

SCIENCE AND TECHNOLOGY IN ARMENIA

Profiles of Armenian Scientists: World Class but Unknown

Yervant Terzian with Lisa Natcharian

For decades, scientists in the Republic of Armenia have quietly made discoveries that have had international impact but have generated little fanfare or recognition from the general public. Most Armenians are unaware of the world-class reputation these scientists enjoy, nor of the importance of the major Armenian research facilities that once powered the Soviet science effort.

To begin sharing knowledge of these achievements with the wider Armenian community, profiles of three leading scientists are presented here.

BENIK MARKARIAN

Dr. Markarian was an astronomer with the Byurakan Astrophysical Observatory near Yerevan. A quiet man with far-reaching vision, he discovered a new class of galaxies in the 1960's. A galaxy is a group of hundreds of billions of stars -- the galaxy of which we are a part is known as The Milky Way. There are many millions of other galaxies in the visible universe, some of which have extremely bright cores or nuclei. Markarian identified and studies this type of galaxy during his lifetime, and in honor of his work, these galaxies bear his name -- the "Markarian Galaxies."

Markarian galaxies have been shown to be some of the most active and energetic objects in the universe, and it is likely that these galaxies hide supermassive "black holes" in their cores. These black holes have enormous gravitational pull, and constantly devour other nearby stars by pulling them into the "black abyss." Such processes create copious amounts of energy that then escapes from these galaxies and can be detected with telescopes on earth.

The amazing discovery of such powerhouses was made by a modest telescope but with great imagination by Markarian and his colleagues at Byurakan. They used a small telescope, one meter in diameter, and installed an objective prism in its front, allowing them to photograph the spectra of hundreds of faint galaxies at the same time, and proceeded to identify and tabulate scores of Markarian Galaxies. Such catalogues are now used universally by scientists studying these objects. In the summer of 1988, the International Astronomical Union held a symposium on Markarian Galaxies at Byurakan where some 150 scientists from around the world presented their research.

This single discovery solidified the reputation of the Byurakan Observatory as a leading research institute. Founded by the legendary Victor Hampartsumian in 1946, Byurakan was also known for the discovery of "star associations," another term for the birth of stars from gigantic clouds in space.

Markarian lived a very modest life, and passed away while still very young due to a heart problem. He never had the chance to enjoy the worldwide recognition of his work, and he never received the prizes for his discoveries that surely would have come his way. The equipment with which he worked has now aged and deteriorated. Many of his followers and students continue his work, but the lack of supplies and facilities in Armenia since the breakup of the Soviet Union has greatly hampered their efforts.

PARIS HEROUNI

Dr. Herouni is the director of the Radiophysics Institute in Armenia. An Electrical Engineer and Radio Astronomer, Herouni is an inventor "par excellence." In the early 1980's, he built one of the world's most sophisticated radio telescopes on Mount Aragatz. The telescope featured a radio antenna with a dish 54 meters across, covered with 4,000 mirror-like panels. This new arrangement was able to detect energy from distant galaxies at radio waves as short as a few millimeters.

The unique design and accuracy of this radio antenna presents enormous potential for future instruments of its kind. Herouni created this spectacular radio telescope against all odds with imagination and very hard work. Now, this world marvel needs support to maintain it and to use it effectively.

Herouni assisted in the Azerbaijan conflict by developing high-tech radio equipment and communications antennas. Recently, as my guest (Y.T.), he visited several major U.S. radio astronomy observatories to share his insights with American scientists. In addition to his scientific genius, Herouni is a powerful artist who created numerous sundials decorated with Armenian writings and designs.

GRIGOR GURZADYAN

Dr. Gurzadyan emerged in the 1950's as a brilliant theoretical astrophysicist who wrote a pioneering book about exploding dying stars. The director of the Garni Space Institute in Armenia, Gurzadyan pioneered the construction and launch of small space telescopes to probe the short wave length (ultraviolet) energy emitted by stars and galaxies. This he did some 20 years before the U.S. Hubble Space telescope.

Gurzadyan never joined the Communist Party, and he suffered dearly for it, yet his intellect was so brilliant that he excelled at every opportunity. This very productive scientist, a few years ago, spent three months at Cornell University. In this short period he authored half a dozen technical scientific papers, and just before departing, revealed some twenty exquisite watercolor paintings of "Memories of Armenian Landscapes." Talented in every way!

In a speech to Armenian scientists in Los Angeles, he declared, "One day, I hope to climb Mount Ararat and see my country all around me."

ARMENIAN NATIONAL SCIENCE AND EDUCATION FUND

ANSEF (Armenian National Science and Education Fund) has been organized to provide scientists like Markarian, Herouni and Gurzadyan support for continuing their important work. Initially relatively small grants will allow them to continue their work, and purchase minimal instrumentation. The long term objective will be to create an endowment which will provide continuing financial support.

Operating under the Fund for Armenian Relief (FAR), control of the funds will remain in the U.S. and will be distributed under the surveillance of a Board of Directors in response to proposals deemed worthy of support.

Tax-deductible contributions to ANSEF may be made to FAR (Fund for Armenian Relief), 630 Second Avenue, New York, NY 10016. For additional information, call Mrs. Nouné Sukiasian at (212) 889-5150. Contributions in the form of securities can be accommodated.