

Valerian Grigor'evich Shevchenko (Obituary)

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Valerian Grigor'evich Shevchenko died on 13 May 1991. He was a doctor of physical and mathematical sciences, a professor, director of the Division of High Energy Physics, and Deputy Director of the Institute of Theoretical and Experimental Physics in Moscow. He died suddenly of a heart attack.

Shevchenko was born on 27 June 1923 in Isil'-Kul' in Omsk Oblast'. He spent his childhood and youth in Siberia, and by 1941 had graduated from Sale-Khardskiĭ high school. In the summer of 1941 he volunteered for the army, first aviation school, then school, hospital, then school again, and then naval aviation.

After demobilization in 1948, Shevchenko entered the physics department of Moscow State University. He finished his studies in the physics department and his post-graduate work at age 33 and began his career in science at an age when many young scientists have already permanently defined their place. Shevchenko had no time for "trial and error." He required of himself an exact accounting of his efforts, a sober relation to society and the ability to see the future.

In 1957 Shevchenko organized a group to study photonuclear reactions using the 35-meV betatron at Moscow State University. Already at the very beginning of the research he envisioned a large series of experiments encompassing an entire division of nuclear physics: the mechanism of interaction of γ quanta with nuclei. In these studies the asymmetry of the angular distributions of photoprotons and the intermediate structure of the dipole giant resonance were discovered. At this time Shevchenko presented reports at many international conferences, and wrote a survey article for the conference on electromagnetic interactions in Japan in 1968. His study of the giant dipole resonance in light nuclei led to the establishment of a general law governing the photodisintegration of nuclei with an incomplete shell, and the configuration splitting of the giant dipole resonance, which was recognized as a discovery in 1987.

And while crediting the many years of research conducted by Shevchenko and his colleagues in nuclear physics, research which has achieved world recognition, we risk stating that Shevchenko's greatest contribution to the development of physics was made as an organizer of science. Before many others he recognized the enormous role of international cooperation in scientific research. It is obvious that his work as the director of a division of the International Atomic Energy Agency in 1962–1965 played a great role in this, as well as his work as the pro-rector of Moscow State University in 1967–1968. In 1968 he became the deputy director for science at the Institute of Theoretical and Experimental Physics and fully devoted himself to this issue.

At the institute created by A. I. Alikhanov, Shevchenko found fertile ground for the execution of his plans. The high level of theoretical and experimental research conducted at the Institute of Theoretical and Experimental Physics, along with the outstanding organizational capabilities of its new



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(1923–1991)

director made it possible to expand substantially the circle of contacts with scientists in many nations of the world in a short period of time.

Shevchenko preferred scientific collaboration to be primarily the joint work of people, rather than the interaction of governmental structures (in itself an important and inevitably complex matter). Shevchenko considered the main contribution to cooperation with western centers to be, not so much the contribution to the material part of the project, as the extent to which our ideas entered the project and how much the physicists of the Institute of Theoretical and Experimental Physics were recognized by the community of scientists to be leading researchers.

Domestic physics can be proud of experiments which were conducted at the initiative with direct participation of Shevchenko. A broad international collaboration was born in experiments executed at the Serpukhov accelerator, and continued at such leading physics centers of the world as CERN (Switzerland), DESY (Germany), FNAL (USA). Shevchenko's name is found among the authors of the record-setting measurement of Schwinger np scattering, the first study of the formation of "direct" photons in the πp interaction, and the study of neutrino interactions in the 15-foot bubble chamber. He played a key role in the creation of the ARGUS detectors at DESY and L3 at CERN, using which fundamental results were obtained, such as the detection of B_d^0 – B_d^0 oscillations, the measurement of the number of neutrino generations, the determination of the elements of the Kobayashi–Maskawa matrix, which link the b quark with quarks of other generations, as well as a precise verifica-

tion of the theory of the electroweak interaction.

For more than 20 years Shevchenko has taught at Moscow State University and the Moscow Physicotechnical Institute. His career has completely matched his personality and his ideas about the development of science in our country. Shevchenko was a consistent advocate of the physicotechnical system based on the active participation of students in actual scientific work. In the absence of an experimental base at Moscow State University he found the opportunity to attract students to studies of high-energy physics in the high-energy physics laboratory he created at the Scientific Research Institute of Nuclear Physics at Mos-

cow State University and at a center for processing information from large bubble chambers.

To his last day Shevchenko directed the preparation of experiments at the future SSC and LHC accelerators. For him the time had come to harvest the fruits of accurate foresight: the international community of scientists highly valued the intellectual contribution of the team he directed. Dozens of talented physicists consider their coming to be physicists, their achievements, and their scientific fate to be linked with the participation of V. G. Shevchenko.

Translated by C. Gallant