

Excerpts from an Interview with Dr. E. Dorrit Hoffleit¹

by David DeVorkin, August 4, 1979 at the Yale University Observatory

Section I: Hoffleit's Early Education and Interests

DeVorkin: What drew you to mathematics finally?

Hoffleit: In high school I got the best grades in mathematics. I never thought anything about arithmetic and algebra, but I found geometry was like the fine arts of mathematics. That was my dish. It was really an awakening, getting into a geometry class. All the students would say "Oh, that horrible stuff," and so on, but here I found myself all agog. They'd all told me it was going to be so bad. Very few children like mathematics when it's forced upon them. And here it was sort of the first revelation I had. I took education for granted before that— you take what you're supposed to and that's that.

DeVorkin: Did you have any interest in science? Was there any contact with science?

Hoffleit: In my high school in Cambridge [Massachusetts], they had exactly two science courses of which you took one your senior year. You had your choice between physics and chemistry. The choice was normally based upon work load: if you had an easy program with lots of spare time, you'd take chemistry because it would be fun messing around with things. But if you had a heavy schedule with five courses or six instead of the normal four, then you took physics, because you didn't have enough time for lab work, I took physics.

DeVorkin: You took physics. Did you have any contact with astronomy while you were in high school?

Hoffleit: None at all. For people who wanted to go to college, the emphasis then, was on the major requirements— particularly Harvard requirements because they were right next to Harvard— and the greatest stress was on languages, which was too bad for me because that's what I was poorest in, I can't learn a foreign language.

DeVorkin: Was it because of your brother's going to Harvard and your being in Cambridge that drew you to Radcliffe?

Hoffleit: Oh yes. Yes, as I say, I probably would have gone to a small college if I'd stayed in Pennsylvania. But Radcliffe was nearby, and as I facetiously tell everybody, I went to Radcliffe because my mother didn't want my brilliant brother to be ashamed of his sister, so she had to have an education too.

Section II: Hoffleit at Radcliffe

DeVorkin: What brought you to your choice of concentration? It was mathematics, wasn't it?

Hoffleit: Yes. I struggled very hard between mathematics and fine arts, and so far as my grades went, I got the same grade, B, in both of them the first year there. I went to the dean and asked if I could combine the two, I wasn't very explicit in those days. I didn't talk very much. So I don't think I had my

¹ To access the interview transcript in its entirety, see <http://www.aip.org/history-programs/niels-bohr-library/oral-histories/4677>.

arguments very clear. The dean said I couldn't possibly concentrate in fine arts and mathematics. Now, if only I just would have stressed the point that if one were going to go into, for example, architecture, one would need both! But I just was too timid to argue anything, so I had to make the choice.

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DeVorkin:

Yes, so he [Professor of celestial mechanics, Harlan Stetson] was your first contact with astronomy?

Hoffleit:

Yes. Well, first formal contact. I've always said, half facetiously but half in earnest, that I became an astronomer in spite of Stetson and not on account of him. This was because the way he taught astronomy, you had to have a native interest in the field itself. Now, Margaret Olmsted, on the other hand, thought she never had a better teacher than Stetson. But that was easily accounted for. She was a graduate student. She came from a prestigious family. I'm not sure whether she was related to the Olmsted who was here at Yale. She had strong interests in meteors also so there may have been a connection.

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DeVorkin: That's interesting. From the biographical sketch that Robin had of you in STAR AND SKY, there seemed to be a very early strong interest in meteors.

Hoffleit: Oh yes. I always had an interest in the sky as such, but in those days, the interest was very largely because of the beauty of it. All my interests in my early years centered around fine arts. This was beauty. I was looking for beauty everywhere. I had a very curious experience when I was a little girl. One little girl's parents took the two of us to a church fair where there was a booth where you could get your fortune told. So Lenore said, "Aren't you afraid to go in there?" I said, "Let's see what they'll tell me."— this was what amounts to an astrology den in a church fair, your fortune told by looking at your hands or something. So anyway we paid our dime or whatever to go into this attraction at the church fair, and Lenore got the usual story, about how she would meet a handsome young man when she grew up, etc. Then the lady looked me over. Of course she had something over her face so I couldn't see who she was, and probably wouldn't have known anyway. What do you suppose, for a fortune, that female told me? She said, "You must remember, my child, that everything in the world is not beautiful." (Laughter)

DeVorkin: What's that supposed to mean?

Hoffleit: I don't know. She may have known me and known that I was always admiring the beauties of nature and the beauties of things around me, and I was admiring the beauties of the skies when we were observing shooting stars. Of course you observe these things and soon you start asking why and how come.

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DeVorkin: Continuing our discussion of Radcliffe. You'd been taking a number of courses in astronomy. Were you getting interested in astronomy?

Hoffleit: Oh, I was always interested in it. But you see, it never occurred to me that this would be a practical thing to devote my life to.

DeVorkin: Why so?

Hoffleit: I thought that probably as a woman I would go into teaching my favorite geometry, in high school, when I graduated. But this was verging on the Depression and jobs were very scarce. That's why I didn't get any job immediately when I graduated. So I went back to graduate school, and took three half year courses in math and one half year course with my friend Harlan Stetson.

Section III: Hoffleit at the Harvard College Observatory

Hoffleit: But then at Christmas time, I got an offer of a 40 cents an hour job at Harvard Observatory, looking for variable stars. I was supposed to try it out during Christmas recess. So I went up there for Christmas recess, and if I wanted the job and they wanted me, then I would start when the first semester was over in February. This was Christmas, '28.

DeVorkin: And the offer came directly from Shapley?

Hoffleit: Well no, it came through the Radcliffe employment office. I guess the way it happened was that Shapley got a fund from the Swope family because Henrietta Swope was working at Harvard and they gave the daughter an assistant.

DeVorkin: Was that how it was supposed to go?

Hoffleit: So I and another 1928 classmate who hadn't gotten a job yet were up there Christmas recess to try this out, and I thought: "boy, this is Heaven itself." But my friend didn't turn up again. Months later, I saw her down at Harvard Square. Meantime, after I had decided that I liked this job but before I really started doing it full time, I got an offer from somebody at Bryn Mawr to do some statistics, at \$125 a month, which was approximately twice the salary I would get at Harvard Observatory. And I sat myself right down and by return mail said "No thank you, I've found a job I like." I mean, that struck me so forcibly. Here was something I could do, I liked doing, I wanted to do, and 40 cents an hour to me was fine compared with nothing at all. But the differential, of twice the salary, wasn't as important. It was what I was going to do that was more important. I might have worked into something beautiful on the more highly paid job, but I never regretted that. The same thing happened at the end of the war. They wanted me to stay at Aberdeen, and I went back to Harvard. They promised me a terrific raise if I'd stay at Aberdeen, and instead I went back to Harvard at 40 percent of what I was getting before the raise at Aberdeen. The Harvard plate stacks are the only place in the wide world where I belong. It's still true.

DeVorkin: How did your mother and brother react to your decision to do this kind of work?

Hoffleit: Oh, I think my mother was as proud as a peacock about my being there. The 40 cents irked her a whole lot, when she knew what other people were getting in other fields. Non—college graduates were getting a lot more. On the other hand, it was Harvard, and it was a field that her father was much interested in. He was a physicist, but she remembers that he had a telescope and showed her things in

the telescope when she was a little girl. So she was absolutely thrilled, because she felt that, even more than my brother, I was following in her father's footsteps. So she was thrilled.

DeVorkin: So there was no pressure from her for you to try to get married or anything like that?

Hoffleit: Oh no. I think she would have been happy if I had. But I think she was happier that I followed my own pursuits.

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DeVorkin: You were working with Opik, and you were also an assistant to Henrietta Swope?

DeVorkin: What did you do with her? Was it variable star work?

Hoffleit: She was in charge of hunting for variable stars in the Milky Way, and so she was really my first supervisor showing me what to do and so on.

DeVorkin: But she in turn was working for someone else?

Hoffleit: She was working for Shapley.

DeVorkin: How was it, working for her?

Hoffleit: Well, I hate to say it, but in no time flat, I decided that she was not very brilliant. She was very young, of course. She was older than I, but still rather young for being a supervisor. I think that, while she was doing very excellent work, she really did not understand the work. That is, she understood the work from the standpoint of what to do, how to do it, and she did a very creditable piece of work, very excellent. But I had a feeling she was doing it as a job more than as a research project as such. That is the research came automatically rather than something planned. She was doing her assignment and doing it very very well. But I didn't feel that she was an original thinker. And a few years after I started working in that field, I was even more forcibly struck by that, because she did not explain to me anything at all about spurious periods. I published a lot of spurious periods because I got assigned a region in which there were small numbers of plates, and if you have a small number of plates, you can easily get a period which doesn't mean anything, and it was no less a person than E. Hertzsprung who found the spurious periods in my publications.

DeVorkin: Oh, he would. He would find it in everybody's publications.

Hoffleit: Yes, So anyway, with her experience (she'd had a two year head start on me in this kind of work) she should know about spurious periods. I thought that was very very serious. But at any rate, before I knew about spurious periods, I'd already sized her up as a good person to show you how to do things, but once you caught on, you didn't need her any more.

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DeVorkin: That's interesting. What did you think of him? What were your first impressions of Shapley?

Hoffleit: Well, I liked him, I was a little awe struck because of course, the only contacts I'd had with professional people were purely as professors. ... He sized me up right away, that this was something I really wanted, so he could get away with minimal pay. I remember, at the end of the war, Henrietta came up to the observatory just as I was returning. (I stayed at Aberdeen a long time after the war, commuting back and forth intermittently, until such time as it was definite that I was going back to Harvard.) Henrietta came in, and she sort of sidled up to me and said, "What are you getting paid here?" Gosh, I'd like to slap her face for that, because the way I was brought up, you don't ask such questions. Well, I told her. "Oh," she sneered, "I was getting more than that before I left here before the war, and I don't even have a PhD." Well, Shapley was like that. Henrietta Swope without a PhD and Margaret Mayall without a PhD, both of whom would have liked to get it but didn't make the grade, were getting higher salaries at Harvard than I was.

DeVorkin: Really?

Hoffleit: Because he could get away with it.

DeVorkin: Well, Henrietta Swope left for Hale Observatories.

Hoffleit: No, she left for war work. From this almost hissing question that she directed to me, I think she wanted to come back, but wasn't going to come back at so drastically lower a salary than what she was getting when she was at the Hydrographic Institute, toward the end of the war. She started out at MIT, at the Radiation Lab, and then she went to Washington. I think she would have come back, if she had gotten an appropriate salary. She didn't need the salary, but she wouldn't come back to demean herself at a lower one, whereas in my case, the job was the important thing. The only thing that was important about salary for me in my life was whether I could pay the rent and feed myself.

DeVorkin: Those are the primary things. That must have been depressing.

Hoffleit: Yes. It annoys you, when you know you're being taken advantage of, but if you don't allow yourself to be taken advantage of, you lose the only thing you want in life: which I lost anyway because of that skunk Menzel.

DeVorkin: That was when Donald Menzel took over.

Hoffleit: Yes.

DeVorkin: Right. Let's stay in the early thirties and talk about your first research and your continuing contacts with Shapley, with the staff.

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Hoffleit: The second time I wanted to take a course with Fisher, I said, "I want to take another course, but this time, I want to pick my own topic." That was agreeable with him, and that's how I happened to start the work leading to my paper on the meteor light curves. When I had that all written, I put it on Dr. Shapley's desk or table where you put things for him outside his office. And a day or two later, he called

me up to his office. He looked scowling at me, “What’s this?” I was then no longer a graduate student. I said, “Oh, that’s the paper I’ve been working on when I’ve been coming back evenings,” because you see I didn’t have to work evenings to make up time any more. I was coming back to write up the paper that resulted from my having taken the course I wanted from Dr. Fisher. In other words, he gave me a grade but that’s about all, and counseled me a bit. That was real good fun. That’s what I’d been doing evenings.

DeVorkin: You’d been doing this on your own time?

Hoffleit: Yes.

DeVorkin: And this was your paper, “A Study of Meteorite Light Curves.”

Hoffleit: Right, so Shapley knew what I was up to. I think Opik was around that year too, but I wasn’t studying with him then because I’d gotten my credits for the MA and that was it. I was going to stop there. That was the end of my abilities. But Shapley gave Opik this paper, and Opik gave him a marvelous review of it. And so on the basis of Opik’s opinions he sent it in to the National Academy. Then after that we had the IAU meeting in Cambridge, and after the IAU meeting I got a ruptured appendix, and everybody thought I was a goner, but bad pennies always come back. So when I was sufficiently recovered from that the following fall, I got hailed into Shapley’s office again, in the middle of October.

DeVorkin: That was 1933?

Hoffleit: ‘33. And Shapley was sitting at the desk, only his expression was a little different. He had a silly giggle on his face and said: “Sit down, won’t you?” And Bart Bok was there, sitting up very formal and straight, very very serious looking, in contrast to Shapley with this silly grin on his face. Shapley said, “We’ve been just talking, why don’t you continue for your PhD?” Gulp. “I don’t think I’d ever pass THOSE exams.” He says, “Oh, you go back down to your office and think it over for a couple of days.” So ten minutes later, B.J. Bok traipses into my small office, which is about as big as from here to there to there—

DeVorkin: About 6 feet by ten feet?

Hoffleit: Something like that. It was about as long as this and maybe as wide as from that edge of the table to here. And I had a spare chair next to my desk, and Bart sits down on that chair, and this is what he does. “Dorrit—”

DeVorkin:—pounds on the table—

Hoffleit: All the papers fly up, “If God recommends that you DO something, it is your DUTY to DO IT!” (laughter)

DeVorkin: So he hasn’t changed.

Hoffleit: I think that was the happiest time of my life.

DeVorkin: Marvelous.

Hoffleit: I was scared to death because I really didn't think I could do it. But I don't think it ever would have happened except for that meteor paper.

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DeVorkin: As your bibliography shows. And you were doing some spectra too, the spectrum of Eta Carinae "Correlation between light variations and variations in radial velocity in Cepheid Variables," with L.V. Robinson. So you were working with other people too and you were getting interested in spectroscopy.

Hoffleit: Oh yes. I was interested in everything. That's part of the trouble of my career. I'm not going to be remembered in the future for my astronomy, because I dabbled a little in this and a little in that. If I'd stuck like Helen Hogg to one particular field and specialized in it, I probably would have done a good job in it, but I did too many little jobs.

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Section IV: Hoffleit and the Administrators

Hoffleit: Yes. Errors blurred things. Anyway, that program evidently gave more problems than most of the other instruments did. I wrote Shapley saying I'd be delighted to go down there and take my own plates. I never got any answer from him, so the next time I went on my tour of duty, I went to him and said, "I really meant it, that I'd like to go to South Africa and try taking these plates myself." He said, "Oh, that's impossible." Again, discrimination against women in the worst sense. Shapley said, "If you went down there to take those plates yourself, you'd disrupt the entire social life of the Parasses." I said, "Me?" He said, "Yes. They have only one guest bedroom and you'd have to sleep there." Then he said, "And besides, the natives wouldn't approve of a woman working all night!"

DeVorkin: Really.

Hoffleit: Of course, after all of this happened, why, wives at Harvard— graduate students marrying each other, like Elske Smith—got to go and observe. That was all right. But for a single person to go down was all wrong. That made me very unhappy, because that was literally what I went back to Harvard for, to work on these spectral classification problems.

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DeVorkin: What did he expect you to do?

Hoffleit: Well, I'll tell you the reason he [the next Observatory Director, Donald Menzel] was against me so much. Even if this hadn't happened, I still would have been miserable, if he hadn't been mad at me, I would inevitably have gotten mad at him when the invaluable plate collection was being demolished. That was more than I could take. Then he forced me to take charge of sending old record books to

Widener Library because there was ostensibly no room for them at the Harvard Observatory, even though he was building a new building—things like that, making me do lots of dirty work. But the reason Menzel disliked me antedates this. On one occasion when I went to White Sands Proving Ground, he was down there too. Both of us were surprised to see each other there. We had lunch together. I knew Menzel never thought much of me because I'm poor in theoretical astrophysics and that's all that interested him. This was before I was back full time at Harvard. I was still toying around with what I really would do in the future. Menzel started commiserating me on how awful it would be to return to Harvard with the low salary I would be getting. It really wasn't right, and so on. Then, as though he had a brainstorm, he remarked that he had some large government funds, and if I would work for him on sunspots, then I would get a decent salary.

I was sincerely flattered and said, "Well, I'll have to think this over. I couldn't say yes or no right away, but I certainly thank you for thinking of me that way." Then when I went back to Harvard, after I'd thought it over, I said that I regretted that I felt that I must not accept his offer at this time. I had made a great point about leaving a job that was better paid at Aberdeen, because I was going back to Harvard to finish work that I had started before the war, and that that was very dear to my heart. But if I would finish that work and bring it to a good stopping place, then later I would probably be very glad to transfer into his department; but that it would be morally wrong for me to accept at that particular time. Well, he never forgave me for that. He is the big shot, and if I turned him down, well, he was jolly well going to turn me down, and he really did. He was as nasty about things for one thing, you aren't supposed to send papers to publishers without going through the right channels, through the director. I had a nice paper on the new planetary nebulae that I'd found on the ADH plates. Shapley had recommended that it go to a certain publication, but I thought, "Well, since Shapley wasn't director any more, I can't send it, it has to go over Menzel's signature." So he batted down the paper. This was not anything that he wanted published. And he had some nasty remark about everything that I did. You read there what he said to me about, "If I were as well heeled as Mrs. Van Vleck—." What he meant was, if I had money like Barbara Bell, I'd be welcome, but he didn't want any paupers around there who were just proud paupers, who were going to work their heads off for the glory of the institution.

For further reading:

Biographies:

- Jeremy Pearce, "E. Dorrit Hoffleit, Scientist, Dies at 100," *New York Times* (New York, NY), April 23, 2007.