

Excerpts from an Interview with Henrietta Hill Swope¹ by David DeVorkin, August 3, 1977 at the Hale Observatories, Santa Barbara State

Section I: Early Life, Education, and Interest in Astronomy

Swope: When I was young, I became interested in looking at the stars. This is when I was about 10 or 12, and I took William Tyler Olcott's book. It's a little book about finding stars or something. Constellations. And I used to go out and identify the constellations. Especially in the summer, because the winter was too cold.

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DeVorkin: So your first touch with the stars then was [in New Brunswick, NJ]?

Swope: Through my own thing. Then I guess — well, I always was interested in the stars, and then, we went to Nantucket in the summer time, and Margaret Harwood was the astronomer there, at the Marin Mitchell Observatory, and she had lectures at the Observatory. We'd go down from Wauwinet and my oldest brother and myself, I'm the oldest in the family, then my oldest brother, we usually rode down on horses. It was about a nine mile trip down and nine miles back.

DeVorkin: Where did you live on Nantucket?

Swope: Oh, we were up at Wauwinet, Nantucket. I heard Dr. Harlow Shapley talk. She would invite Dr. Shapley down. He gave a lecture that excited me very much, about the universe and about his finding the globular clusters all in one place and their place around the Milky Way, the center of our galaxy.

DeVorkin: Could you recall the approximate year, give or take a few years, that you heard this lecture?

Swope: I think about — probably around 1917.

DeVorkin: That certainly was a time when he was very excited about that.

Swope: Yes he was. I guess I went to college a few years later in 1919. I graduated from Bernard College in 1925. I went to Barnard because I didn't have any Latin. My father didn't believe in any Latin. He thought I should spend that time on either sciences or modern languages. But I don't know — schools at that time really weren't equipped.

DeVorkin: He was science-oriented, it sounds like.

Swope: Father?

DeVorkin: Your father.

Swope: I think so. He went to MIT and was an electrical engineer.

¹ To access the interview transcript in its entirety, see <http://www.aip.org/history-programs/niels-bohr-library/oral-histories/4909>.

Section II: Swope at Barnard

DeVorkin: At Barnard, did you study any astronomy?

Swope: I took the astronomy course that was offered at Barnard, the last year I was there, and that was with Professor Jacoby. That was also the last year he was teaching. And I don't think that would have inspired me to go into astronomy. He was sort of tired of teaching these young women. I felt as if all his jokes had been told 10 or 15 times already. Things like that.

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DeVorkin: Well, as you were going to college at Barnard, did you really think that you wanted to be an astronomer? Did you have that in mind?

Swope: Well, not too much. I majored in math in those days, I majored in math because it was easier. I could get it out of my way, and concentrate on other courses which I liked, which anthropology and zoology and history, things like that. Not so much history.

DeVorkin: What was the general idea you had in mind, as to what you were going to do with this?

Swope: I don't know. After I finished college, I went out for a year to Chicago, and lived at Hull House for a year, and went to the School of Social Service Administration, at the University of Chicago, which had at that time Miss Grace Abbot and somebody else who's famous also. I think it may have been not Miss Grace Abbot. Oh, it's awful, I haven't thought of this for years. Well, anyway, I took this course, and I also went out and had a course outside, where you had to go to a place where I was helping old people. And this was just, I think, too much for me. And Margaret Harwood wrote to me while I was out there, March or April, and said that Dr. Shapley was offering some fellowships because he wanted some women to work for him, on special projects. I don't know if it was my interpretation or it was hers, I guess it was mine, that he wanted some cheap workers!

DeVorkin: How did you feel about that?

Swope: I think I wrote back to Dr. Shapley or to her, and said I didn't know much astronomy but I'd like to try, if he wanted it. And he wrote and said, he knew the astronomy, and I could come. So I went there the next year. And I've been in astronomy ever since.

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DeVorkin: When you were out there on Nantucket, did you actually work with Margaret Harwood on the variable star work that she did?

Swope: No. I went down there and took a course in the evening with her, which was general astronomy, but I didn't — I know she was working on the variables then, but I never had anything to do with that.

DeVorkin: Were there other women who were working with her, at that time?

Swope: Not so many. Not as many as there were later on.

DeVorkin: So she didn't have a formal course in astronomy that would have brought college level women in from the area.

Swope: I don't remember anybody but myself and my brother.

DeVorkin: OK. And your brother.

Swope: She had about 8 people in that class. I don't remember anyone else there.

DeVorkin: And they were mostly summer residents.

Swope: Yes. I think so. Mostly summer residents.

Section III: Swope at the Harvard College Observatory

DeVorkin: What was the atmosphere like at Harvard when you started working there?

Swope: Oh, it was very nice. Everybody welcomed me. Cecelia Payne Gaposchkin was there — Cecelia Payne at that time. She'd gotten her doctor's degree. Adelaide Ames was there. They became my very good friends.

DeVorkin: Who was the second person?

Swope: Adelaide Ames. She and Dr. Shapley did the Shapley-Ames Catalogue of Galaxies. It's still used. You still hear of it, which is, I think, quite remarkable.

DeVorkin: Certainly. Well, that first several years there, of course, Shapley's work continued, and more and more astrophysicists came.

Swope: Well, Dr. Shapley of course wanted me to do variable stars, find variables. He didn't tell me much about it because of course I was presumably a graduate student, and he later turned somebody over to me, and I said, "Well, should I teach her how to do this, or should I let her find out for herself, as you let me find out for myself how to do it?" He said, "She isn't on a fellowship. You can teach her." So, first I had to find out for myself, how to do it.

DeVorkin: How did you do this? Did you talk to some of the other people?

Swope: Well, there were other people who'd worked on variables. A lot of work had been done on variable stars there. But I compared plates and found them and measured them. The first field I had was very discouraging. It had very few — it was right at the center of the galaxy, so it was mostly dust clouds, and had very few variables. I could probably find more now, but I didn't find many then. He had divided up the Milky Way into I think probably about 200 sections, most of it in the Milky Way, but also at high latitudes, and I had a section. Then I had another section. I had three or four sections, and other girls who came there had other sections to do. Finding variables.

DeVorkin: How did you feel about doing this kind of work at that time?

Swope: I liked it.

DeVorkin: Finding the variables? Or getting the periods of known variables? Or both?

Swope: Oh, well, you do both, because there are a lot of variables that had been found, but didn't have any periods. And I always found — well, I guess I enjoyed tedious work, routine work. But also, when you got the periods, it was quite exciting, and at the end, it was quite exciting.

DeVorkin: Right.

Swope: And I stayed on variable stars there, also took a few courses, but mostly stayed on the stars. Got a Master's degree at Radcliffe.

DeVorkin: That was quite quickly. Did most of the women at the Harvard College Observatory at that time come to get advanced degrees?

Swope: Some of them did. And some of them of course went on. I didn't want to go on, at that time. I thought I'd about had enough study. But there was Helen Hogg there, who went on and got a PhD, and there were other women who got PhD's.

DeVorkin: What was your contact with Mrs. Gaposchkin? Was she interested in variable stars at this time?

Swope: Oh, she was a wonderful person. Have you ever met her?

DeVorkin: Not personally. I hope to.

Swope: Yes. I think she was a wonderful person. You could talk to her. She had her own personal problems, very often, and they always consumed a lot of time, but also you could talk to her, and you always felt as if you knew an awful lot. She made you feel as if you knew an awful lot, which is a very flattering way. And she knew a lot. She'd worked on — well, she was in astrophysics and spectra and stuff like that, but she also knew a lot about all kinds of astronomy.

DeVorkin: Did she ever talk about women's place in astronomy at that time?

Swope: Well, she — she was sometimes quite bitter, because of course, at that time, we had no place, really. We worked, as I said, cheap labor. So, I did talk to her quite a bit. Then later she got some acknowledgement, and I think she was acknowledged abroad, and other people knew her, and knew her work. I can't tell you, quite how we were used — I hate to go into that.

DeVorkin: Well, if there are any recollections, it would be of importance to recapture them, because in some ways, it might have affected the astronomy that was done at that time.

Swope: Well, of course, on the whole she was kept down or kept in her place — kept down very much. And I think she was very fond of Dr Shapley, and I think he could use her. And he could also disturb her, very very much.

DeVorkin: You mentioned that she had, from time to time, personal problems. Was this anything to do with her research work or personal?

Swope: Well, yes. It was personal, and I guess it was with her research work, very often.

DeVorkin: Did you feel unusual, working as a researcher, at all?

Swope: No.

DeVorkin: You certainly felt a part of the team? Of the effort?

Swope: Yes. Yes. I guess I didn't expect so much. And so, I didn't mind how I was treated. There were a lot of women there you see, when we came in there, it wasn't long after Pickering's death. Dr. Shapley had been there four or five years.

DeVorkin: Approximately, yes.

Swope: And there were a lot of women left over from that time. I thought they were awful stuck in the muds. Some of them — Miss (Annie) Cannon was a very wonderful woman, but the rest of them were not. That's Annie jump Cannon.

DeVorkin: Sure. Well, Henrietta Swan Leavitt had already died.

Swope: — Yes, she had already died. She had been a wonderful person.

DeVorkin: Did you know her?

Swope: No. I never knew her. And I don't know, she was really a wonderful person. Miss Cannon was a wonderful person in that she had great interest in people and life and in doing things, and this is what the other women didn't have. Then there was also Antonia Maury, who was there, and she became quite a person, and has done real work in astronomy. The others merely worked there.

DeVorkin: Well, how do you think these were different from the others? Why were they different? Something in their personalities.

Swope: Yes. Probably.

DeVorkin: That's an interesting observation. Do you think that if these women had been men, in that society, they would have gotten more chance to do things?

Swope: They might have. But I think there are a lot of men, really, who don't really amount to much.

DeVorkin: — true —

Swope: But of course, they have a little bit more force behind them, and a little bit more ambition behind them. The women only work to support themselves. These were mostly unmarried women, and there were two Miss Gills, and Miss Wood, and Miss Wells ... and I don't know if they had real interest in astronomy or not. Miss Leavitt did, and so did Miss Maury. So did Miss Cannon, of course.

DeVorkin: Did you ever hear discussions of Miss Maury's association with the observatory, with Pickering and her work in stellar classification? Did people ever talk about the acceptance of her rather complicated system?

Swope: No, I don't remember any of it. I knew her mostly because of Beta Lyrae.

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DeVorkin: Were you supporting yourself completely, as researcher?

Swope: No.

DeVorkin: Your family was helping.

Swope: Yes. Right. I had an allowance.

DeVorkin: The Harvard people weren't able to pay enough to support you?

Swope: I don't know. I don't remember. Maybe. Did I get a thousand dollars, that first year? Well, for a great many years, that was all that I got. When I left there, at the beginning of the war, I was getting \$2000 (World War II). Then I went to work for the Hydrographic office at MIT because an astronomer was working for him, and there, they said, "How much were you getting?" And I said, I think, \$2000. That's what they say they would pay me, what I was getting, but that was too little for them. They couldn't. So I rose fairly quickly.

DeVorkin: That was good to hear. Then during the thirties, you were involved completely at Harvard. Were you always working for Shapley during that time?

Swope: Well — with Shapley.

DeVorkin: You really did feel you were working with him?

Swope: I was working with myself. I mean he did supervise me, and he was over it, and did the whole job, but still — I did my own work and published it. Except when I got a very interesting variable or two. He'd stick his nose into it!

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DeVorkin: How was it really in general sense to work with Shapley? What was the atmosphere? Was he always full of surprises? Or was he very steady in his work habits?

Swope: Well, I think he was pretty steady. One time we were surprised. He called all of the staff into his office one day, and he got us all sitting in his office, and then he announced that Cecilia had eloped with Sergei Gaposchkin.

DeVorkin: Eloped?

Swope: Well, they'd gone to New York to be married.

DeVorkin: Oh. That's an interesting story. I didn't know that. You mean, no one had known that they were going to get married?

Swope: Well, I think they might have suspected. But I don't know.

DeVorkin: How did Dr. Shapley announce it?

Swope: He just told us.

DeVorkin: What was the reaction?

Swope: Well, I never smoked. I took a cigarette and lit it, and that was so unusual that everybody had to remark on that. I don't know — we were all surprised, a little bit dumbfounded.

DeVorkin: Was it that she was going to get married, or that you just didn't know beforehand, just a surprise?

Swope: Well, it was a surprise.

Section V: Career after the Harvard College Observatory

DeVorkin: Did you know where you were going when you left [the Hydrophonic Office in Washington after the war ended]?

Swope: By then, I guess I had been asked to go to Barnard College to teach, and I said there I had never taught, but they would try me in one course. I also went over to see Dr. (Jan) Schilt who was at Columbia, and he gave me office space, and said I could do some research there. So I sent for the Harvard plates and worked there for a year or two. And at that time, I went and saw Dr. Shapley, and I said I might do this — and he was rather glad, because, he said, he had no money. I guess he had no money.

DeVorkin: Was he about to retire at that time?

Swope: Well, it was about four years before he retired. I think he retired in '52.

DeVorkin: He was still chairman then — did he have no money, or was he not active?

Swope: Well, he never had very much money. He was always living from hand to mouth, and this was one of the problems and one of the criticisms of him, that he always did live from hand to mouth — and this is also why he always had cheap labor, because that's the way he supported it.

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DeVorkin: Ok. Well, how did you end up coming out here to California?

Swope: I stayed at Barnard two years, and then Priscilla Bok, she's the wife of Bart Bok, she was Priscilla Fairfield, who was an astronomer in her own right, got her PhD, at Lick. She had been invited to lecture at Connecticut College for Women, and she wanted to take it, but she was going away with her husband to Australia for half a year, and so I was to go and substitute for her for half a year. So I did.

DeVorkin: This was at Connecticut College.

Swope: Connecticut College for Women. I had two half years, half semesters. And then at the end of that, I got a letter from Martin Schwarzschild, saying that Dr. Walter Baade would like me to come out and assist him. He had a lot of material which wasn't going to get done, didn't get published, and he wanted me to come out and help him.

DeVorkin: How do you suppose Martin Schwarzschild was the one who wrote you that letter?

Swope: Oh, because Martin Schwarzschild knew me. I knew him at the Harvard Observatory. He used to be at the Harvard Observatory, I guess he came from Germany to the Harvard Observatory, and I really liked him very much. And he knew my work. And I guess I had also met Baade, and Baade had heard my paper in Mexico, at the meeting for Tonantzintla, and then I met him at an IAU meeting I guess in 1943. So he knew me, sort of, but not very well.

DeVorkin: It was interesting at that time, how people were able to get these very important and interesting jobs with people like Baade — I guess they didn't advertise like they do today, and a lot of people apply.

Swope: No.

DeVorkin: Because this is really how you got all your positions, it was by direct references.

Swope: Of course, it was just by accident, I got all of my positions. I've never had to go out and really look for jobs.

DeVorkin: People approached you.

DeVorkin: Was there ever a difficulty, during your lifetime up to that point, where you knew you had to support yourself?

Swope: No. I didn't have to.

DeVorkin: Your family was quite well off.

Swope: Yes.

DeVorkin: Did this help in allowing you to do exactly as you wanted to do?

Swope: I'm sure it did, because I never really had to worry about myself and how much I was receiving. So that part didn't really worry me. I thought as if I had no foot to stand on — if I did want more money I still had enough to live on comfortably.

DeVorkin: It's a very different thing, in a situation like that. Many people feel, well, they're not being respected unless they are being paid more money. But you felt that you had enough money, and so you were doing just what you wanted. It wasn't a question of respect, you were doing what you liked, what you wanted.

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DeVorkin: And what kind of position did you first have when you came here [to Santa Barbara], then?

Swope: Dr. Bowen wrote and told me how much salary I'd get, and he said I'd be called a computer. I wrote back and said, "I've never been called a computer. I've been called an assistant or staff member" or whatever it was. It was sort of nondescript but you can make out of it what you wish. He wrote back and said the name had been changed, and it was now a research assistant. That applied then to all the other research assistant ladies here. Not computers.

DeVorkin: There were a lot of women here, too.

Swope: Yes. There was Louise Lowen and Mary Coffeen. These were aside from secretaries. And Sylvia Bird and I guess others.

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DeVorkin: What was your relationship with Baade? And how closely did you work with Baade?

Swope: I worked the way I worked with Dr. Shapley. It was his work, and for him, but I would do all the work and if I had questions, I'd go and ask him, and occasionally he'd come in and tell me what he wanted. But mostly I did on my own. And then he never wrote anything. So in the last few years, I was trying to write up things for him, because he was then retired, and he was coming and going, but he was supposed to come back here, and I was having to write up some of my work, and then would let him see it or adjust it. But then, I had to finally write it up. And I published it after he died. He never saw it. His name is on it.

DeVorkin: But people certainly realized that you were the one who actually wrote up the material.

Swope: I think so.

DeVorkin: He seemed to be a man that had the ability to see through things that confused other people.

Swope: Oh, oh yes. He saw through things, and he was very nice. There is his picture (on the wall of office). And I think he was a very kind man. He treated his wife a little bit autocratically, but I think she sort of expected to be treated that way. I think you are treated as you expect to be treated, very often.

DeVorkin: Interesting observation. It's probably true. Well, how did you want to be treated here, and were your wishes fulfilled?

Swope: Yes. I've been treated all right. And Dr. Bowen was a very, very kind person, very nice person. I think he always thought I should have had a better job. But he was always very much afraid of doing anything against what had been done before. I mean, they'd really had no women here before. That is, in the good positions. And finally, he saw to it, in the last two or three years, that I was made a research associate down at Cal Tech, which was some advancement.

DeVorkin: Well, had there been pressure from other people, to give you the recognition you deserved?

Swope: I don't think so. Unless — I don't know.

DeVorkin: How about Baade? Did he feel that you needed or required or deserved more recognition?

Swope: I don't think he would. I think he accepted me. I don't think he would have thought of it, is what I mean. This is what I mean with his wife. She thought she had to be there at his beck and call and do just certain things for him. I don't think she had to do that. I think if she'd spoken up and said she didn't want to, she wanted some time off to herself for something, he would have accepted it. If she'd got to it early enough, at least.

Section VI: On Women in Astronomy (audio available at <https://www.aip.org/history-programs/niels-bohr-library/oral-histories/audio/4909>)

DeVorkin: Did you find that the attitude toward you, as a woman working in astronomy, as an assistant and then as an associate later on, that the attitude was loosening up, and that people were gaining more respect for the types of work people did?

Swope: Well, I think they always had a certain respect for the type of work.

DeVorkin: But you were talking about the feeling, that you knew it was cheap labor, you said, or something like that, jokingly.

Swope: Oh, well. I joked about that, but I'm sure it was, too, in a way. Though I don't think you always should mention it. [laughter]

DeVorkin: Well, we started seeing more women involved in astronomy in professional positions, staff positions, teaching and that sort of thing, by the fifties, certainly.

Swope: But very few, actually. There are a few. Well, there are more, now, but they weren't so much as Margaret Burbidge and Beverly Lynds and Beatrice Tinsley and they say there's a very good woman like a Miss Sandy Faber? I've never met her but Bob Kraft says she's very good.

DeVorkin: I've heard her speak. She does a lot of interesting work in galaxies. Well, all these women now are able to obtain faculty positions. But I was very surprised to hear that it wasn't until the late fifties that Mrs. Gaposchkin was actually give full professorship at Harvard.

Swope: I don't know if it was the late fifties. It's the one thing that I think Donald Menzel did and Dr. Shapley never did, was to give her a position. And Menzel did give her a position at Harvard, and it's the one thing that I credit him for. You see, I didn't like the transition. I was very glad I wasn't there.

For further reading:

Biographies:

- Benjamin and Barbara Shearer, *Notable Women in the Physical Sciences: A Biographical Dictionary*, Westport, CT: Greenwood, 1997.