

Sotirios Persides (1940-2024)

This is a final goodbye - in a rather Doric way, as Sotirios Persides himself would have wished - to Sotirios Persides who passed away on Monday, September 2, 2024. A goodbye to my underground studies teacher at the Physics Department of the Aristotle's University of Thessaloniki (AUTH), with whom I followed a similar course of postgraduate studies at the University of Chicago in the USA, and later a colleague in astrophysics in Greek Universities. A goodbye to the accomplished publisher of particularly useful University books,



a unique family man, scientist, researcher, writer and a dignified and bright person above all, to whom many of us owe our lives.

A goodbye altogether by all to the especially dear in the University community Sotiris Persides.

I guess, a goodbye in the same spirit would have been written to Sotiris by the Indo-American Nobel laureate in Physics for his theoretical discovery of the existence of the famous black holes, Subrahmanyan Chandrasekhar. Chandra, as he was called by us his colleagues, was the PhD supervisor of Sotiris's doctoral thesis at the University of Chicago and he always spoke to me with admiration and love for Sotiris, calling him "his child". Chandra had even visited Persides many times in Greece at home and also at the Hospital in America, during one of his complicated operations, after the incident and injury that I refer to below.

We all researchers want to bid a scientific final farewell to the single author of many original research papers in international journals - Sotiris was the sole author in almost all of his research publications following the example of his teacher S. Chandrasekhar. Sotirios Persides already from his undergraduate studies at the National Technical University of Athens (EMP), he was captured and dealt with the two major revolutions in Physics of the 20th century, Quantum Physics - for which he had written a small booklet already as an undergraduate student at the EMP - and Einstein's General Theory of Relativity, about which wrote later a textbook at the AUTH.

The topic of his PhD thesis (1970) was *Asymptotically flat spaces in asymptotically null-spherical coordinates* in the context of the General Theory of Relativity. At that time (1970) the relevant observations for the geometry of the Universe did not yet exist. But today, half a century later, observations indicate just such a Euclidean geometry for our unexpectedly strange Universe which seems to be dominated by *dark matter* and *dark energy*!

A subsequent (1972) work of Sotirios Persides deals with the study of *gravitational waves from the center of our Galaxy*. Back then, gravitational waves had not been detected. Even Einstein thought that we wouldn't be able ever to detect them. Today, however, these "whispers of the Universe" tell us about terrifying collisions of black holes and neutron stars! Again, Sotirios Persides was ahead of his time...

One of his later papers (1974) refer to *black holes and the structure of space-time* around them. Back then, black holes hadn't been observed and many believed they didn't even exist. Recently, however, the giant black hole that lurks in the center of our Galaxy and also in another distant galaxy (M87) has been observed. In fact, the Nobel Prize in Physics (2020) was given precisely for these observations. Again Sotirios Persides was ahead of his time ...

Sotiris later on, after completing his PhD at the University of Chicago, continued as a postdoctoral fellow at the University of Texas at Austin, before finally moving to the Department of Physics of the Aristotle's University of Thessaloniki, encouraged for this move by Professor Georgios Contopoulos.

We want to say goodbye to our own Sotiris, who literally saved the lives of many professors and students, in the tragic events that resulted in the murders of Vassilis Xanthopoulos and Stefanos Pneumatikos, on November 27, 1990 at the University of Crete in Heraklion, Crete. Back then, a psychologically disturbed graduate student suddenly bursted armed into the class room during a special class on the use of the computer to solve analytically complex differential equation, as in the General Theory of Relativity, and needlessly took the lives of two charismatic and wonderful professors and scientists of the University of Crete, Vassilis Xanthopoulos and Stefanos Pneumatikos. Then, Sotiris with lightning speed tried to repel the murderer, but in doing so, he sacrificed his health. The shots that passed by me and my wife, who were attending with other colleagues and students this pioneering course of Vassilis Xanthopoulos, a favorite student of Sotiris Persidis and Chandrasekhar, still ring in my ears. Seconds after the shots, I saw Sotiris lying in the floor within a pool of blood, as the bullet had found him in the axillary artery. We took him to the neighboring hospital with zero blood pressure. Ultimately his life was saved, but the price of this self-sacrificing act was to lose the mobility of his right hand fingers. Long hours of operations followed in Greece and America, some lasting 3 days, at his own expense, with only the support of his patient and steadfast inflexible wife Sofi and his children.

Sotiris was characterized - apart from his diamond-like character, his hard work and decisiveness - above all by high morals and dignity, with which he uncomplainingly suffered all the subsequent health problems of the previous tragic events, for 33 consecutive years, without ever making a complaining comment, for about anyone. And this despite the fact that he was not properly honored and did not receive any moral recognition for his great self-sacrificing contribution and the subsequent many and complex medical operations and adventures of his health.

Let's say goodbye to the book author Sotiris Persides, who patiently trained his left hand after 1990 to be able to type on a computer and to write and publish through his publishing company ESPI many pioneering books, such as the world's original digital way of learning Math calculus, or, the translation of the American Schaum Series, (Schaum's Outline Series), with the best science books for students, teachers and scientists, in Mathematics, Physics, Chemistry, Biology, Popular Science, etc. I highlight the Greek translation of the book by Chandrasekhar: *Truth and Beauty, Aesthetics and Motivation in Science*.

Between surgeries in Greece and abroad, with only one hand functional, he found the strength and time to write books, such as *the University of the Future* (1998),

talking about the educational revolution of the internet and artificial intelligence that was coming from then. He writes in the Preface of this book: "The central message of this book is pleasant. The historians of the future will refer to the period around 2000 AD as the time when machines started to speak and become a tool for information and education of the mankind. This is how a new society is formed, where the percentage of educated people will be much higher than today. Our future will be better if we prepare it with more knowledge, judgment and logic. Our future depends more and more on ourselves."

We above all say goodbye to *Sotiris Persides of excellence*, whose value system was really envied by us younger people. I mention the following characteristic of his non-negotiable meritocracy and ethics: being an associate professor at the AUTH, he refused to be promoted to the position of full professor in the Physics Department of the AUTH by a government law, requesting that his advancement at the University should be made through an objective and open election. This had the result of losing his position and salary when he refused to apply for promotion within the statutory time limits. This forced the University to later announce a new teaching position with open nominations, a position that Sotiris eventually took, of course with some delay and inevitable financial loss, i.e., with subsequent difficulties to finance the well being and growth of their two children..!

We say goodbye to Sotiris who, always facing life with a disarming smile, took care to arrange many details before his departure from this vain world. It is typical that he commissioned me to transfer the books of Byzantine music of his father, who had arrived to Greece without his parents from Sinasos (who were killed by the Ottoman Turks), in the center of Asia Minor in Cappadocia, the preeminent region of Digenis Akritas, which was called "Oasis in the desert, Star in the dark, Athens in Asia Minor", the land area of the great Cappadocian Fathers of Orthodoxy (or Cappadocian philosophers): Basil the Great, bishop of Caesarea (330- 379); Basil's brother Gregory of Nyssa, bishop of Nyssa (c. 335-post 394); and a close friend, Gregory Nazianzus, Patriarch of Constantinople (c. 330-c. 390). They significantly advanced the development of early Christian theology and are highly respected as saints in both Western and Eastern churches. Sotiris' father was a cantor in the Holy Orthodox Church of Evangelistria in Piraeus. The books will be exhibited in the Byzantine Museum which will be housed in the auxiliary facilities of the newly built pericallous Church and adjacent monastery of St. Paisios in Pallini. This complex of Church/Monastery, which is almost completed and will be inaugurated in a few months, is an initiative of the well known physics and theology educated Metropolitan of Mesogaia & Lavreotiki Nikolaos, an excellent student of Sotiris in the Physics Department of AUTH, who was taught Einstein 's General Theory of Relativity from the courses of Sotiris and his small related book.

I will close by paraphrasing the Preface written by Sotiris Persides himself in the Greek edition of Chandrasekhar's book, *Truth and Beauty, Aesthetics and Motivation in Science* [in square brackets my paraphrase/additions]: «The progress of the human race has always been identified with the increase of knowledge and the improvement of civilization. More than politicians and great leaders, scientists have contributed with irreversible processes to our

development closer to natural laws, closer to God, by discovering the rules of our Universe. Science and its daughter Technology shape our days and our destiny». [Sotiris as well as his teacher] «Chandrasekhar [and also the prematurely assassinated professor Vassilis Xanthopoulos] served science for more than half a century, with consistency and faith, with hard work, with humility and devotion, as monks serve in a monastery». [Sotiris, as well as Vassilis and «Chandra in their careers looked many times deep into the very soul and the meaning of life, with a continuously dignified struggle, a unique morality and beauty, despite the insurmountable difficulties that were in store for them».

Let us remember all of us Sotiris, together with his devoted wife Sofi and their children Alexandros and Manti, his many students, colleagues and friends, who had the good fortune to cross his path in life, so that his example illuminates our own paths of life too.

May the memory of Professor Sotirios Persides be eternal!

[Kanaris Tsinganos, Emeritus Professor of Astrophysics, University of Athens].