

In Memoriam: Stefan Marinov

Stefan Marinov took his life on the 15th of July, 1997, at the age of 66. He was exhausted from his long and unsuccessful struggle for recognition of his physics. He is survived by two sons, one a Bulgarian citizen and the other a Belgian citizen, and a brother who is a professor of mathematics at the University of New South Wales in Australia.

I think the world has lost a great man who deserved a Nobel prize for his brilliant coupled-mirror experiment [1]. Where Michelson-Morley had failed to measure the ether drift by trying to find an anisotropy in a standing light wave in a static optical set-up, Marinov succeeded, by comparing the one-way time-of-flight speed in opposite directions along a rotating shaft. As established by Römer in 1667, Bradley in 1728, Sagnac in 1913, Michelson-Gale in 1925, and Conklin in 1969 (from anisotropy of the 2.7° K cosmic background), the one-way light velocity is:

$$c^* = c - v$$

where c is light velocity relative to absolute space and v is the absolute velocity of the observer. The component of the absolute velocity of the laboratory in the direction of Marinov's rotating shaft is given by

$$v = \frac{1}{2}(c_*^* - c_+^*)$$

where c_*^* is in the direction of v and c_+^* is in the opposite direction.

In 1974 Marinov found from this that the velocity of the solar system has magnitude and direction

$$v = 300 \pm 20 \text{ km / sec}, \quad \alpha = 13.3 \pm 0.3^\circ, \quad \delta = -20 \pm 4^\circ$$

where α is the right ascension and δ is the declination.

The time for light to travel the length of the shaft (one way or the opposite) was measured by the small angle the shaft turned during the travel. This was in turn measured by a difference in interference fringes. Marinov employed his ingenious electron bridge technique, to measure interference fringe differences of the order of 10^{-5} of a fringe. This extremely powerful experimental balancing technique yielded the most accurate values ever obtained for the velocity of light in a moving medium.

But many did not understand Marinov's "coupled mirrors" experiment, so in 1980 he decided to revise the experiment to involve no mirrors at all! He mounted two toothed wheels on the rotating shaft, one at either end. The angle the shaft rotated during the time light traveled down the rotating shaft was then measured by the amount of light surviving both sets of teeth. Using his electronic bridge to compare light passing down the shaft in opposite directions for intensity (as measured by photo diodes), he could again detect fractional intensity differences of the order of 10^{-5} , and again obtain the absolute velocity for the solar system, although with somewhat less accuracy [2].

Marinov was born in Sofia, Bulgaria, to a wealthy intellectual family. His father was a diplomat for Bulgaria in Prague. Stefan thus learned the value of knowing languages. He became fluent in German, Bulgarian, Russian, French, Italian, Chechian, Serbo-Croatian, and English. He completed university studies in Sofia, and in 1960 became employed by the Physics Institute of the Bulgarian Academy of Science.

He had three great passions in life:

- 1) To make physics the empirical science it should be, and publicize empirical truths, such as the existence of absolute space.
- 2) To make the world a better place to live, free of war, repression, intolerance, and violations of human rights.
- 3) To perfect a perpetual motion machine.

Marinov's interest in human rights made him an active critic of the Bulgarian Communist regime. In an attempt to silence him, the government had Marinov arrested and incarcerated in a psychiatric clinic for 1966/67. His scientific papers and correspondence were seized and burned. But following his "cure", he returned to physics.

After his 1974 "coupled mirrors" experiment, Marinov became a champion for absolute space-time and a strong opponent of special relativity. Since the physics establishment in the East was even more rigid and defended orthodoxy with even greater fanaticism than that in the West, Marinov's heresy was punished by a second arrest and incarceration in a psychiatric clinic, plus firing from his job. After 1974 he was forbidden to seek employment; he had to survive on a subsistence pension.

Nevertheless, in 1976 Marinov began organizing an International Conference on absolute space-time, to be held in 1977 in Varna, Bulgaria. I saw a brief advertisement for this Conference, and being in the process of studying space-time for the first time, I was most interested in attending. This was the first time I became aware of Marinov's existence.

Twenty days before the Conference was to convene, Marinov was again arrested and incarcerated in the psychiatric clinic. To obtain his freedom, he was forced to cancel the Conference. As a reason for the cancellation, it was suggested that Marinov should say that he had broken his leg. But Marinov, fearing that the secret police might choose to preserve appearances, suggested instead that fear of an imminent earthquake could be used as the reason. The Bulgarian Academy of Science agreed to this, and the world scientific community, recognizing the absurdity of such a reason, was thereby informed that Marinov had been forced to cancel the Conference.

Being allowed to leave, and fearing further persecution and imprisonment if he stayed, Marinov fled Bulgaria in 1976. Without a valid passport, he was a man without a country. He became a "professional" international agitator for human rights, democracy, world peace, and other worthwhile moral movements. He wrote numerous letters to heads of state and influential people, seeking their support for whatever cause he was championing. He joined demonstrations for different causes in different countries, where he was often beaten and arrested. He once attracted a large amount of publicity by threatening to burn

himself before the Soviet embassy in Paris unless US President Carter intervened to have Russian dissident Yuriy Orlov released from a Soviet prison - a threat that he constructively parlayed into the Soviet ambassador promising at the last minute to transmit Marinov's plea to Soviet Andropov personally.

Marinov's agitation for human rights was very effective: governments in both East and West feared him. In the East he was seen as a dangerous anti-Communist dissident; in the West he was seen as a dangerous Communist activist. In the West, where one can enjoy freedom without having to demonstrate or agitate, his activities may seem strange, unreal, and senseless. But, considering the suppression and persecution he had to suffer personally in Bulgaria, his role as an agitator is understandable.

Being unloved by governments for his protest activities, and having no valid passport, Marinov was expelled from Czechoslovakia, from France, and from Belgium, where he had to leave his bride behind, then from the US, and from Italy. In 1980 he ended up in Graz, Austria, where he lived more-or-less illegally for three years until he was finally granted permanent residency. He remained in Graz for the rest of his life. In 1981 the Bulgarian government removed his Bulgarian citizenship and confiscated his house and all his property in Sofia.

I first met Marinov in person around 1980, when he showed up unexpectedly at my door in Berlin, where I lived with my family. Prof. Panos Pappas, a dissident Greek physicist, was with him. They had been at an international conference only a few hundred kilometers away, and had decided to take the opportunity to drop by and see me. They stayed overnight with us, so we had the opportunity to discuss physics most of the night.

Upon arriving in Austria, to survive Marinov had to accept the job of stable boy at the Niederschökel bei Graz. He retained this job for eight years. With my family I once visited him where he lived, over the stable. We all slept in sleeping bags on the floor. In the morning, I watched him shovel out the horse manure, without volunteering my help. He was cheerful and happy despite this hard and unpleasant job.

Over the years, Marinov and I met often at international conferences. The last was at Perugia, Italy, in the fall of 1996. At the time, he was the same charming, alert, intelligent, considerate, vigorous, interesting Marinov.

He finally managed to convene that conference on absolute space-time, at Genoa in July of 1982. It was a most rewarding conference; Pappas presented his experiments revealing the correctness of Ampère's original force law and the failure of the Biot-Savart law. The conference took place during the hottest days ever recorded in North Italy. There was a bomb scare. We had to leave the air-conditioned building for a hot couple of hours outside, while the police searched for the bomb. We joked that some true-believer in special relativity must have laid the bomb. Considering the fanaticism and the drastic measures employed by the orthodox physics establishment, the joke felt not so far-fetched.

Addressing the First World Congress on Science and Religion, at Rome in 1979, Marinov said: "When the experiment speaks, gods keep silent." And he also said: "Those in the establishment can slam the doors of journals, of the institutes, of the congresses, because in science, as in politics, everybody is afraid

to lose his power; but all of these efforts are efforts of dwarves - the experiment is that which decides."

But he worked unsuccessfully for many years trying to perfect a perpetual motion machine. He diligently built numerous carefully and beautifully constructed motors, generators, and other devices. He was a genius in his laboratory and with his hands, but he never managed to attain perpetual motion. He always needed a little better condenser, or a little larger coil, or a little more money to buy what was really needed. He never gave up hope.

Despite his passion for empirical truth, Marinov clung to the Biot-Savart law; apparently because in violating Newton's third law, it also permits the violation of conservation of energy. Using the Biot-Savart law, he constructed many devices that were supposed to yield energy from nothing. Needless to say, these devices did not work as expected because the Biot-Savart law is not right.

Stefan Marinov had an infectious enthusiasm, cheerfulness, and charm that made him loved by those fortunately enough to know him personally. His example in continuing to strive toward worthwhile goals no matter what adversities might stand in the way was inspiring. No matter how much he was persecuted and harassed by governments and police, no matter how he was forced to accept the most menial work and live in poverty, no matter how much the orthodox physics establishment was against him, he persisted and accomplished a huge amount in his one lifetime.

He must have published at least fifty papers in refereed physics journals during his life. But this was only a small percent of the numerous papers that were rejected. To circumvent the bottle-neck of journal publication, he resorted to publishing his own books and a journal (East-West International Publishers, Graz, Austria). His first book **Eppur Si Muove** (1977) is probably his best known. He published eight volumes of his **Thorny Way of Truth** (1982-1990). In 1993 he published his **Divine Electromagnetism**. In 1992 he had commenced issuing his quarterly journal *Deutsche Physik*, presenting primarily his own ideas, research and correspondence, with occasional contributions from others. The last issue was that of April-June 1997.

The Marinov material makes interesting reading for its reproduction of his correspondence, newspaper clippings, and documents relevant to his life and his attempts to have papers accepted for publication. The material reveals in a very striking way the failure of the journal system to perform as it should. This author can supply photocopies to anyone who cannot obtain the material elsewhere.

References

- [1] S. Marinov, "The Velocity of Light Is Direction-Dependent", *Czechoslovakian Journal of Physics* B24, 965-970 (1974); "Measurement of the Laboratory's Absolute velocity", *General Relativity and Gravitation* 12, 57-66 (1980).
- [2] S. Marinov, *Speculation in Science and Technology* 3, 57 (1980).

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