviewing the other—the previous day's messages, so



that they had some continuity when I get into a little different area or aspect.

[12:56]

So that went on, and then, somewhere around that time, they started the interim term. I have senior moments when it comes to exact years, even, but I was asked by the Physics head if I had something that would fit into the theme of one month—taking a single subject different than you ordinarily would do and so forth, and I said, “Well, I think we could make some nice astronomical telescopes.” “Oh, well how do you do that?” Said, “Well, it’s finicky. It teaches patience. You’re working with a millionth of an inch surfaces, and with procedures that allow you to perceive that it’s a millionth of an inch on or not,” and so forth. “Oh, well...” What I had been given, when the architect interviewed me as far as what my needs would be in Olin Hall, I said, “Well, it would be nice to have an office. But I’d like to have a little shop area for that and a photographic darkroom.” “Oh, how would you like it equipped?” I said, “Well, uh...” He said, “Anything you want.” It wasn’t that, “Well now, look, we have just this many dollars, you’ve got to stay within that.” It was just, “What do you want?” Well, I got the biggest office, and the biggest shop, and the [laughs] nicest darkroom. And all the full-time profs would stop by and say, “Gee, where did you get all this room? [laughs] Aren’t you part-time?” “Yes I am!” Which kind of surprised me, because I had been told very early in the game that if you were part-time and you didn’t—you weren’t hired full-time after three years, you weren’t coming back. Well I kept coming back and coming back and coming back, so I realized that there weren’t too many people in astronomy available for this purpose. So I suggested that we start a telescope making class. And we make a genuine astronomical telescope, making a mirror and all the other adjunct parts that are necessary. There was a nice machine shop to work with over there, too. And I was pretty careful watching the fingers when they were doing a little work

down there. And the first year, I didn't have any idea how many would be interested in it. Eighteen showed up! My goodness sakes—eighteen? Well now, you get that many people coming in and working on delicate things, and—you don't want them to scratch their mirrors in proximity to somebody else, you know, and... So I wised up. The next year it was down to twelve. And I wised up a little bit more, and finally I limited it to eight. And everybody was happier because there was no crowding and so forth. Every—at the end of every January, when they had finished their telescopes and painted up nice, and they used—any design they wanted, they could use, and they were—had been using them, and they were very happy with them. I would take pictures of the group. Now, around the outside wall of the planetarium were display cases. So I would get twenty by thirty prints made up of each one individually, and put in these cases for the rest of the year. And it was fun to watch them walk by their case. [laughs] They avoided looking at it. They got—they were so shy about the idea of having that kind of publicity for everybody else to see. But that's the way it went and...

[17:24]

So, the planetarium schedule was one of the four hours a week that they were scheduled for. But the classes were so large, I had to divide that to a Tuesday half and a Thursday half. And we could get forty, forty in there comfortably. And I usually tried to get it started before they were snoring, because it's a nice dark chamber. And I had made portraits, large-sized portraits to put around the black walls, of Einstein and oh, people that were in science and that sort of thing, to kind of doll it up. I had fixed up a projection—multi-projector system that would project a full 360-degree scene around the perimeter. And these little projectors were individually wired and REA-statted, so I had my command post there, and I could... And I always figured if I did something like that along with a Beatles record in the sound system, they would stay a little

awake a little bit better for the program, or for the theme of the day or of the week, so... That was very—I was very excited about that, I mean...

[19:00]

In the mean time, of course, my family was outgrowing their house over on Berkeley. We had built a sort of economy home, two bedrooms. So we looked around and we ended up building a home in Shoreview, north of town. We were the first ones in the block. And I was able to buy the lot next door to put up my own observatory. And I called it the Cobb Road Observatory, because we lived on Cobb Road. And I had—I made instruments for it. And... With a lot of visitors. I had a lot of kids come out from Macalester too, because there we had dark skies—the great disadvantage of the campus observatories, in spite of the fact the original one had a fairly high wall. And the whole roof slid off; it's called a roll-off roof. So the whole thing was open to the sky like, you know, like that big space there, open. And the high wall blocked off some of the football field lights and that. Unfortunately, with the new observatory, which for some reason they named after me, they—it doesn't have that kind of a feature, and the lights are brighter. St. Clair and Snelling is a source of a lot of lights. So the—and it's down to one instrument now, it's a very good instrument, decades of thousands of dollars, and—one of the high points in the visitation of groups in the original observatory at Olin was in 1985, '86 when Halley's Comet came. And we opened it up to the public, in October, November, December, and until January, until it went behind the sun. Every clear night, it didn't make any difference if it was Christmas night, Christmas Eve, New Year's. It didn't make any difference. If it was clear, we were there with all four instruments. And you should have seen. I had some crackerjack students, who were... Well, four of them are now professional astronomers. They're doing great work in their fields—planetary astronomy and asteroid work, and so forth. I

mean, national exposure. In fact, one is international. And I digress here. Oh yes. We had opened it up to the public and there was some publicity about it. And we passed over three thousand people through there in that timeframe. And I've got a copy of a little souvenir of a visit that I had made up. And to the fact that this said that Halley's Comet had been observed at Macalester College Observatory, and I signed them, every one of them. [laughter] I brought a sample of one of those along too. But that was really—it was a great item for Macalester, because they were mentioned every time they had some notice about it at Macalester.

[23:00]

Even before, if I could go back again, I got a habit of doing that. Before Olin was built, before we had that observatory, I think it was the Olin Foundation, had financed a smaller observatory on the south end of the old football field. And it had a nice eight-inch telescope in it. It was a classic dome type. And down below was a classroom. And it was really very, very nice and we used that. In fact, I brought along a copy. I had sent in some information to Sky & Telescope about it, with pictures. There was a very special astronomical event, what is called a transit of Mercury. Mercury was passing across the face of the sun from our viewpoint. And they used one of the pictures on the cover of the magazine! So, that was—here's Old Main in the background. [gesture] That's early stuff, so... Gee, I'm open to questions! I've done all the talking! [laughs]

[24:18]

LZ: Going back to letting the community in to observe, was there a lot of community interaction?

SS: It averaged out pretty much one group a month.

LZ: Okay.

SS: And there were church groups. And then it would be word of mouth. It wasn't an ad in the, you know, the community paper or the St. Paul paper or anything like that. Somebody would get in contact with me, and they—and I would arrange it. It was a little more awkward in the first place, when we lived in Shoreview, because that was a long trip in. Now, my dear wife Betty worked in the cashier's office, until she died in '94. And so that was unexpected, but it happens. So we would come into town together, and then the kids were old enough by that time that they, you know, they weren't really latchkey kids, you know, but [laughter] they were going to school out there in the high school and so forth. So then I'd come back here, from my office downtown in the Lowry building, and pick her up. I got to the point that it was much better just to take the bus down and the bus back and leave the car here, see. And otherwise the parking—and that takes up more time than using the bus. I got to know the bus schedule pretty well, and it worked out just fine. Oh, then we'd drive out to Shoreview for whatever it was, supper and that. Then I'd have to go back in several nights to manage the observatory. I didn't like to leave it taken over just—I mean these boys that were—my assistant officially, you know, I happened to have an assistant, couldn't handle it, but I just felt more responsible if anything happened with the relatively delicate instruments. And they wouldn't feel very happy about it. I wasn't trying to be a policeman, but there has to be a certain order there when they do it...

[26:46]

LZ: So were you teaching only the one class then, in the morning?

SS: Yes.

LZ: And then was that—did that course ever change in terms of what topic it was on?

SS: No, no. Basically it was what they call a thirteen-oh-one. And Physics and Astronomy 13-01 was its official numbering system. And... I covered enough ground in a semester. It wasn't—we weren't ever on the quarter system. The nearest thing to that was interim term as a third thing, but it was a full semester, so I had time to cover both planetary or solar system astronomy, and stellar or stars astronomy. I used... There was some very nice commercial filmstrips that had become available just a few years before Olin went into operation. And I had sent away for a sample and I could see that it was just—today it would be archaic. I mean it would be, “Oh my gosh! You're showing filmstrips? Why don't you have TV and all this kind of stuff?” And well, that's what they do now, but that's a changing time because you're looking at a long time. Right now, what are we looking at? Sixty years? Is that all? [laughs] Sixty years! No wonder I feel the way I do! [laughter]

[28:22]

LZ: What were Macalester students like in the '60s and the '70s, and kind of your relationship with the students?

SS: Well, now you see... How could I phrase it because I had a first-hour class. I had to get

down to the office to take care of patients down there. So, my time on the campus and contact with the students was pretty well limited to the ones I had in my own class. And it wasn't as if well, I can go out and have lunch here at the cafeteria, I could sit down with them and—that wasn't possible. So... I don't know. I wouldn't call them a minimal contact, but it wasn't the same kind of contact that full-time professors would have available to, you know—I realize that there was some unrest at times. You know, I think they took over some rooms in the thing sometime, and I'm thinking, "Oh, for God's sake." [laughter] I didn't agree with the technique at all. I was 4-F. I wasn't in the service, so I couldn't condone or approve. So I was really quite neutral about that activity, and I didn't get up on the soapbox. Yeah.

[29:56]

LZ: So you thought, for the most part, that you were pretty removed from kind of the general campus life?

SS: Well, not by choice.

LZ: Right.

SS: I attended as many of the, oh, the outside lectures coming in the Physics Department, or Geology, or stuff that—those were all of the subjects which interested me. So I did participate as a student myself. And sometimes I'd pick up something, "Hey I could use this in my own classroom." You know. But I don't feel qualified really to make any definite statements about that. I all thought of the—generally a very, very happy situation. You know, as far as the

students were concerned. I never had one walk out on me. [laughter] You know what I mean. Not that I have such a dynamic control that they wouldn't dare to; [laughs] they may want to, but they didn't dare to. So I was—I couldn't have been happier on a personal basis. You'd have to be happy to go forty-two years of it, and a lot of traveling back and forth and all that, and still keep harmony at home, and maintain the practice. I retired from that in '85. Yeah. My folks had left town and my—I had another gentleman come in, an optician. I didn't care much for the mechanics of working with the—I couldn't tell somebody, "Gee, they look just right on you." That's why I had no... I couldn't do that. But I was—I felt very comfortable in being able to prescribe a correction that would serve them. But it got to the point that when my—when this friend of mine, who was now the—taken the place of my dad, he died unexpectedly in 1969, two days before they landed on the moon. That's why I can remember that. The first time. So, I just dropped my practice into a solo practice without working with a mechanic, just examination and prescribing.

[32:27]

LZ: Did you find that it was difficult to balance your work at Macalester and then your work at your office?

SS: No. Difficult, difficult is not—if it was that bad, then it would have interfered with family stuff. I would have had to do—done something. The reason I retired in '85 is that my overhead became higher than what I could take home. Being in the Lowry Building is not cheap, and that was one of the biggest mistakes I ever made—just to stay there—because people don't like to go downtown and park a car, and then walk and go forth. And as a witness to that, since 1985, I



have been downtown three times. That's twenty some years ago. And I just adjust my schedule. Of course, I don't get around like—I got new hips and knees and stuff like that, you know, and I don't—I can't stand up straight, but my friendly sympathy still keeps me going. [laughter]

LZ: Was there ever a time that you had ever considered stopping your work at Macalester to—I mean, you found it that enjoyable that...?

SS: Oh. Oh, yes, yes. No, if it would have worked out, I would have quit the practice and tried to go full-time here, full-time here. But with Betty working here and that—we weren't destined to, you know, I mean, we weren't rich, but we had just the three kids growing up and that. Then in 1972, the kids had flown the coop by that time, and Betty's mother was a widow, diabetic, needed help, and she had a duplex on Palace Avenue, not too far from Lexington, which is in this neighborhood yet. So we bought it from her and moved in. Now we didn't have a long commute. So it was a lot easier to get up here to do the things and so forth. So that was a great help.

[34:39]

LZ: Were there any other professors teaching astronomy in addition to you, or were you the sole...?

SS: No, I was the only one. Yeah. I was the only one that... I think Professor Kim had a course that was related in some respects to cosmology. Think like that, and—oh, I certainly should—I'm sorry—I certainly should have mentioned that when they had the dedication of the

new observatory in '98, Professor Kim Venn, who was a profess— Ph.D. astronomer lady, was on—was now the astronomer of Macalester. She was full-time. But it was still under Physics and Astronomy. But I got a call from one of the—Ray Mikkelson, who has just fully retired now. And the other month, just about a month ago, and he—first he said, “I just called to see if you were still alive. You answered the phone. I’m satisfied as to that.” So we chatted about different things. And then he says that Professor Venn had—has left Macalester. And her husband is an astronomer at the University of Minnesota. But she’s gone back, as he suggested, to Canada, where she came from. So, she was on the staff for, well, ten years. I know she had at least one child in that time. Might have been two, but—so I don’t know the background, and I’m not inquiring, and I just don’t know. But she was the continuity after I left.

[36:49]

LZ: Did you have a lot of interaction with the other physics professors while you were teaching?

SS: Oh, yes! Oh yeah, yeah. We got along well. Yeah, yeah. I could do more things in the shop than they could, and so I could help them out for projects and things of that nature. And that was a boon to have that machine shop down there. But the same way with the—with all the other sciences, I mean they treated me like I was a professor. I was grateful for that, but I couldn’t believe it. [laughter] You know.

LZ: Did you find in the beginning it was difficult for you to jump into teaching just because you had...?

SS: Well, yeah, I don't know what it was about it. It was just, I knew what I should be saying and I knew how to say it, and that's the way it was. And I moved around a lot on front. I think it would be safe for me to say that when I came into that classroom, I became an actor. I was on stage. And it's just—I didn't have to stammer. Now I do. But I mean, I was so confident in what I had to say and... Well, it must've worked because they kept me on and... [laughter] I had more smiles from the kids than frowns, so... If they frowned they didn't understand what I said, so that made me say it again.

[38:26]

LZ: Did you find that you had students from kind of all fields at Macalester? Not just—

SS: Oh, yes. Oh, yes. Yes, yes. I think a lot of them came in because it was a 13-01 class; that this would be...not a very difficult course. And I never tried to make it difficult, but I did try to make it comprehensive. And I think it surprised some of them after they got into it, that, “Oh my gosh! Who, who told me this was simple?” [laughter] But it is, it is a wonderful field, I mean for somebody to have a sense of scale as to their reality of the nature of not just the solar system or the earth-moon relationship, but beyond the sun and beyond the galaxy, so they—when they start talking light years, it's—you never say that somebody is light-years old, because light-years is a measure of distance [laughs] that incorporates time.

[39:36]

LZ: Going back to the interim period, I'm curious of how you, I guess, learned how to make these intricate telescopes and where...?

SS: Well, I knew how before I was teaching it.

LZ: Okay.

SS: Oh yeah. That was part of the club.

LZ: Okay.

SS: See, that St. Paul Telescope Club. Now, that got to be so popular, that Minneapolis started a club. The first thing you know, they were over here. And then they formed the Twin Cities Astronomy Society. And then that developed into what is now the Minnesota Astronomical Society. And they have about four hundred members all over the state. And so I was one of the founding members of that. If you go back to the St. Paul Telescope Club, there's been a lot of opportunity to... Well, I've been to several of these star parties in Texas, where there's about a week where the sky is really black and people bring telescopes you wouldn't believe it—non-commercial, but a lot of them were commercial telescopes. That's a big field. But, it was just so educational to see what's going on, and I always took a lot of pictures. And unfortunately they're not in order, but you know. [laughs] That's the stack, not the science. [laughter]

LZ: What did you do with all the telescopes that you built during interim, or the students built during interim?

SS: That was theirs. Oh, yes. Oh, yes. That was theirs. They built their own individual telescope. And, so this was quite nice for them to, excuse me, to have something as permanent as that that they could use in later life and so forth. But more than one—when they returned to the next semester—if they weren't seniors, then they could return—and they would tell me, “You know, we, I took my telescope out the other day, the other night at home, and we looked at Saturn.” And the neighbor would say, “Oh he really does have a ring!” As if to say that it was all made up. [laughter] And then the neighbor would say, “Well, where did you get—where did you buy this telescope?” “I made it. I made it.” They were so proud. I won. I won. [laughs]

LZ: Did you then make telescopes for Macalester to use within the department?

SS: Yeah, I did that. Yeah, yeah, yeah. It's something that I knew how to do. And instead of spending thousands of dollars for—I mean many thousands of dollars—they're not cheap. I was able to more than adequately fill the observatory there. You wouldn't believe it unless you really saw. It's really something.

[42:58]

LZ: In researching you, I've—in 1973, there was something called the Macalester College Eclipse Expedition?

SS: Thank you for bringing that up.

LZ: And I was curious as to what that was—

SS: 1973 was the date of a very special solar—total solar eclipse. And the reason it was special is that the duration of the actual totality was going to be almost record length. Almost ten minutes. And there was an ocean liner that was advertising the trip to Africa where you would get the best viewing. And I checked into the costs, and two of my students and my wife and myself... If you can imagine flying to New York, on the ocean over ten days, to and fro, stop at the Canary Islands, have a beautiful time for photographing and observing this eclipse. Sitting next to Neil Armstrong at the bar, having a beer. And I was so proud, I never once asked, “Neil! How was it standing on the moon?” [laughter] Nothing, didn’t bring it up at all. Isaac Asimov was there, and it was just—the Canberra was the name of the ocean liner, and it was originally made to bring people to Australia, emigrate to Australia. But just about the time it was done, the big jumbo jets came in, and they could fly to Australia in less than a day, so it became more of a luxury liner. And, the whole trip, if you can imagine all this, all the food and the airplanes and stuff in 1973, cost four hundred and seventy-five dollars each. [laughs] You can’t get off the ground for that today. It was just remarkable. We, well I had—we designed a little mount to put a small telescope on and—out of pipe fittings—and then it could be taken apart and reassembled on the ship, because we viewed the eclipse from shipboard, about two hundred miles off the west coast of Africa. They had had severe droughts for some time, and the wind was blowing from east to west. So, there was almost kind of a cloudy, dusty appearance to the sky. Even two hundred, two hundred fifty miles away from the storm, but it was just perfectly clear. Now stretched across the Atlantic Ocean, there were four or five other ships in the path of the shadow, and they would radio to the next ship how it was progressing. So we had a contact. We were the last big ship to do that. It was a very, very exciting adventure, I tell you. So, we had some stuff

in Sky & Telescope on that. In fact, I got material accepted from—by Sky & Telescope, especially—at least ten different times with Macalester, at the helm of the telescope making and techniques and certain things that we developed as the result of the making over two hundred and fifty telescopes. You learn what the problems are and you learn how to avoid them. So the last half—half dozen interim terms, those students never had a problem. [laughs] We learned them by... So that we had labeled as the Macalester Expedition. I had a big trunk, you know, made up, and I had all the letters on the—Macalester. [laughs]

LZ: Were there any other Macalester people that I guess accompanied you or was that...?

SS: Yeah, two students.

LZ: Oh, two students.

SS: Yeah, yeah, yeah, yeah. Yeah. Still good pals. Bruce Lundegard. Keuhl. Herbert Keuhl.

[47:39]

LZ: Have you found that you've kept in touch with quite a few students, or at least some of them?

SS: Uh, I like to write letters. And I don't write—I'm not a computer person. I have no interest in computers. And people, "Oh, huhh, no. Oh, you know, oh, it's hard to do that?" And I go, "No, I don't do that, I don't do that." I use a word processor so it's legible. When I correct all

the typos, it's legible. Frightening. And there's about half a dozen of my students that still keep good contact and—and others that started a correspondence as a result of the articles in the magazines. You know, they wanted a more expansive explanation of why this did what it does and so forth. So...

[48:31]

LZ: Did Macalester really develop a kind of a reputation for being a school that had a strong astronomy program and...?

SS: Yep. Yeah, yeah. There was a book out that was talking about all of the observatories in the country and where they were located and what they...what they kind of—what kind of an arrangement there was, what kind of a dome, and the instruments and so forth. When they got to Macalester, and used the material I had submitted to them by request, half of it was talking about the telescope making classes [laughter] and the number of useable telescopes we had in that observatory. When I saw that, they crumbled under the ax, I crumbled too. When the planetarium disappeared, that just... It's just like losing a good friend. You know it's just, just... You know... Explain it to me! Explain why you've got to take away this wonderful instrument, and so forth. And the answer was, "Well, we didn't hire her to run a planetarium." Well, I didn't harbor any hard feeling, but I could recognize that they needed the space. That occupied two floors. You know, big dome went up to the floor above the planetarium.

LZ: When did Macalester get rid of the planetarium?



SS: Well, that would've been '95, when they rebuilt Olin and Rice to make it one unit, instead of two units separated by halls. So, they needed more classrooms space. And I could see that. And I was—after that many years, why I knew that they'd want somebody fresher in there. They did.

[50:36]

LZ: Are there other changes like that that you have seen, given that you taught for over forty years at Macalester—are there other changes within the Astronomy Department that you've seen?

SS: Well, my capacity to keep close touch is very poor. And, in fact, [laughs] earlier this year I finally turned in my last two keys. [laughter] I didn't want to have the responsibility in losing them. But I would come in once in a while and use the shop. But everybody was busy. They had new people coming in in all the different departments. There was a turnover; people were retiring. A lot of people that I saw in the halls I never saw before, and so I had to be introduced to them, and then I can't remember the names and so, it—I was more comfortable by not coming in much. I went to some of the functions. Like they had dinners in downtown or whatever in the spring, and Christmas stuff and so forth. After Betty died, I didn't have much incentive, so...

[51:54]

LZ: Um-hm. Do you continue doing any sort of work on your own through— I guess does your interest still kind of prevail after leaving Macalester?

SS: No, basically reading. Yeah, basically reading. I've restricted my driving severely. I don't use the freeway for anything and I got a radius of less than ten miles. So as far as visiting a lot of people or things like that, Macalester is only a mile away from where I live, so—maybe a mile and a half—but it's too far to walk. And now, [laughs] by the time I get parked I have to walk so far, except I did find that one spot down there, and I hope that they don't give me a tag, but I do have my Macalester parking stickers on the car. [laughter] But it's been just a wonderful ride. I remember so many of the old-timers. What—what's—you know, all along, I almost considered myself to be the youngest of the people teaching. I mean I thought that, you know, I thought I was the youngest. Now I find out that I was probably the oldest. When I talk to Ray Mikkelson, he says, well, he's—he's now seventy. Well I'm fifteen years older than that. So when I was starting in '54, he was still in high school. And it just—I've always thought that I was kind of the baby of the faculty, but I guess I wasn't. Maybe I acted like one, [laughter] maybe that's why. [phone rings] [laughter]

[53:59]

LZ: Towards, I guess maybe, now that you don't have much interaction with Macalester, you obviously can't kind of comment about things now. But by the time that you retired in the '90s, had you noticed a lot of, I guess change within just Macalester as a college, and maybe outside of...?

SS: I, well... I wasn't looking for it.

LZ: Um-hm.

SS: I would try to read, you know, what was in the paper, and certain events, and so forth. But I honestly, I never thought that—of looking for it, of looking for anything like that. I was busy taking care of myself then, you know, because I still have a solo life that... But, with the way the faculty, and other people that I knew, changes, and I don't have people to come to to visit. So... I don't know if they want to have me visit anyways. They got their own schedules to take care of. [laughter]

[55:13]

LZ: I have a question for you. Has anyone ever approached you or maybe the college and said, “What role does astronomy play in kind of the liberal arts college?” Because it seems as though...

SS: No, that hasn't. That hasn't happened to me, but I think by the time I was into my presentation, that the majority of the students had an opportunity, if they had paid a normal degree of attention, to come to appreciate that there is merit in having a background and understanding of the true nature of things, instead of something like astrology. I mean, “Oh, Mercury and Venus are close to each other in the sky and that means that's bad news,” or something like that. I mean, well, they're never close to each other, it's the line of sight they see. Things like that... I did make a point of destroying any attitude they had about that, but I just tried to present to them the reality of the possibility or probability of these objects having anything other than imagined effects of how we live or die or whatever. For example, what's the mystery about the number seven? Huh? Well, it's lucky, lucky, lucky. But after all, digital, ten.

If you take your shoes off, you got ten more. You know, why not ten? Why seven? Why are there seven days in a week? You don't know.

LZ: Right, you just kind of...

SS: Yeah, you take it for granted, don't you? Well, if you know that it is an expression of the contents of the observable solar system, which is why it is called the "Sun's day," "Saturn's day," "Frigga's Day." In other words, there are—there's the moon, "Monday." You know, the moon and the sun are obvious, that's two. But the naked-eye planets, meaning you can see it without—you don't take your clothes off, I mean—but [laughs] you don't have any instrumentation. You've got Mercury, Venus, Mars, and Jupiter, and Saturn. Five more. Summation, seven! And these are mysterious objects because, contrary to the stars—they are usually brighter—but they move! And stars don't move. They hold their positions. The big dipper stays that way throughout a significant time period. Which for you and I is our life span. That's the only significant time period, okay, but for historical records, it's been that way. So stars are different, but because they are so distant, people don't think of them as the sun. With the profound number of stars involved, that the probability of other planet systems is—it isn't a probability, it's a demand! There has to be. So, there you have platforms, see? But the important ones are the ones that ancient people revered and made gods out of. Why? Because they couldn't explain them. If you can't explain them, deify it.

[59:14]

LZ: I only have two more questions. And—

SS: Yes!

LZ: My one was, even though you were teaching, did you feel as though that you were also at the same time sort of a student, in the way—gathering information for yourself and then presenting it to your students.

SS: Yeah, yeah. Well, in a sense, I guess that's what you get when you go to school. You absorb information, and you move it around a bit until it makes sense and all that kind of stuff. If it doesn't make sense, you don't talk about it, because it doesn't seem to work too well that way. But, I've always been, I suppose what—I know my wife would sometimes complain that I was reading too much. “There was another one of those darn magazines came today,” [laughter] the Sky & Telescope, or Astronomy, or something like that, you know. I have acquired a large library of the magazines— no, Macalester library has the Sky & Telescope, at least when I was here, going back to November '41 was the first issue, and I had acquired it. But I just recently have donated my entire book library and that to the Minnesota Astronomical Society, because at age eighty-five, there will be an awful lot of throwing out of things [laughs] when I'm not around to—and it's— I don't have time to do it, so it's just kind of a possession, you know. But uh, I wised up myself. They were glad to get it. They came to pick it up, and you should have seen the stuff they took. I got a little room for storage room now down in my storage type basement. So that was one aspect of my acquisition of information that I could organize, in a manner that I would have liked to have had it presented to me.

[1:01:20]

LZ: When you retired from Macalester, did you continue work in the field outside of the college in more of—I guess with the other societies that you had been involved in?

SS: Yeah. See, I retired from my practice in '85, so that was one down already. And then I left Mac about '90 or after that. So I've been what, thirteen years, fourteen years now, without either the practice or the teaching situation. So, it gives me time to myself, sometime more than I want. But I have a variety of hobbies. I like standard photography with film. [laughter] I've got a collection of cameras. But I do like the digitally—I'll go that far. But, I've got six grandkids. One married. No kids, no great-grandkids. But they're all doing well. One is graduating. The youngest is starting high school. And the—her brother is going as a senior, you know. But the rest of them are all—they've gone through the level above four years. They have, what do they call it then, not masters. What's the next degree of—not doctor but... After you graduate, then you take more courses. I can't even recall what the title of that is, but it's another level, two years or so, master or something.

LZ: I think it might be masters.

SS: I think that's what it is. They're all doctors, or doctorates, or is that so—they're doing well. I take no credit. They know what they're doing.

[1:03:28]

LZ: When you look back and reflect at your time at Macalester, is there certain things that come

to mind, or perhaps a favorite memory, or a favorite time at Macalester?

SS: Oh, there's so many! Every—there never was a dull day. There never was a— when I'm driving up to school, I've got the first five minutes in my mind now, that I've gone through this and all that kind of stuff. And it was just—and sometimes I think, “They actually pay me to do this!” You know, part-time people didn't earn a lot, but it was fun. I never complained. And it was—well I guess that's what the attraction was, that there was enough to the subject matter that it could be fun. And then to— I suppose some people say, “You evangelized!” Well, if that's what you want to call it, I suppose it's related to that, but in a different mode. You know. Things that I was comfortable with and felt I could understand, not that I was right in everything, but I don't think anybody is ever right in everything.

LZ: Well those are my questions. Is there anything that you would like to add that we—that I haven't covered in my questions?

SS: Oh! Well, uh... Could I—

LZ: Oh yeah! We could do, we could do the stuff that you brought.

SS: I debated about this for some time...

LZ: Oh no, I'm glad that you did.

[1:05:12]

SS: That possibly... Oh, I left the frame. [laughter] When they had the—when they had the dedication, the planetarium was gone. And I had salvaged the paintings that I had made around the inside of the planetarium. And this is the—give you an idea of the size of them. And uh, there was Einstein, and very, very famous people that the students could understand because the name would have been familiar to them. Now, aviation. Aviation! 1930. This is what the kids did in 1930 after Lindbergh flew the Atlantic. [Shows a picture]

LZ: [laughter] They've all got the little—their little planes—

SS: We made little wooden model airplanes out of apple box wood. And we would run around the neighborhood flying them, like this. [gestures] Of this group, two are still alive. This is Sherm right here. [gesture, laughter] I'm kind of peeking over it. And my friend Jess is way over here on the corner on this print, unfortunately. And he's been quite ill for a year or more with Parkinson's. So the rest are gone completely, and I'm not that far from it, [laughter] but can you imagine [laughter]. This is where the aviation interest started. Out of the group, I was the only one that learned to fly. But Jess was with the FAA, an accident investigation, so there was a relationship there. So that's a very favorite... Now, I mentioned...

LZ: Oh, yeah.

SS: ...Sky & Telescope using one of my prints of the original observatory on the campus. And if you look in the background, you'll see Old Main. And this is where they had a—an



arrangement of projecting the sun into the inside of the observatory with mirrors, and we could see the little black dot that Mercury represented as it went across the face of the sun. So this was a rare event and we had clear skies. Unbelievable. This is not really related, but this is my second cover. That is from my home in Shoreview—in Aurora.

LZ: Those are photos that you had taken?

SS: Yeah, yeah. So I hit the bell there. [laughter] I can brag a little bit about that. [laughter] I don't know. Oh! Yes, yes, yes, yes.

LZ: Oh! Oh, and those are what you signed. Oh, wow. [laughter]

SS: Two thousand of these I signed over that time frame. There is a picture frame company somewhere on Snelling. And I stopped by once and asked him if he had seen anything. He says, "What's going on?" He said, "I'm getting dozens of people who bringing the thing in for framing!"

LZ: Oh, really?

SS: [laughs] Yeah. You can see why. All these little items that stay with you, you know, as long as you're able to read it or whatever. But, now, I don't know if, in the process of editing, and this may require a lot of editing, but if there is something that you could use in that tape that I sent over. And if that—that was my first attempt at reviewing the origins and fate of astronomy

at Macalester. And I even had a suit on, you know. I debated. I didn't know what the heck to wear today, you know! [laughs] And I tried on... [laughs] I'm too—I've out-grown my suit clothes. I don't have a schedule anywhere that requires it you know. [laughter] So...

LZ: Well, thank you for coming and sitting down and talking with me.

SS: Well, it's been probably more of a pleasure for me than it is for you, but...

LZ: Oh, I enjoyed it. I feel like I got kind of a...

SS: I just that hope there's enough material there that you can work out with all—without all the—whatever else I do.

LZ: I'll have to ask Ellen more about the video. I think she might have watched it when I wasn't here, and so I know that she's got that up there and so...

SS: Well, whoever. It's—I've... Well, I had a lot of people come in from out of town. One was from California, one was from Texas, and one was from the East Coast. Former students and things like that, and invitations had been sent out, so they were interested in the subject of astronomy to begin with, and they wanted to see, you know... The only thing that I can't handle is the spiral staircase necessary to get to the thing. I can't do it. So, in spite of the fact my name may be on it, it's in name only. [laughter] It's a very sophisticated instrument. As you know, the sky moves and you have a drive mechanism on the telescope that follows. But not only that,

the dome opening follows where the telescope is pointed. Well, with the open roof system that we had, that wasn't necessary. But we did have the drive mechanism that would be necessary.

Well, I— Amen?

LZ: Amen! [laughter]