

WOMEN IN RUSSIAN RADIO ASTRONOMY: REFLECTIONS BY TWO RUSSIAN RADIO ASTRONOMY WOMEN

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This spring we learned that the ST ScI would host a conference on “Women in Astronomy.” Few of our colleagues could imagine that such a meeting was even possible. We, of course, had a sense (in the back of our minds) that there was a problem, but it was only a dim feeling. Officially, we were told that there was complete equality in all rights between men and women in our socialistic society. The idea to organize such a meeting meant that in a developed modern society a basis already existed to discuss and finally solve this complicated problem. We believe that the drafting of the “Baltimore Charter” will turn out to be a small stone in the peak of mountain, which will set an avalanche in motion.

1. STATISTICS

We work at the Radio Astronomical Observatory in Pushchino. It is one of the largest observatories in Russia and in the former USSR, with a staff of about 200 people, including 41 scientific researchers. These scientific researchers carry out investigations in different branches of radio astronomy—planets, the interplanetary medium, the Sun, the interstellar medium, molecular clouds, pulsars, and other galactic and extragalactic sources.

We decided that the best way to clarify public opinion about women’s status in radio astronomy was to ask our colleagues several questions concerning this subject. Our colleagues graduated from university from the beginning of the 1950’s up to last year and, of the 41 total, there were 29 respondents.

We were interested how the number of women and men attending university changed between the first and last courses. We learned that the mean percentage of women in the universities was 34% for the first year and 38% for last year. There is no tendency for this percentage to change drastically over the 30 year period for different universities of Russia.

We are former students of the State University of Kazan. A request to the chair of the radio astronomy subfaculty, G. M. Pepsin, at our Alma Mater gave us information about the number of women and men who graduated over a 25-year period. On average, there were 5 women among 14 students, or about 36%. This number is very close to those given by our colleagues and convinces us that we have rather reliable statistics for the other questions.

Therefore, one third of those graduating from universities who have specialized in astronomy or radio astronomy were women. However, this percentage declines steadily in subsequent stages of professional activity. We would like to illustrate this statement with some examples.

- a) At present the staff of the Radio Astronomical Observatory in Pushchino includes 7 women among 41 scientists (approximately 17%).

- b) In 1990, IAU Colloquium #128 was held in Poland. Almost all “pulsar” people were there. Among the 38 Soviet participants, only 5 were women (about 13%).
- c) Looking through the bibliography of published papers in pulsar science by Russian authors and of the USSR’s radio astronomy conferences in the 70s and 80s, women made up only 9%.

We asked our colleagues how many female faculty were in their universities. Typically the number varied between 2 and 8. Moreover, they taught the humanities or practical lessons only. When asked whether women could be good teachers at the university level, 61% of them answered “yes.”

So while about equal numbers of boys and girls are educated at school, there are two males for every female among students of physics at university, and 10 men for every woman among those engaged in radio astronomical research professionally.

We asked our colleagues, as managers, whom they would prefer to hire for science investigations at the Observatory. 63% said they would prefer men, 11% said they preferred women, and 26% indicated no preference between men and women. These results show that the trend for science to remain a “gentlemen’s club” will be well preserved in the near future.

Last, we asked whether there were ways to improve the status of women in science? About 55% of the scientists replied either that women have no problem of status in science or that such question is very artificial. Thirteen percent acknowledged that the problem did exist and must be resolved in the future.

2. DISCUSSION

We believe that there are three general reasons for the disproportionate representation of women in science: a) mentoring and public opinion, which is now inadequate, b) discrimination in hiring and tenure, and c) the poor funding of science (including radio astronomy).

Mentoring is very important for recruitment, retention, and advancement of women in science. Public opinion also greatly affects women’s choices and behavior. There are three widely shared opinions circulating in society.

Women and men are totally equal in every sphere of life (social activity, science, politics, etc.). In the former Soviet Union we were told that men and women have equal abilities in every field of activity. The socialistic slogan of total equality sounds very positive, but in practice it results in a psychological atmosphere in which women try to imitate men’s style of working—that is, to be “a good fellow” in those fields which are usually male-dominated. Science is one of them (we will not discuss other situations, such as railway construction work, which has become a woman’s speciality). In short, imitation seldom leads to success. We think that women should follow their own way.

Woman is a female and her fate is only to be a good mother, wife, and housekeeper. Now in Russia one can hear about unemployment more and more frequently. And we have noticed new trends in the formation of public opinion: “Woman is created for motherhood and bringing up children, her place is at home.” It is necessary to understand that manipulations of common opinion are being made for the benefit of

the current authorities. We believe that women should join together to influence public opinion in their own interest. They should have every possibility to make their own choices freely about family responsibilities, and social, political, and scientific activity.

Women and men complement each other and progress in different branches of science is possible only as a result of the harmonious combination of men's and women's mentality. The statement that men have created modern science is very close to the truth. Another aspect of that situation is that science has become a system of "gentlemen's clubs." However, it is now becoming clear that male mentality by itself cannot find answers for the eternal questions of humanity. The character of science is changing steadily, and will include ever different components. Together with science's changing character, the role of women in it will also change, and probably in very unexpected ways. The nature of women's mentality—patience, kindness, emotionality, thinking in the survey mode, making softer relations between colleagues—together with rationality, may open now closed doors leading to truth. The famous Russian philosopher Vladimir Solovjev wrote a century ago: "The relationship between man and woman is the relationship of the differently acting potentials, which can reach perfection only in the process of interaction." Probably this is the only way for science to progress.

Is there any hiring discrimination against women in Russian radio astronomy? As far as our Pushchino Observatory is concerned, during the last 20-year period approximately 22 post-graduates were taken on staff and only 2 women were among them. What is the reason for that? Observatory officials used to say that it is very uncomfortable for women to make observations at night time. Nowadays observations are automatized but discrimination remains. It is supposed that women cannot work effectively because of the cares, anxiety, and responsibility for children and family. Certainly, in the period of bringing up children, there will be frequent and long breaks in professional activity, when a woman may fall behind her colleagues. This circumstance will always exist, but its consequences could diminish with the help of relatives, colleagues, and the government. The authorities must understand that science cannot be developed successfully without female participation. At present they prefer to ignore women's problems. It is easier, but not very wise. One can consider a society to be well developed only if women feel comfortable in it.

The status of women in science is closely connected with the status of science itself. At present Russian science is very poorly funded by the government. For example, the salary of a professor is half as much as the salary of the bus driver. There is no money for publishing scientific proceedings or books, or for taking part in international conferences (it is possible now only with a sponsor's support). As a result Russian scientists are leaving science. Sufficient financial support for science will stop the attrition of talented scientists and attract many bright minds to scientific work, including women.

What are the general ways to change the situation? In our opinion, for successful development of science, it is necessary to train daughters in a spirit of enthusiasm for creative work, to form public opinion in favor of women's kind of thinking, and to increase the funding for science. Discrimination must be replaced by support of women's professional activity.

To bring these ideas to life women must take a great role. "Woman's development, her freedom, her independence must come from and through herself," said Emma Goldman, an active leader in the struggle for women's rights at the beginning of this century. More and more women are coming to an understanding of this idea.

This meeting “Women in Astronomy” is one of the steps needed in getting women together to struggle for our rights. A living example of women’s solidarity is our own presence here. Many American women made their best effort to help us to come to Baltimore.

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