

STATUS

NEWSLETTER OF THE COMMITTEE ON THE STATUS OF WOMEN IN ASTRONOMY
JUNE 1987

Published by the Committee on the Status of Women of the American Astronomical Society

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CSWA CHAIRPERSON'S CORNER: SOME THOUGHTS AND QUESTIONS

by Lee Anne Willson, Iowa State University

(This column deals with some issues that have been discussed by the CSWA, as well as some questions likely to be discussed in the future.)

The CSWA is collaborating with the Committee on Manpower and Employment on several projects. The panel discussion at the Austin meeting, "Employment: The Employer's Perspective," was the first cooperative production, with future panels on employment and opportunity being planned for subsequent AAS meetings.

The Executive Office of the AAS is planning a major membership survey, and the CSWA and CME are working to ensure that the questions asked allow for meaningful analysis relevant to employment and equal opportunity. As is so often the case, the likelihood of getting useful results depends very much on how one formulates the questions. I am hoping that this column will stimulate some suggestions from the readers.

Some statistics and some questions concerning the status of women in astronomy:

At the time of the first survey, conducted by the "Working Group on the Status of Women in Astronomy" in 1972, the percentage of AAS membership that was female was 8%, down from the nearly 15% that held steady from the twenties into the late fifties. From the twenties until 1972, the number of women in astronomy increased steadily; after Sputnik, however, the number of AAS members rose sharply, and the percentage of women dropped.

In the late sixties and early seventies, "affirmative action" policies went into effect, nepotism rules banning the hiring of both members of a professional couple were abolished (or went underground) in universities and government facilities, and open advertising of positions became the rule rather than the exception. Federal money was spent on "mentor" and "role model" programs aimed at attracting women into professional and scientific careers. Women scientists were featured in "high visibility" career brochures. Young women were even told that as professional scientists they would "have an advantage over the men, due to affirmative action".

After 15 years of Affirmative Action and recruitment of women into science, what has been gained? According to data obtained from B. Porter at the statistical office of the APS, there have been about 100 Ph.D. recipients in astronomy per year since the mid-seventies. In the late seventies, about 10% of those were women; in 81-82 this percentage rose to about 18%, then dipped again to 10%. The peak in 1981-82 is at best marginally significant. The percentage of women in the "labor force" - i.e., employed as astronomers - is about the same - 8-9%.

Why hasn't there been a greater change? Did we already have "all" the potentially capable and interested women going into astronomy? Have our recruitment efforts been somehow badly planned and executed? Or, have Affirmative Action programs targeted those women who have the aptitude and skills to do astronomy and encouraged them to enter other fields?

During the seventies, after the astronomy job market tightened severely, an "anti-PR" campaign was waged informally to discourage all students from going into astronomy, and this may have had an effect on the total numbers. However if the post-Sputnik surge in interest in astronomy decreased

the percentage of women, shouldn't the post-crash decrease in Ph.D. production have produced a complementary increase?

Perhaps women who in the past went into astronomy because it was "friendlier" than physics now feel free to go into physics. The percentage of women among Ph.D. recipients in physics has shown a steady rise to a current 8-9%, according to the APS. However, for 1985-86, to cite only one year, the entire increase in the number and percentage of women in physics could be accounted for by foreign students; the number of US women obtaining Ph.D.s actually slightly decreased. Since there are so many more physicists than astronomers, if all US women in astronomy switched to physics, the effect on the percentages would be slight. It is therefore difficult to confirm or eliminate the possibility that this factor plays a role in the astronomy statistics.

As we heard from R. Nicholson of the NSF at the AAS meeting in Austin, the US Government, looking ahead to the 1990s and beyond, has realized that unless a substantial number of US minority and women students can be trained in science, there will be a shortage of scientists for work requiring US citizenship. Present efforts to increase the participation of women in astronomy do not seem to be very effective. What questions can we ask of women already in astronomy that will help us to understand and maybe to change this?

Another question relating to women, astronomy and employment: "Why don't more women apply for the positions we advertise?"

I have heard this question from several department chairpersons and wondered about it myself when we advertised a position. For a time, I assumed that we were attracting few women applicants because Iowa State University is located in a relatively small town, where opportunities for spouses are limited. Because a larger percentage of women than men in astronomy have professional spouses, it would make sense if two-career families passed us by. However, I have since heard this question from people in opportunity-rich areas like Boston/Cambridge and Baltimore/Washington, where I would expect those couples who don't apply to ISU might be applying.

A second explanation was offered to me recently, in a questioning tone, by a member of a department that had just successfully completed a search and for a faculty position. They had actively sought women applicants, in particular telephoning women faculty members at other institutions for recommendations. They were rewarded by a relatively large number of female applicants, and one or two of these landed among their top choices. After the process was concluded and they had made their selection, they wondered if young women today are so sought after that they don't even apply to places that don't initiate communication with them. My own experience and my experience with graduate students, post-docs and friends does not support this idea, but the statistics of my personal sample are admittedly limited. Have I been naive in assuming that young professionals, both male and female, make use of the job register and advertisements in Physics Today in choosing where to apply? Or do young women "wait to be asked," while young men actively seek employment?

It is also possible that women tend to remain permanently in their first position, while men move around; if men average four positions during their careers and women two, that would produce the illusion that there are twice as many men in the labor force. Staying in the same place could be the result of several factors: (1) perhaps women are less ambitious or aggressive, (2) almost certainly the difficulties of finding new positions for spouses limit more women than men, and (3) possibly in order to be hired women must be more qualified, and therefore they are more likely to achieve tenure in their first positions.

Clearly in order to answer this question, and to make the AAS job services effective for both men and women, we need to find out how astronomers, both male and female, are making their career choices and what strategies they are following to locate and secure appropriate employment.

PICTURES, POSTERS, PORNOGRAPHY, AND PROGRESS

A Report by Beverly Smith - University of Massachusetts, Amherst

Many of you read in the December 1987 AAS Newsletter the letter from members of the Five College Astronomy Department, regarding pornography and "pin-up" posters of women at astronomical observatories. In it we said that posters and magazines that portray demeaning or degrading images of women in the public work area-including offices, laboratories, and telescopes-are a form of sexual harassment and are a violation of Title VII of the Civil Rights Act of 1964. A person's own office is not his/her home; co-workers who may need to consult professionally with another person in that office may be intimidated or offended by publically displayed materials. If so, such a person is deprived of his/her right to a comfortable, non-hostile working environment.

We circulated our letter within our department and easily obtained forty-four signatures. A large number of men in our department were very supportive and anxious to help, and several of them admitted that they also felt uncomfortable with such materials. We have had positive responses to our published letter, and to our letters of complaint to specific observatories and their directors. In more than one case, memos were circulated that stated public display of degrading images of women were unacceptable. I have been informed by recent visitors to those places that the pin-ups (which remained up in spite of long-standing policies against them) have been taken down. A letter to the Committee on the Status of Women in Physics also brought a positive response. That group has agreed to draft a policy for physics research centers and to present it to the Council of the American Physical Society.

Not all response, however, has been positive. Some men have justified their posters by pointing to the calendars and posters of men that some women have hung up. I have heard men say, with a smile, "I am not offended by them." That's not surprising. The situations are very different. In the first place, men do not, in general, feel physically threatened or intimidated by women. In the second place, the pictures of men are not generally portraying them as vulnerable, weak, or fragile; the men are not pictured in subordinate roles, as women almost always are. Third, most women still perceive that men have more power than they do in our society. Men outnumber women in astronomy, and many women feel that being outnumbered is being overpowered. Pictures that portray women as objects of men's desires or subject to men's demands only serve to reinforce this image of powerlessness and helplessness.

Finally, many women have countered by hanging up pictures of men. I feel that we cannot ask men to remove their posters and calendars if we do not remove our own. The "pin-up" posters of men are just as insulting, demeaning, and sexist as the images of women we criticize. Whether or not men are as offended by them as we are of theirs, the pin-ups and posters simply do not belong in professional workplaces.

Editor's Response:

Dear Bev,

The issue of pornographic and degrading pictures of women is a delicate one, and if it is a problem where *you* find yourself, I think it is very important to choose your words and strategies carefully. If you begin expecting heated and painful adversarial confrontations, that is what you are probably going to get. If you expect to achieve cooperation and respect, you might get that.

As a feminist, I am aware of the ways in which women have long been oppressed. But as a feminist I am also concerned with not perpetuating the oppression, even if I try to rename it "retributive justice to the oppressors." Oppression has come to us through systems within our culture; the oppressor is as much a victim of its dehumanizing effects as the intended victim.

Our first job, as I see it, is to state the situation of oppression and exclusion in terms that are absent of blame. With the issues of materials women feel are pornographic and degrading, I think that some words of explanation may be needed. As you wisely

point out, men and women respond to such materials differently. Complaints by women are often ignored or dismissed, I think, because a gap in our understanding about these different responses.

Speaking out of my own experience, I find that, when I suddenly come upon pictures of nude or scantily clad women in seductive poses, on walls or in buildings, where I did not expect to find such pictures, I am confused about where I am, what I am doing there, and how safe I am there. I begin to wonder what the rules are that govern the behaviors of the people in this place. I no longer feel that it is reasonable to expect to be treated with respect. I wonder if I need to protect myself from-well, what? Part of my anxiety is that I don't *know* the object, but I *feel* that I may need protection from something. The ground underneath me seems to be shifting, and what appeared once to be a safe working environment suddenly isn't, anymore.

And so I begin to think. Oppression is whatever interferes with the environment in which men and women can work together with cooperation and mutual respect. And mutual oppression occurs when the men and women associated with an institution are prevented from working together for the attainment of the goals which are the purpose of the institution in the first place. Oppression hurts us as people and hurts our institutions. It is important for us to keep working together as a community of astronomers and supporters, to find solutions for all the things that simply get in our way.

Report on the CSW A Session at the 19th Division of Planetary Sciences Meeting, Pasadena, CA, November 9, 1987

by Nadine G. Barlow, Session Chair

A special session of the Committee on the Status of Women in Astronomy was held on the evening of November 9, 1987, during the American Astronomical Society's 19th Division 6f Planetary Sciences (DPS) meeting, to acquaint DPS members with the existence and goals of the CSWA. Approximately 20 people showed up for the hour-long session, which consisted of a brief presentation on the past, present, and future activities and goals of CSWA, followed by a lively discussion of the issues of concern to DPS members. In addition a short questionnaire was distributed to the attendees, to solicit their views and suggestions on a number of topics. Approximately half of these questionnaires were completed and returned.

Several topics were raised in discussion. In particular, the issue of education, both at the junior/high school and college levels, was discussed at length. Most attendees felt that high-school counselors and science teachers need further encouragement to discuss science careers with female students and to urge girls showing a strong interest in science and math to consider pursuing their interests professionally. Many of the women attending the session indicated that their high-school counselors had tried to dissuade them from a career in science. Women scientists can help by being role models, which means increasing visibility by (1) contacting schools and offering to speak to groups about science or careers in science, (2) targeting newsletters and magazines for teachers and students to encourage them to include interviews or quotations from female as well as male scientists, (3) becoming judges for science fair competitions, and (4) organizing and/or participating in career day activities for girls, which could include panel discussions, hands-on workshops, and speeches by prominent women scientists. Another idea suggested was for NASA or some similar agency to support a summer intern program in which high-school girls could work as scientists at a university or a NASA research center. NASA/Ames Research Center has a program for high school students that has been viewed positively by both participants and advisors.

In terms of college education, particularly graduate school, the consensus was that advisors' attitudes toward their female graduate students vary widely. Some said they had trouble being taken seriously by their advisors, whereas others had no problems. Some attendees reported cases where female faculty members felt obligated to take on the female graduate students - such situations should be avoided as they are often detrimental to both parties. It was suggested that advisors help both their male and female graduate students by including them in writing and submitting funding

proposals, so that the students, prior to their graduation, gain some experience in submitting proposals. Private get-togethers for the women scientists within a particular institution (such as luncheons or dinners) to talk and share their experiences with one another was viewed as being beneficial but often not practical in small departments or in schools where the number of women scientists is severely limited.

Funding was another topic which received considerable attention during the session. It was suggested that a study be undertaken to compare the funding levels for women (who are generally more recent arrivals in the scientific work force) with those for men at the same career stage, to determine if funding levels are equivalent. For recent graduates the best way to learn how to submit a successful proposal appears to be by reviewing other scientists' proposals. Those who have succeeded in obtaining funding said that information received from the funding agencies, about how to prepare a successful proposal, was not very useful. The NSF special grants for women were seen as a good start but they do not last long enough for any real benefit to be gained from them. However, all agreed that if these special grants were to be extended, women would run the risk of alienating their male counterparts by being seen as getting special privileges.

The issue of two career families was discussed very briefly during the session, even though questionnaire results indicate it is a major topic of concern among DPS members. It was noted during the session that the husband in two-career families is generally the elder and thus usually has had more time to establish his career. Therefore, when decisions such as moving for promotions are to be made, the effect is usually greater on the man's career. When possible, the situation where each spouse works at a nearby but separate institution appears to be desirable, so that the fears of nepotism (either real or imagined) are quelled. All agreed that better solutions need to be found to the problems facing two-career families.

Ten of the questionnaires distributed during and after the session were completed and returned to the session chair. Eight of the ten respondents were female; six were graduate students, one was a post-doc, and three were faculty members or staff scientists. None had previously attended a CSWA-sponsored activity, and only three had ever heard of the CSWA prior to the meeting. Of those three, two stated they were aware of CSWA's existence but had no idea of its tasks. All ten respondents felt that CSWA needs to be more visible in the AAS and its divisions. All stated they would attend CSWA-sponsored panel discussions or invited talks during future DPS meetings, and three expressed interest in participating in a panel discussion. Respondents ranked two-career families and job equality as the most important issues facing planetary scientists, with science education at all levels a close second. Other topics viewed as warranting closer consideration by CSWA were the promotion of public lectures by women scientists, instituting programs to encourage young women's interest in science, encouraging DPS to provide child care during its meetings, and working to remove gender-specific pronouns from conferences.

The major concern expressed by all attendees during the DPS session was that CSWA not be viewed as a "sister" organization - any perceived discriminations being pursued must be borne out by facts. Unfortunately, the DPS does not maintain statistics on the percentage of female members, so at this time it is difficult to determine if the percentage of invited speakers, sessions chairs, etc. is representative of the female DPS membership as a whole. An efficient way of determining the percentage of female members in both DPS and in the AAS as a whole needs to be found, perhaps by including an optional gender box that could be checked on the membership renewal notices.

As session chair, I would like to thank all the people who attended and participated in the discussion. In addition I thank Judy Schultz for providing copies of STATUS for distribution and Deidre Hunter for providing material used in the preparation of the introductory comments during the session. Special thanks are due to Linda French and Lucy Ann McFadden for their assistance in preparing and publicizing the session and for the many stimulating conversations I have had with

both on the topics included herein.

A REPORT ON THE "ASTRONOMER FOR A DAY" MEETING and ASTRONOMERS AND PRE-COLLEGE EDUCATION

by Mary Kay Hemenway University of Texas, Austin

"Astronomer for a Day"

With AAS Education Officer Charles Tolbert and Pam Hawkins, I coordinated a special session for secondary school teachers, the Astronomer for a Day Program, which was part of the January Meeting of the AAS in Austin in January. We began to plan for this about two years ago. Our goals were (1) to provide a model that could be followed at any subsequent AAS meeting, regardless of the size of the host institution, and (2) to give teachers not only current information on astronomy, but also the "flavor" of a professional meeting and some understanding of what people do when they "do astronomy."

We asked the participants to come on Sunday to receive background information about astronomy from Charles Tolbert, James Sweitzer, and me and to learn about resources in astronomy from Richard Fienberg and Andy Fraknoi. On Monday they attended some of the general sessions, the luncheon, and talks that which were especially lengthened for them by the presenters, Rick Binzel, Ana Nash, and Ken Brecher.

Through our selection process we obtained a group of teachers already interested in science. The AAS provided funds for the participants' substitutes in their classrooms back home, and offered them free registration at the meeting. The participants themselves paid for their meals, travel, and lodging. We expected to attract only teachers within an easy commuting radius of Austin, but we had participants from most of the state of Texas, including Fort Worth, Lubbock, Victoria, San Antonio, and many small towns.

The reaction of the participants was exciting to see. They were warmly welcomed informally by AAS members and formally by the AAS officers. Most of the teachers seemed surprised to find out that astronomers were "approachable" and happy to talk with them about their work. They enjoyed seeing that science meetings are more than just listening to papers: they watched astronomers defend their pet theories, sometimes in heated fashion, and saw small groups of astronomers in eager conversation, huddled over data, or in animated discussion in front of poster papers. The teachers also enjoyed meeting each other; we should have scheduled time for them to exchange information among themselves. We think the teachers gained a new appreciation of astronomy; one of them wrote that it was the most beneficial training session he had had in several years. The initial evaluations, from both the participants and the organizers, were so positive that a similar session has been planned for the Kansas City meeting.

I encourage you to be involved in future "Astronomer for a Day Programs." "What can I do?" you ask? First, offer to give a talk on your research (let Charles Tolbert or me know of your willingness). Second, help the teachers feel welcome by talking with them informally about your areas of interest in astronomy.

It is very important that women astronomers be involved in this program. Of those teachers who applied to attend the Austin meeting, we accepted 35 women and 23 men; these numbers represent a typical balance of female to male science teachers. Some of the women teachers asked us about the low numbers of women astronomers in attendance at the meeting, but they didn't seem surprised to find women in the minority. In an attempt to emphasize the presence of women in astronomy, we arranged for the teachers to attend the invited talk by Margaret Geller. Both male and female teachers need to see women scientists; when you change the attitude of a secondary teacher, you affect about 150-200 students per year. Although some girls are willing to challenge the stereotype of "Girls aren't good in science," most of them believe it or just don't wish to go against the crowd. When women scientists serve as a role model for teachers, they help to offer more opportunities in

science to all students.

Astronomers and Pre-College Education

Like many other professionals, astronomers often decry the science education offered children today. Possibly their own children have come home from school with misconceptions about science, or (worse) with their heads full only of insignificant details and not exciting concepts. Maybe they encounter college freshmen who confuse astronomy and astrology. Maybe they are assigned to teach classes of 150 students who "hate science." What can we do about these problems?

Elementary school teachers, in particular, often have had poor preparation for science teaching. If their only exposure to a college science course was biology, they may feel that the best way to learn any science is to memorize lots of details. In addition, many of them suffer math anxiety. As preparation for teaching at the secondary level (grades 7-12), science teachers usually major in science in college, but may be teaching outside their field. For example, a biology major whose only experience in physics and chemistry was two chemistry classes and two physical science classes, was asked to teach chemistry and physics. (The- worst example I've heard is that of a home economics teacher being asked to teach physics.) The situation in the physical sciences is particularly serious, since very few physics or astronomy majors are interested in secondary school teaching. Older teachers are experiencing "burn-out" at a time when the number of good younger teachers entering the profession is decreasing. Perhaps a consequence of this is the report in a recent issue of *Newsweek* that 30% of the 23,000 high schools in our country offer no physics course, and that only 17% of high school students study physics.

There are, however, many good teachers in the classroom, teachers who are interested in astronomy. They would perhaps benefit from a gift subscription to *The Universe in the Classroom*, published by ASP, 1290 24th Ave, San Francisco, CA 94122.

In addition, here are some suggestions for ways you might increase interest and knowledge about astronomy in pre-college students. I've arranged them in order of "difficulty" and divided them into two categories.

At the Secondary Level

1. Offer your help in judging a science fair. These events occur only once a year per school (small time commitment), and you are usually given good guidelines to follow. Science Fairs are good places for interacting with individuals or small groups, and your encouragement there can be a turning point in a student's attitude toward science.
2. Give a talk to a high school class or science club about your research, or any other scientific topic of your choice.
3. Allow a group of students to tour your observatory or lab.
4. Tutor students in grades 7 and 8 for the National Math Counts contest. In our town, the Society of Women Engineers has adopted this as their outreach project.
5. Allow a high school student to be your intern for a semester. You may succeed in getting a pile of old data, reduced, and the student will be exposed to science on a level very different from what is presented in textbooks. Some schools offer high school credit to their students for such experiences.
6. Offer to help a science fair participant. This is usually a one-year project that can be very time-consuming. Top students are looking for mentors. If your student is successful, submit the project to the Bok awards committee.
7. All teachers must take a certain number of in-service hours each year. (Often they learn mostly about "Keeping Order in the Classroom" or "How to Make Bulletin Boards.") Offer to teach an in-service physics/astronomy class. This is rather time-consuming the first time you do it, as you prepare your 6-7 hour presentation. Teachers will want updated information

about your subject, and suggestions on how to apply (back in their own classrooms) what they have learned in your class. They especially welcome inexpensive lab activities which don't take much preparation on their part.

At the Elementary School Level

1. Some elementary schools also have science fairs; be a judge.
2. Give a talk to an elementary school class. The most popular topic is the solar system. Show slides if possible. Kids, especially the younger ones, come up with wonderfully inventive questions, so expect to enjoy yourself.
3. Help a Girl Scout or Camp Fire troop with its science-related badges. (Phone your local council to volunteer.)
4. Start a chapter of the Young Astronaut Club.
5. At the elementary level, too, teacher workshops are very useful. The amount of ignorance about astronomy is high, but the enthusiasm is usually *also* high. One of the best references I've found (to help you plan your presentation and to arrange for appropriate activities) is "*Astronomy Adventures, Ranger Rick's Naturescope*," Vol 2, No.2. It is published by and copies are probably available from the National Wildlife Federation, 1412 16th Street N.W., Washington, DC 20036.

At both levels:

Make your views about the importance of science and math education known to your local school board. You might volunteer to serve on a curriculum advisory committee, or parents' advisory committee; you could even run for election and maybe even change your school district's attitude toward and your schools' programs in science.

May-December Romance? - or Sexual Exploitation?

by Susan Simkin, Michigan State University

This issue's column features two amazingly similar letters. The first is from a young male astronomer, the second from a woman in her thirties.

Dear Andromeda:

I think I'm pretty sensitive to women's gripes, but I feel things are going too far when women, just to make a point, set out to use men the way they *think* men use women. A few years ago, when I was an undergraduate, there was a moderately good-looking female [science] prof in her mid-30's - a little plump, but nice - who used to flirt like mad with the better-looking guys in her advanced courses. One of them was a good friend of mine who really didn't know much about women because he'd spent his adolescence being a genius. He didn't even know he was good looking. This prof really impressed him. She let him help with her research-and since he was a computer whiz, he really did a lot of it himself-and he followed her around like a puppy. In his senior year, things got pretty heavy and I guess or they started sleeping together. Anyhow, in the spring, she just walked out! I guess she had a guy out west and took the semester off to be with him. I don't really *know* what she said to my friend, but he stopped studying and never made it to graduation. He tried to kill himself but flubbed it up, and last I heard he was off in a big city, screwing around like mad and being generally wasted. Talk about destroying talent! The stupid bitch was back the next year, evidently playing the same game with a new bunch of good-looking undergrads.

I think this is really carrying role-reversal too far! It's bad enough watching graying, paunchy, old male profs get moon-struck over some of the best undergraduate women around, but this woman acted in cold blood and doesn't seem to give a damn about the mess she made!

(signed:) Really Mad!

Dear Andromeda:

Here's one for your column. You know how middle-aged academic males are always priding themselves on their masculinity because they turn on' the eighteen-year-old co-eds, while *we* know that those co-eds are either angling for a higher grade or haven't got over their preschool daddy-fixations? Well, middle-aged academic males aren't the only ones who can turn on eighteen-year-olds. It can even happen to women!

I was just a little slow to catch on when it happened to me. My husband and I had split for job reasons, but we had been totally turned off by each other for a year or more before the move, so I was really ripe for action (as they put it in the porn mags). Since I teach large numbers of Astronomy 1 students, I see a lot of real hunks in my class, and just after my husband left, I noticed that this 5'11", reddish-blond junior (a "poet" with really great shoulders) was spending a lot of time in my office, getting help with his labs. He was really sweet - the kind of guy who would never look at me when I was 20! - polite, considerate, helpful, and sexy! I admit I contrived to accidentally bump into him a couple of times outside of class, but *he* asked me out for a sundae (this 1950's revival is cute). And things just led on from there. Actually, he was about as awkward in bed as my husband had been at that age-but a lot better than nothing, and I thought that it would be nice just to have uncomplicated sex with someone who didn't have the ego-sex hangups that my generation has. I felt bad when I had to give him a C in my class, but I really couldn't give him a higher grade.

The problem is, he has become a nuisance. *HE* was the one who started flirting! I thought he was mature and knew what he was doing, but he is acting like a three-year-old, showing signs of dependency and depression and of blaming me. Fortunately, I go on sabbatical next year, and he should cool off while I'm away. I'm not sure this May-December stuff is worth it.

(signed:) Love- Wary

The letters show interesting symmetries. Both women involved were at that "dangerous" age (32 to 45), and both men appear to be a type that I recognize from my own teaching, but only since my own children have passed out of adolescence have I begun to understand. The first writer is correct: they are the male counterparts of the co-eds who "turn on" to older men. The behavior is the same for both sexes. (If you don't believe it, just interchange male and female in the letters above and you will see how boringly old hat they both sound.) When you've raised kids of your own, it's not hard to recognize the gestures and tone of voice that go with the five-year-old being "Daddy's girl" or "Mamma's little man." AND IT IS CHARMING. The *apparent* sophistication is part of the act.

Sometimes such relationships are constructive for all concerned. But these two letters suggest that in most cases, the December actor feels bewildered and over-burdened, while the May actor feels rejected, badly used, and cheated. What makes the thing go (clearly) is not the attractiveness of the older person, but his/her "power" and the younger person's need for power, which he/she satisfies by forming a relationship with someone powerful. We are certainly accustomed to seeing women define themselves as strong if they are married to powerful men, and to watching women pretend to be weak as part of their strategy for "getting" the powerful man in the first place. This is the stuff of soap operas, paperback romances, and the lessons our mothers (our culture) taught us, and there are studies that document this.

These two letters indicate that it is not only women who are turned on by power. In other words, this is really a human problem, and (I believe) it has an equal-opportunity (M/F) solution (in theory

at least). A good empirical formula seems to be this: If A_o is the age of the older person and A_y that of the younger, then when $(A_o - A_y)/A_y > 0.25$, either drop it, or recognize that the *older* player either has to act as nurturing parent or you both get stuck with a big mess.

This is Simkin's Pairing Principal (SPP). I'm not arguing against all relationships where $A_o > 1.25A_y$, but the only ones I know that haven't been destructive are where A_o is willing to accept a lot of extra responsibility. Since this is usually just the opposite of what A_o is looking for, in *theory at least*, an intelligent application of the SPP rule should lead to vastly improved student-prof relationships.

CAN THE CAMPUS CLIMATE FOR WOMEN BE IMPROVED?

by Roberta M. Humphreys Professor of Astronomy University of Minnesota

As many of us are already very much aware, women in the sciences and technical fields are frequently isolated. We are in fields that are historically dominated (>90%) by men and we are often the only women in our departments. As a result, our professional environment is often unsupportive and even at times openly hostile.

In the Institute of Technology (physical sciences and engineering) at the University of Minnesota this year there were several incidents that reflected an atmosphere of discrimination, sexism and hostility toward women. As a consequence, the senior women faculty in I.T. formed an informal ad hoc group. Our discussions revealed that we shared many experiences.

We decided it was necessary for us to take positive and visible action to correct the sexist atmosphere which had become overt in some parts of our college. While acknowledging that we must continue to press for an end to discrimination in hiring, promotion, and salaries, we become more concerned than ever about our working environment. We prepared a list of specific requests and recommendations for our Dean and the Provost of our University. Following a lengthy and very positive discussion with the Provost, he agreed to implement almost all of our recommendations. They will not end sexism, but they are a first step. I wanted to share them with other women scientists because some of them may be applicable to your own university or college. (Those recommendations unique to the situation at Minnesota I have not included.)

I highly recommend getting to know other women faculty throughout your university. My own recent interaction with my female colleagues has been a most positive and supportive experience.

Recommendations

1) We initially requested hiring a woman to serve as a special EEO and Affirmative Action Officer for our college. Our Dean responded by establishing such a position for a new Associate Dean. We recommended that, in addition to the usual duties of an EEO officer, the new Associate Dean monitor the treatment of women and minorities and their progress. This will include considerations of salaries, teaching loads, access to students, the distribution of responsibilities, and visibility within their departments in I.T. She should actively solicit input from women faculty, students, and staff to assess the problem areas. She should work with the Dean of I.T. and the faculty to take remedial steps to improve the environment for women.

2) We requested the Provost to issue a public statement affirming the University policy on the status of women, to read something like: "In the recognition that women make an important contribution to the intellectual goals of the University, and in order that women be granted the opportunity to participate fully in the intellectual and professional activities of the University, every effort will be made by the Administration to ensure that women remain free from harassment or discrimination."

We have also strongly urged our Dean to accompany the Provost's statement with a letter to the faculty of I.T., explaining in very clear terms that the Dean's office will not tolerate discrimination or harassment; that the creation of a positive work environment for women is a high priority of the

Dean's office; and that both positive and negative contributions to the work environment for women be taken into consideration in all decisions on hiring, promotion, salary, and assignment to administrative tasks.

3) We requested that an Assistant to the Director of the EEO and Affirmative-Action Office be hired immediately to devise a plan to improve the situation of women faculty throughout the Twin Cities campus, and to find solutions to existing problems. Among matters to be addressed will be sexual harassment; nonprofessional behavior or attitudes by male administrators or faculty; discrimination (with or without intent) in hiring and promotion; inequities in salaries, and in the assignment of workloads, space, and facilities; problems women experience in obtaining support for research and in recruiting students; and the isolation of many women faculty. The plan for solving these many problems - ranging from lack of collegiality to overt hostility to discrimination - will be prepared with the assistance of the Director of the EEO office, in consultation with women faculty members. The plan shall include a specific policy statement and grievance procedure similar to that now in place for cases of sexual harassment. The plan will propose a mechanism that will include use of reprimands or penalties, to insure implementation of resolutions.

4) We recommended holding a retreat this for administrators and department heads in I.T. to educate them on sexism, discrimination and harassment. They would receive information on how to counter the chilly climate for women in I.T. and in their departments and how to recognize sexism; they would also receive some education in dealing with more subtle aspects of discrimination and harassment. A professional psychologist would be hired to conduct the retreat, and we recommended that similar retreats be held in each college of the University.

5) We asked that an Advisory Committee on Women at the University be appointed during the current academic year. The Committee would advise the Provost, the President and the Regents on matters of concern to women. Further, it would have power to recommend rewards for departments that have successfully implemented affirmative action, and to recommend disincentives for departments that have failed or where harassment, discrimination or intimidation of women faculty has occurred.

6) We recommended a plan to appoint women to high-level administrative posts in the University and to include women in prestigious and decision-making positions.

The Provost of an University has agreed to implement all of the above recommendations.

Unfortunately, at Minnesota it took an extreme act of harassment against a woman faculty member to get the attention of our administration. Now that we have their attention, however, we intend to keep it.

REPORT ON THE PANEL DISCUSSION, "JOBS AND HIRING: THE EMPLOYER'S PERSPECTIVE"

sponsored jointly by the CSWA and the Committee on Manpower and Employment Austin, Texas, Monday night, January 11, 1988 by Judy Schultz

What follows is a summary free of editorial comments except at the very end (and there the comments are not mine). I had intended to focus on the parts of the panel discussion that were most relevant to two-career couples, but I received requests for information about everything, so what follows is a paraphrase. Lee Anne Willson served as moderator and conducted the formal questioning. The Panel was comprised of:

Neta Bahcall, Space Telescope Science Institute

Sidney Wolff, NOAO, Kitt Peak

Craig Wheeler, Astronomy Department Chairperson, U of Texas at Austin

Doug Richstone, Astronomy Department Chairperson, U of Michigan

Gerald Stokes, Battelle Pacific Northwest Laboratories

From time to time, the audience was invited to comment or ask questions.

I. How are hiring decisions made? Where do they get made? Where are you in this process?

Stokes said that at Battelle, as in most industries, there are three kinds of hiring decisions. First, there are specific slots that are filled; second, there is a kind of "strategic hiring," in which the person hired is expected to make a long-term contribution; and finally there is "high-risk hiring" of exceptional individuals. With input from staff members and senior scientists, Stokes makes the hiring decisions for the astronomy Ph.D.s. Battelle looks for people who they believe will fit well into their group. They do contract research; the intellectual ability of applicants is rated very high.

Bahcall said that the people they hire at Space Telescope are expected to work fifty percent of their time on their own research, and to give fifty percent of their time in service to the organization. ST is similar to an academic institution; they are looking for first-rate scientists whose work will serve the astronomical community. The General Observers branch, where she works, is one of several branches.

ST advertises with specific job descriptions. Each branch reviews the applications. A committee draws up a short list after it has reviewed the applicants' recommendations and looked closely at the applicant's experience as well as his/her potential to carry out the institution's goals. The branch head orders the short list; then the head of the branch or a board of branch members reviews the list, interviews the applicants, and makes the hiring decision.

Wolff said there are four divisions at NOAO, each of which receives its own applications and reviews them. The division head makes a recommendation to the management board. The Director then appoints a committee made up of a cross-section of the staff, receives their recommendations, and makes a decision. She looks for a service component to the institution. Applicants usually are Ph.D.s with two or three years' post-doc experience. Currently NOAO needs more applications from instrumentalists.

Richstone said that the process of hiring assistant professors is different from hiring post-docs; the latter are appointed by the principal investigator and are supported usually by a grant from NSF or NASA. Different P-I's look for different things: usually they say something like, "I want to get the smartest person I can find to do what I am interested in doing." Post-doc positions are not just "project" jobs. P-I's usually want to find people who are promising and who have a strong record of solid performance.

He said that academic hiring is always political. Before a job description is even written, the department has had to secure permission from the dean to list an opening. That means the department has had to justify it to the dean; to do that, the department has had to discuss what it wants and what it thinks it can get. The selection process is also political, even though it is "ostensibly democratic." A search committee chair is selected; he or she then chooses the best scientists in the department to set the agenda for the search; then the department chair and dean are involved. The latter two can upset the hiring process if it appears to either of them that something has gone wrong.

Wheeler said that for the past five years his department has placed as top priority the hiring of an extra-galactic astronomer for McDonald Observatory. Each year they hired "the best person who applied," leaving unfilled the position of extragalactic astronomer. "You try to set your targets, then try to go with the best people."

Richstone said that what they look for at Michigan is "a field match of the *most* promising candidate for the next five years with the needs of the department as we understand them now." He said that good candidates are those who present achievement and evidence of some independent work in progress, and demonstrate the ability to express themselves well in a colloquium situation as well as with small groups of people. However, different smart people may disagree with each other about the worth of individual applicants. When there are conflicts, the process bogs down. He said that folks at U of Texas look for evidence of determination in a candidate: "Don't get discouraged. I

was not the department's first choice, and neither was the previous chairperson the first choice when he was hired."

II. What factors influence a search committee? What do you look at to determine who will be of present service to the institution and who will be productive in the future?

Stokes said that twenty-five people applied for jobs at Battelle last year and that the way you prepare your paperwork is really important in communicating with the screening committee. Battelle looks for an element of confidence and an indication that applicants can interact with their peers and with their group leaders; this is extremely important to them. In the personal interview they look at the impression the candidate gives and for an indication that he/she has the ability to deliver "something extra." They wait until after they have had people in for interviews before they call for references. They try for "gestalt hiring"; they believe they know when they have hired the right person.

Bahcall said that at ST they try to make it as dear as possible in the advertisement what the job will entail and what qualifications are required. It is expected that the applicant will make him/herself knowledgeable about the job and self-select. In the cover letter they look for evidence that the applicant has a clear understanding of what they are looking for and that he/she feels he/she can contribute in a significant way. In a resume they look at the applicant's accomplishments, publication record, and experience with computers. Bahcall said she looks very carefully at the resume for evidence of scientific experience as well as scientific potential. Then she asks for references.

Wolff said that they advertise in AAAS and in *Physics Today*. They look first at all the paperwork and then critically screen. They want to see evidence of research planning, of the applicant's ability to define a problem and knowing where he/she wants to go. They read all the letters of recommendation and try to give a fair hearing to all candidates, to get to know them equally well. She advises doing something to make your application stand out; if you have special skills, list them. After they have screened the applications and drawn up a short list, they try to interview all candidates on that list.

Richstone said that what you really want is to get noticed. They will look at the citation index, and from it identify an applicant's field and judge his/her suitability. The letters are important; get them in on time. They use the interview and the colloquium principally to consider how the applicant will work within the department and how effective he/she might be in the classroom. Each member of the department probably looks at the candidate in terms of his/her response to "my" research.

Wheeler said that with research associate jobs, candidates rise to positions for which they write proposals. Research-track people are screened by people within the department. For academic positions, he said, they look for energy and enthusiasm. He advises people to personalize their applications. They look at the letters of reference as a measurement of the applicant's likelihood of growing on his/her own. Screening committees and department chairpersons put more store in letters from people they already know. "We are," he said, "probably never going to get away from the syndrome of knowing someone who knows someone."

Question from the Audience: What do you look at most closely in an application?

Richstone said that he looks at the candidate's publication record as a pretty good predictor of subsequent productivity. Recent graduates should have at least five, maybe ten publications, he advised. For a candidate who has had post-doc experience, maybe thirty publications is appropriate.

Bahcall said that in a specific case, she received an application from a very bright candidate who had letters of recommendation from distinguished persons. She said that she pushed for him on the basis of the letters and his interview, that she was willing to take a chance on him, and that they

hired him.

Stokes said that Battelle wouldn't hire a Ph.D. without a record of publications. Three publications might be okay. They look for the ability to attack a problem independently; they want people who can do hard problems.

Comment from the audience: What about hiring at the smaller schools? How well a person will fit into a department that emphasizes teaching rather than publishing is a different process. Further, in an astronomy department of only two other people, the candidate must meet not only the department's needs but also sometimes those of the school of natural sciences or school of arts and sciences. In the hiring of new faculty, deans play a large role. In such schools, the applicant's interview with the administration is also important.

III. What about two-career couples? What factors make it difficult to hire whom you want?

Stokes said that two candidates turned them down last year because of their spousal requirements. Next year they will have a new branch of Battelle on the campus of Washington State University. They are very willing to work to find spousal positions; "I think we offer extraordinary cooperation."

Bahcall said they have seen no problems so far. But because ST is close to the Hopkins campus and to Washington, D.C., their location, she said, is a distinct advantage.

Wolff said that last year a university was willing to make more accommodations than they could, and so they lost a candidate they wanted to hire. Neither a university nor a federal agency, KPNO can usually be more flexible. When couples apply, they should let the screening committee know up front. Wolff said they invite proposals from two-career couples.

Richstone said that flexibility is difficult to achieve for senior appointments. Actually, it depends on the Dean. If he is "sensible," there may be some flexibility. Housing costs impact on hiring, too.

Further, he said that we all know smart people hang around with other smart people, so it should be no surprise that smart people marry each other. It is also likely that when it comes time to find jobs, there may be only one job in a department. However, when another institution is within driving distance, as MSU is near to UM, cooperative efforts are possible. He said that the University of Michigan will immediately communicate with other departments on campus and with departments in neighboring universities and community colleges to do what they can to hire a candidate and to find a position for his/her spouse or partner. They will, he said, even offer to cooperate in financing a position.

Wheeler said that there is no "global solution" to the problem of hiring two professionals; each case is decided on its own merits. It's hard to generalize. He said that the University of Texas hired one couple to fill a single position, and the word they heard was, "You got a really good deal." He said, "If finding one job is tough, finding two is tougher. Good luck!"

Question from the audience: Do you want to know "up front" that two people are applying?

Wheeler said that an applicant should state his/her situation honestly.

Wolff said that applicants should say what they want.

Bahcall advises to apply for what you want.

Audience question: Is having a spouse a detriment in getting a job offer?

Wolff said that applicants should not spring a spouse as a surprise.

Richstone said that sensitive recruiters know they will get better people if they try to help people get the job. In one case he said that they made a job offer, then discussed with the applicant the options for her spouse. They were, he said, willing to examine those things. Look at the job listing, he advises; if it says "at least one," there might even be two positions.

Bahcall said that employers are looking to hire whoever they consider to be the BEST candidate. Even if you need to get your spouse a job close by, it will not deter from your abilities.

Audience Question: What if you have taken time out to have children and are returning to the job market?

Richstone said that the employer needs to know this situation; applicants should make it clear. Comment from the audience: Men need to take time with their kids, too. Yet they suffer from not being advanced too readily if they do. Elder faculty need educating. A recent study in *Scientific American* shows that having kids and being married helps one to good work. Comment from Marc Price, CSWA Committee member in the audience: The American Chemical Society has published evidence demonstrating that being three years out of the profession means being four to five years behind one's colleagues in career-development.

IV. Are we now reaching a balance between good jobs and the number of job applicants?

Stokes said that Battelle has noticed decreasing interest in responses to its advertised jobs, and that it has also lost its post-doc programs.

Bahcall said it seemed to her that ALL the post-docs on the market were applying to ST. She sees no diminishment in the number of applicants.

Wolff said that NOAO usually has large numbers of applicants for any position it makes available.

Richstone said that he had been watching their graduates apply for post-docs: many of them seemed to wind up without jobs. The number may be up by a factor of two from last year. He said they have seen more bright, driven PhD astronomers than the number of positions available for them. As training institutions, he thinks the universities are doing poor jobs of recruiting and training minorities, especially Blacks. But, at U of Michigan, he said, they are finding they get a number of good applicants and that they are satisfied with those they get.

Wheeler said that he feels we're in a steady state. A hopeful note: the University of Texas currently has ten positions available for only minority applicants-in *any* field.

V. What should the AAS do?

Stokes said that the universities are not preparing people to work in the national laboratories, nor to respond to the national needs (as determined by the Department of Energy). He said that it takes four to five hours to explain to people what they do at Battelle.

Richstone said that within academia there are biases against working in industry. He said his thesis advisor refused to write him a letter of recommendation for an industry job.

Audience Question: Is there a stigma on a post-doc coming from work in a national lab?

Wolff said no.

Bahcall said no.

Stokes said that there is a lack of people who are knowledgeable and well-trained in state-of-the-art instrumentation. The time is coming when applicants without this will be crippled.

Wolff said she emphatically agrees. In terms of looking at a job at Kitt Peak, she advised students to get experience in instrumentation, so that they would stand out beyond others in the field. Both funding and timing are required to generate/build instrumentation, and both are lacking.

Richstone said that the AAS might emphasize making instrumentation part of its degree programs. Students need to be provided with training in this area.

Comment from audience: Only a few academic institutions have the state-of-the-art equipment and personnel to provide such training, but national labs have internships that would meet

these needs.

Wolff said that, with departmental assistance, NOAO might be able to provide such internships as well.

My sincere apologies to any of the speakers if I have misquoted you or if I attribute to you sentiments or ideas you did not utter or intend. I guarantee you space for "rebuttal" in the next issue of STATUS, if you want it. In the interests of saving time, I did not send copies to each speaker to get his/her approval before going to press.

In an essay on the op-ed page in the New York Times, May 19, 1988, Judith Martin and Gunther Stent* suggest "affirmative nepotism" as a way of alleviating the problems related to hiring two-career couples:

Dual-career couples turn out to be another class of disadvantaged people. In a vast country in which mobility is necessary for many kinds of successful careers, they are not free to compete individually for the best jobs in the nationwide market.

This means that employers will have to recognize their responsibility for placing spouses, and that candidates will have to accept being evaluated as a package.

Affirmative nepotism should not be considered an underhanded tactic practiced by streetwise recruiters. Rather, it should be an open policy that, as fairly as possible, reconciles our traditional beliefs in the sanctity of the merit system and of the family with our modern belief that couples should have equal opportunity to follow careers consonant with their talents and interests.

Perhaps *this* is something the AAS ought to consider. Does anyone want to draft a recommendation for the Council to consider in January?

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WORKING SOLUTIONS. II.

More Personal Narratives

The following articles continue the series of describing how astronomers might reconcile the demands of their careers with the responsibilities to a. marriage and children. By publishing these articles, the CSWA hopes to offer support to these persons, to generate appreciation for the diversity of solutions one- or two-astronomer-families may find workable, to urge those engaged in this difficult "balancing act" to remain hopeful and cheerful, and to encourage those who are considering it to take the risk.

The issues involved affect both men and women. The first article, written by a two-astronomer family, makes this clear. So also does the second, for a woman's decision to return to school and prepare for a career in astronomy resulted in big changes in her family's life. The third article is a question/answer dialogue between the editor and a male astronomer. It belongs in this section because it is also a solution that is working-as they all are-so far.

"WE THINK BOTH THE FINANCIAL AND THE PROFESSIONAL SACRIFICES HAVE BEEN WORTH IT"

by Julie and Tom Lutz Washington State University

We met, got married and had our children while in graduate school at the University of Illinois. That was a crazy thing to do! Actually, it worked out well for us over the long run. While some of our friends are delighted with having their children at ages 40-plus, we just don't have as much energy now as we did when we were in our 20's. Also, while graduate school is certainly stressful and we had more than enough to do, we did have quite a bit of flexibility in our schedules.

The first child, Melissa, was born in January 1967 during semester break (real family planning). Julie took a reduced course load that semester and made up for it by going to summer school for a couple of years. For about six months after her birth, we brought Melissa into the University of Illinois Observatory and kept her in our office or in the nearby darkroom. After that, she was in part-time daycare with a woman who lived near to us in graduate student housing. Our second child was born just after Julie finished her prelims in 1969. None of the faculty who attended the oral exam will ever forget the sight of the soon-to-be Clea rolling from one side of her mother's stomach to the other during the questioning.

We left Illinois in 1969 after Tom finished up and took a position as an Assistant Professor of Astronomy in the Department of Pure and Applied Mathematics at Washington State University. Julie did her entire dissertation in absentia, making observations at Kitt Peak National Observatory. Even though she had no official status at Washington State University, the Math Department gave her access to computers, library facilities, office space and other things necessary to the successful execution of her thesis work. Julie had a natural "in," since Tom was on the faculty, but generally faculty members took her determination to get a degree very seriously.

Julie got her Ph.D. in the fall of 1971. WSU hired her as a part-time, temporary Teaching Associate for academic year 1971-1972. At that time there were very few women in regular tenure-track or tenured academic positions, and we were both anxious for Julie to avoid the "trap" of teaching year after year on a temporary position. In the spring of 1972, Julie told the department chair that she was not interested in taking another temporary position. She said that she would like a half-time permanent position that would carry with it health insurance, entry into the retirement system and other benefits. The Math Department supported this and used half of an FTE to hire her. The camel had her nose in the tent and WSU didn't stand a chance after that! Two years later, when the department had a half-time salary left over just before the semester started, the other half of Julie was hired on a temporary appointment. We alternated semesters of teaching a basic math course. The Astronomy Program has expanded to the point where we no longer teach mathematics courses, but our willingness to jump in and do that was a help in getting a regular position for Julie. Before we left for England in 1976, Julie asked that the university give her a full-time, tenure track position with some credit towards tenure. By then she had a solid record of teaching and publication, as well as a research grant. The university said "yes"; the Lutzes said, "Thank goodness!"

-Suppose WSU had not granted that first half-time permanent position? We did have some other courses to pursue. We were looking actively for positions at other universities. We might have proposed sharing a position at WSU. We might have gone along on one salary for a couple of years with Julie able to devote her time to research, with the hope that she could get partial salary on grant funds.

We realize that it is rare for astronomical couples to secure tenured positions at the same university. The key in our case was for Julie to ask for what she wanted. That sounds simple, but it is very difficult to do. Timing, personalities and a host of other factors come into play. For example, Julie picked carefully her time to ask for a regular position. She waited until an NSF grant had been funded and she had completed a major task for the university (a compliance study of Title IX).

We have a few more remarks to make about children, since decisions about whether to have children and when are so important to professional couples. By having the children early in our careers and committing ourselves to raising the children jointly, each of us has compromised ourselves professionally and financially. We have had to struggle to find time to do our research (in addition, the teaching loads at WSU are relatively heavy) and it has involved spending many evenings and weekends in the office, taking an extra load on if the other person has to travel, going home if a child is sick, etc. ETC. Financially, we had to fork out large amounts of money for child care at a time when our salaries were relatively good (academic salaries in general have not kept up with the inflation rate over the past 15 years). We probably would have nicer furniture, bigger bank

accounts and a lot of other material goodies if we had remained childless. We think both the professional and the financial sacrifices have been worth it. As soon as the kids are out of college, we are looking forward to becoming yuppies.

Also, one thing we didn't expect was the amount of time and energy that we would be spending on our kids when they were in their teenage years. When we were parents of young children, we couldn't look far beyond "the end of child care". Somehow we thought everything would be easier then. Hah! There is a wise saying: "Little kids, little problems; big kids, big problems."

Melissa (21) and Clea (18) are students at Oberlin College and Southwest Missouri State University respectively. All we have to do now is to write checks for tuition, room, and board and pay (large) phone bills.

The departure of the children has made a great change in our lives. We got married and had children immediately, so we have had to make adjustments to live with each other in harmony now that we are back to just the two of us in the house. During the years that we were raising children, there was little room in our lives for things other than work, the kids and a little socializing. We have time now to develop new interests and pastimes, some joint and some separate. Our advice to couples who want to combine work, children and careers is to avoid any kind of a *SUPERCUPLE* syndrome and to keep lines of communication between the two of you wide open. .

We hope that reading about our experiences will be useful for some other couples. We know that our situation (like all others) is unique and we are not suggesting in any way that people should do things the way we did them. We have been in some pretty tight corners (having children early, wanting to find two jobs where there was only one) and have been able somehow (luck, good timing, planning, etc.) to work things out. We don't see where things have gotten much easier over the years, but at least we see now a few more examples than in the early 70's of couples where both people are employed in decent positions and where shared parenting with appropriate child care support is a reality.

TALES OF A DELAYED VOCATION

by Sally W. Stemwedel

When my fourth child was approaching nursery school age, my long-standing desire to become an astronomer moved into itch stage. Our life style in the golden ghetto of suburban America was comfortable, but not personally fulfilling. It was structured so as to provide every possible activity for the children as long as Mom's taxi service operated hourly. It was not structured to provide easy access to graduate education in astronomy nor support services for someone like me trying to gain access.

Let me explain the origin of the itch. A "few" years ago as an undergraduate math major at Wellesley College I elected to take Astronomy 102 as my related science course, to avoid taking physics. The course was taught by Sally Hill, a women in love with her subject and extremely talented in teaching it. Moreover, she believed in our abilities so visibly that we came to believe in them too, as well as to be enthralled with astronomy.

I continued taking astronomy courses, but stumbled along the way with the required physics courses. I married after graduation and produced four beautifully gifted human beings who have given me an education of a kind never found in the classroom. I would never trade that, but I still had the itch that Sally Hill and the others in Wellesely's Astronomy department had given me.

Starting and finishing are always the hardest. The middle is much like treading water.

Starting was my reaction to feeling trapped in that suburban ghetto when my husband took another job in N.Y. A friend encouraged me to do what I had talked about, to return to school to see whether I could do the undergraduate physics that had given me problems before. She had finished her BA while producing her four children. She assured me that all scheduling problems could ultimately be worked out. My husband has always been supportive of my ambitions, and he helped

the older children understand how their chores and responsibilities aided my efforts. He went back to school at the same time for a master's in chemistry. So we shared chores, homework, q.m., and one professor.

One or two undergraduate physics courses a term doesn't seem like much, but-along with the 1.5-hour commute, homework, and family-it filled out my life nicely. In addition, I began to do computer analysis for some educational research that was conducted by a physics professor. Thanks to excellent teaching and to real interest being shown in me by professors in the Physics department at Rutgers-Newark, I found myself succeeding. It was not easy, but with work, I could get it. As I used up the available curriculum, they encouraged me to move on to graduate work.

Committing to a graduate program was another large step. Limiting my geographic range to be able to get home for dinner most nights, I entered a physics program at CCNY that was supposed to have a concentration in astrophysics. I accepted a teaching assistantship, and maintained a minimum fulltime course load. I was supposed to be in line for a NASA program to train minorities and women, but as I finished my first year ready to embark on the program, women were removed as a target group; so I continued to teach. The astrophysics courses in the catalog never appeared on the schedule. I began to feel trapped in a different sort of way.

I found the department's astrophysicist and he agreed to advise me on a master's thesis. We got the proposal through the committee with the help of some of my professors who were aware of my goals. And so I embarked on astronomical research. But that only seemed to inflame the itch.

Armed with the master's degree (and pushed by the two college tuitions coming due each term for the older children), I set out trying to find work as an astronomer. I wanted to use my computing experience (commercial, statistical, and now astronomical modeling), my education in physics and astronomy, and what I knew I could learn on the job to be a support person on a research team. The panel discussion in Vancouver painted a bleak picture, but individuals I met there were very encouraging. All I needed was a chance. But this kind of position does not often appear in the ads.

I decided to use my resources as well as those of my graduate advisor and school. I took myself back up to Wellesley to visit their career office and the Astronomy department. On a snowy January day, the department was just as warm and affirming as I had remembered. Scott Birney, the present chair, and Priscilla Benson gave me time, information, suggestions, encouragement, and current addresses of my Wellesley contemporaries. When I contacted the astronomers with whom I had studied at Wellesley, I got more encouragement as well as specific suggestions and contacts for the job search. Donna Weistrop and Nancy Remage Evans were extremely helpful. It was through Wellesley contacts that I landed my first job in astronomy, a "few" years after falling in Jove with it at Wellesley.

On the downside, my husband's new job and mine are 300 miles apart. Maybe later I will write the sequel to this, on my life as a commuting mother (weekly between N.J. and D.C.). For now, we are too busy trying to figure out how to do it, while we are doing it.

A few "one-liners" to summarize:

I would rather try and fail, than never know whether I could have been an astronomer.

Mostly, things happen when you make them happen. Even children and husbands can adapt for a worthy goal. Perseverance beats intelligence and talent most days.

If all you need to succeed is a chance, ASK for that chance.

The "old-girl" network is alive and well, at least among Wellesely astronomers.

SUPERDADS GET TIRED, TOO

by Dr. X

Dear Editor:

I found a copy of a newsletter called STATUS and read it. I have some comments about it, but

you probably won't publish them because I don't believe you really want to print any point of view that doesn't toe the straight, hard-core liberal line. Or if you do, you'll just label me a sexist. As a matter of fact, I have discussed with my two favorite female collaborators (on those long cloudy nights) many of the issues raised in the fall issue of STATUS. Maybe I should get *them* to submit my opinions.

But I will say this. I was mildly annoyed at reading the essays on child-rearing [in "Working Solutions. II. Personal Narratives"]. I share with my wife the responsibility for caring for our child, in part because I feel it is important for fathers to spend time with their children) and in part because I want to help my wife complete her graduate program. Do you think I will get any credit for the "supermom" image that a female astronomer gets? Hell, no.

signed:

Young father-astronomer

Dear Young:

Thank you for writing. You sound more than "mildly annoyed," however; you sound very angry. That anger I have heard before—from the women astronomers who spoke at the panel discussion in Vancouver in June 1987, and between the lines of the articles you are referring to. Like you, they love astronomy and love their kids and they feel guilty for dividing their time between them, and they feel angry that they feel guilty.

I think you *very much deserve* some credit. Your wife is fortunate, your child is fortunate, and in the long run you will see some benefit. But for the present, your decision has probably alienated you from the gang (comprised now of both men and women) that has chosen to concentrate only on astronomy.

You're in excellent company, however, with other parent-astronomers (both men and women) who have made choices similar to yours. You may not have a close association with very many of them, for the choice you all have made severely limits your time. The point of publishing your letter here is to establish an avenue of communication and support. It's sometimes a little easier to do something difficult when one doesn't feel alone. And it is also a relief from anger and frustration when someone reminds us that these feelings, however strong, are appropriate to the situation. Of course you are angry. You're ought to be. You *don't* have the support and you *don't* get the credit you deserve and could use.

But I think things are changing. For the better.

I believe your decision to spend some time at home with your family took courage and integrity. These are values both men and women in astronomy should read and know about.

But there's more to it. We don't do ourselves or the AAS a service if we insist that good science can or must be done only by those people who make it their exclusive choice in their lives. Some women have broken the ground by insisting that having both a career and a family are necessary for them. Men are thus "liberated" to make the same choices. If there *is* a "hard-core liberal line," I think it would go something like this: Men are our enemies. They have held the power so long in the world of work that they don't want to move over and make room for women. But women are growing more and more powerful, proving themselves capable of doing "a man's job." Consequently, a woman-or a man—who wants to enjoy a significant achievement in his/her work and also wants to be involved in the care of a family compromises his/her standing professionally. This is, of course, nonsense. The very men who have made the choices you describe for yourself are the ones who can change these stereotypes that impede the clear thinking of us all.

I think it is really important for us to support each other as persons, as well as members of a community devoted to excellence in astronomical research and teaching. One of my goals in STATUS has been to make us all more aware that good work is done by (and with) people who respect themselves. The ways in which we demonstrate respect for our colleagues' personal choices

contributes, I am sure, to the self-respect they enjoy.

Dear Editor:

In the last issue a writer to "Dear Andromeda" described several difficulties she had encountered establishing herself in the field, including getting to important conferences and spending summers at active research institutions. I would like to make all astronomers aware that as Director of the Dominion Astrophysical Observatory - a part of the National Research Council of Canada's Herzberg Institute of Astrophysics - I welcome inquiries from individuals who would like to spend their summers or sabbatical leaves with us.

Through standard peer review procedures, visitors have access to our 1.8-m and 1.2-m telescopes, which are equipped with excellent spectrographs and state-of-the-art detector systems. The Observatory also operates the recently founded Canadian Astronomy Data Centre, which runs STARCAT and has IRAS and IUE data copies. We have an excellent library that includes glass copies of the northern and southern sky surveys; good computing facilities; and specialized measuring equipment, including a PDS microdensitometer. A building extension to be completed in September, 1988, will provide increased space for the library and laboratories, as well as providing several more offices for visitors. We are privileged to be located in an area of incomparable natural beauty, and we enjoy proximity to three excellent universities, each with strong astronomical research groups (the Universities of Victoria, British Columbia, and Washington). The only caveat is that present operating budgets do not allow us to offer salary support.

Interested persons are invited to contact me.

Sincerely,
James E. Hesser
Hesser@uvphys.Bitnet

THE ANNIE J. CANNON AWARD is presented to a woman for her "distinguished contribution to astronomy or for a similar contribution in a related science that has immediate application to astronomy." In the past, this prize was awarded every other year and carried a stipend of two thousand dollars. Beginning in 1988, the American Association of University Women, who fund and administer the award, voted to increase the amount to five thousand dollars, and to present it annually. The AAUW's choice of recipient is based on advice from a three-person committee from the American Astronomical Society, which reviews and rates the applications. Candidates are asked to submit a research proposal, two letters of recommendation, a description of their past work, and a list of publications. The award is made in April. This year's winner is Karen J. Meech, of the Institute for Astronomy at the University of Hawaii. She is a planetary astronomer whose proposal was for further research on comets.

In 1987, applications were mailed in September to all department chairpersons; completed forms were due Feb. 15. If you have questions or if you want to ensure being on the mailing list for next September's applications, write to:

Paula Szkody
Chairperson, Annie J. Cannon Award Advisory Committee
Department of Astronomy, FM-20
University of Washington
Seattle, Washington 98195

or

Ressie Walker
AAUW Educational Foundation
2401 Virginia Avenue,
NW Washington, D.C. 20037

The Editor, on behalf of the Committee on the Status of Women in Astronomy, wishes to thank the Department of Astronomy at the University of Washington for providing funds for the printing of this issue of STATUS and permitting us to use the technical services of Karen Fisher.