



Silvia Torres de Peimbert
Mexico

“...the excitement I felt about astronomy has not ended and on the contrary has multiplied”

Interview by Judith Zubieta*

Emeritus professor, Instituto de Astronomía,
Universidad Nacional Autónoma de México.

Main research interests at this time

“I am an astronomer and work on gaseous
nebulae”.

Accomplishments and achievements she is most proud of

“My work has centered on the determination of the physical conditions and chemical composition of planetary nebulae and HII regions. The first type of objects correspond to the final phases of evolution of intermediate mass star; they have a hot central star and a gaseous envelope that shines. The H II regions are the combination of young, hot massive stars and gas illuminated by them. Both type of objects allow us to determine the physical conditions and composition of the gas.

In the study of planetary nebulae my work has given important clues on the conditions of formation of the progenitor star, and on the internal processes of the star. It has provided important restrictions to the understanding of chemical evolution of the Galaxy and other galaxies. My studies on this type of objects cover many other aspects: like halo planetary nebulae, and very young planetary nebulae, among others.



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In the study of HII regions my work has provided significant indications to understand star formation processes in the Galaxy and other galaxies; these results are important for the understanding of the Universe as a whole. Again many aspects of this field have been



Silvia Torres de Peimbert with her family

advanced with my contributions: like the seminal work on the Large Magellanic Cloud proposing to determine the primordial helium abundance with which the universe started its expansion, on this topic my approaches have been different: initiating the study of the low density interstellar medium in the Galaxy; proposing the relation of metallicity of the gaseous content of galaxies with total mass; measuring gradients of chemical composition in galaxies, etc.

My activities encompass many additional aspects besides research, namely fostering a scientific journal, promoting institutional development, stimulating graduate studies in astronomy, and investing a great effort in popularization of science”



Honors and awards

- G. Budé Medal, College de France, 1974
- Academic Medal, Sociedad Mexicana de Física, 1983
- Science Prize, Universidad Nacional Autónoma de México, 1996
- Emeritus Professor, Universidad Nacional Autónoma de México, 2000
- Emeritus researcher, Sistema Nacional de Investigadores, 2007
- National Science Prize, Mexican government, 2007



Gaseous pillars in the Eagle nebula



Silvia Torres de Peimbert's work focuses on the study of gaseous nebulae

- Heberto Castillo Prize, Government of Federal District, Mexico, 2007
- TWAS Medal and Lecture, Academy of Sciences of the Developing World, 2010
- L'Oréal-UNESCO Award for Women in Science for Latin America, 2011

Why did you decide to enter a science career

“As a child I was very interested in mathematics, which I found engaging. Later I became acquainted with chemistry and physics; finally,

in college I encountered astronomy. In graduate school it became clear that I indeed wanted to become an astronomer. I was dazzled by the scientific activity and the many areas of research that were being developed at the time. The excitement about astronomy has not worn out, on the contrary, it has multiplied”

Why is it important for women to be in science?

“I am convinced that it is important for women to participate in all human activities



The Milky Way seen from the Earth



Silvia Torres de Piembert, Mexican astronomer

and not to be excluded from them. For example in my discipline there were women that made significant contributions, and were only able to do so by assisting their husband or brothers, since they were not allowed to carry out their work freely. Only a few of them were recognized, and this was done belatedly. I consider that those women that

are interested in scientific research should have similar opportunities as men”

Who or what is your inspiration for doing science?

“Three scientists have inspired me: Guillermo Haro, Louis Henyey and George Wallerstein.

In Mexico, Guillermo Haro for his passion for astronomical discovery and for his commitment to the development of science in our country. While I was a graduate student in California, Louis Henyey impressed me for his generosity and self discipline in his research method, as well as George Wallerstein for his great interest in knowledge and for the support he gave young students to carry out research at an early stage”

What were the main barriers you experienced, and how have you overcome them?

“Although my family was very supportive of my interests, they raised me in a very traditional fashion. At the time I studied, women in my country were not expected to have a career. Therefore my own expectations of the role of women in society were the main challenges to overcome. At several stages in my life I had to stop and reflect on my real interests, in order to prioritize my activities. Of course, raising my children coupled to pursuing my scientific interests was quite a challenge. Looking back, I am very glad to have been so defensive of my career”

Do you have a family?

“I have been married for 49 years to Manuel Peimbert, who is also an astronomer, and with whom I have collaborated in my research

activities. I have a son and a daughter, both wonderful and hardworking; my son is an astronomer, and my daughter is a biochemist. They both work in Mexico City. In addition I have a 3 year old granddaughter whose company I enjoy immensely”

What do you like to do in your leisure time?

“What I enjoy most is being with my family, as well as with my friends. I read a lot, like to attend concerts and movies, and I also love sewing and knitting”

What is your advice to other women scientists?

“I am convinced that women scientists have a great responsibility in the different aspects or everyday life.

Within our own family: We should educate our own families with the same opportunities for both men and women. We should be aware that whatever we teach at home will be what our children will imitate in their future life.

Our role as educators: Let’s support education for men and women. My country has a low level of education, we require to encourage more opportunities of development to access scientific careers.

In the professional arena: we should make sure to treat men and women, students and colleagues with the same respect and attention.

In the popularization field: We should accept the challenge of making public appearances when required, since there is no better way of showing the way to young women, than showing ourselves.

In the personal aspects: We should not set limits to our goals. We should aim for the highest levels of achievement” ■

*Judith Zubieta has a PhD in Social Systems Sciences from the University of Pennsylvania, Professor at UNAM, with several publications on science and communication, Coordinator of the UNAM Long Distance Education Program and Mexican Focal Point of IANAS WfS-WG.