VALERY ANATOL'EVICH RUBAKOV
(16.02.1955–19.10.2022)

The Editorial Board of *Physics–Uspekhi* regretfully announces that the prominent scientist and outstanding citizen, brilliant theoretical physicist, teacher and educator, science promoter, member of the Editorial Board of *Physics–Uspekhi* beginning in 1999 who greatly shaped the principles of the journal for more than 20 years and was Editor-in-Chief starting in 2016, and full member of the Russian Academy of Sciences

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passed away on October 19, 2022 at the age of 68. The Editorial Council, the Editorial Board, and the Editorial Office of *Physics–Uspekhi* express their deepest condolences to his relatives, friends, colleagues, and students, and to everyone who was granted the privilege of knowing Rubakov, and we mourn with you.

The life of Rubakov is a vivid example of uncompromising commitment to science, which inspired and continues to inspire generations of scientists in Russia and abroad. Rubakov pursued the highest standards of scientific ethics and adherence to principles; without pausing for a single day, he worked on new approaches to the understanding of physical phenomena. His pivotal scientific results formed the basis of a number of branches of modern physics.

Rubakov reshaped modern scientific ideas about the origin of the Universe by bringing together elementary particle physics and nonperturbative quantum field theory. His findings formed the basis of electroweak baryogenesis and leptogenesis, which allow explaining the baryon asymmetry of the Universe. He gave his name to one of the most beautiful experimentally verifiable effects, which he discovered at the age of 26: the monopole catalysis of proton decay. Rubakov authored the idea of a "brane world" with extra spatial dimensions that manifest themselves in the interactions of high-energy particles. He proposed fundamentally new models of the beginning of the Universe that describe its evolution at the earliest times prior to the Big Bang. A partial list of novel concepts proposed by Rubakov includes the principle of the emergence of time in quantum gravity, a model of dark matter made of superheavy metastable particles, and the possibility of creating a universe in a lab.

Rubakov's achievements were marked by many prestigious Russian and international awards, including the international Hamburg Prize for Theoretical Physics (2020), the Demidov Prize (2016), the Bogoliubov Prize (2014), the Lomonosov Prize (2012), the Julius Wess Prize (2010), the Markov Prize (2005), the Pomeranchuk Prize (ITEP) (2003), the Friedmann Prize (1999), and a gold medal and prize for young scientists from the USSR Academy of Sciences (1985). Rubakov was designated the person of the year in Troitsk (Moscow) in two categories: "Science" and "City and Society" (2013).

Rubakov was closely associated with Physics–Uspekhi during many years of joint work. Having started as an author at the age of 28 with the paper, "The structure of the vacuum in gauge theories and monopole catalysis of proton decay" (1983), he published 23 reviews, papers, and notes in Physics–Uspekhi, which bring hundreds of citations to the journal every year. In January 1999 (at the invitation of Vitaly L Ginzburg, at the time Editor-in-Chief and later, in 2003, a Nobel laureate in physics), Rubakov became a member of the Editorial Board and from that moment on was greatly involved in shaping the journal's strategy. In January 2004 (again, at the suggestion of Ginzburg), Rubakov was appointed Deputy Editor-in-Chief. In December 2016, Rubakov was approved by the Presidium of the Russian Academy of Sciences for the position of Editor-in-Chief of Physics–Uspekhi. Through all those years, Rubakov upheld very high standards concerning the scientific reputation of the journal. Many remember his verdict at one of the first meetings of the Editorial Board that he was chairing (in 2005): "It would be better to publish nothing than to publish mediocre papers." This motto has been strictly observed. But Rubakov cared not only about the scientific side of Physics–Uspekhi: managing the journal also required a huge amount of administrative work, because the Editorial Board is a legal entity with all the ensuing organizational consequences. In this regard, even in the journal's most difficult period, Rubakov was able to find administrative and financial solutions to ensure contiguous production and publication of both the Russian and English versions of the journal; difficult though it was under circumstances at the time, it became possible thanks to his reputation both in the scientific community and among science promoters, as well as in philanthropic circles and among patrons promulgating knowledge.

Rubakov's personality combined utmost integrity and civic engagement. His role in the development of Russian science in general, the Russian Academy of Sciences, the Institute for Nuclear Research, and Lomonosov Moscow State University is difficult to overestimate. Rubakov made a significant contribution to popularizing science by using his outstanding talent to explain complex phenomena in simple and understandable terms. Rubakov's textbooks became classics, and his brilliant lectures remain an unsurpassed exemplum. Rubakov was more than a teacher: he gave meaning to the work of a scientist, defined the values that inspire the pursuit of knowledge. He left too early, but achieved a great deal, leaving an internationally recognized scientific school of theoretical physics.

Rubakov did not leave a published autobiography, but used to tell instructive stories from his life to friends and colleagues. To preserve the memories of this outstanding person, we are asking everyone willing to share their memories of Rubakov to send them to Physics–Uspekhi so that we might create a page "In memory of Valery Rubakov" on the website www.ufn.ru.