

**MEMORIAL RESOLUTION OF THE FACULTY
OF THE UNIVERSITY OF WISCONSIN-MADISON**

ON THE DEATH OF PROFESSOR EMERITUS WILLIAM L. KRAUSHAAR

William L. Kraushaar, professor emeritus of physics, died in Portland, Maine on March 21, 2008, a few days before his 88th birthday. Bill was the leading pioneer of gamma-ray astronomy. He brought high energy astrophysics to Wisconsin and, together with Bob Bless and Art Code of the astronomy department, made Madison a major center of space-based astrophysics. He retired from the faculty in 1985 but continued to work actively on his Diffuse X-ray Spectrometer experiment for the Space Shuttle until he moved to Maine in 1999.

Bill was born in Newark and grew up in Maplewood, NJ. He graduated from Lafayette College in Easton, Pennsylvania in 1942 and spent the war years working on the development and testing of the proximity fuse at the National Bureau of Standards. He then entered graduate school at Cornell University as a student of Ken Greisen, using cosmic rays to study muon physics.

Bill went to M.I.T. after completing his PhD in 1949, working his way up from postdoc to full professor. He first continued in particle physics, using the new electron synchrotron and his expertise with designing fast electronics to obtain one of the first measurements of the pion lifetime. Then he joined the group of Bruno Rossi, who had turned from particle physics to the astrophysics of cosmic rays, and worked on the design of a large cosmic ray air shower array. During its construction, Bill accepted a Fulbright Fellowship and spent 1954-55 at the Osaka City University in Japan. He assisted researchers there and at Osaka University on an underground cosmic ray muon experiment, forging ties that led to a long-time association with Japanese astrophysics. Even today, the collaboration with Japan forms an important part of Wisconsin research in X-ray astronomy.

Returning to M.I.T., Bill completed work on the air shower array, then turned his attention to the problem of cosmic gamma rays. After unsuccessful balloon-borne experiments by himself and others, he realized that the faint signal could only be detected by getting entirely free of the Earth's atmosphere. He proposed this to the fledgling N.A.S.A., and in April 1961 Explorer 11 was launched successfully as the very first astronomical observatory in orbit. He began work shortly thereafter on a more sophisticated gamma ray telescope flown on the OSO 3 satellite. These experiments paved the way for a succession of bigger and better instruments that have made the study of gamma rays an important part of astrophysics.

In 1965 Bill was recruited by Wisconsin to establish a space physics group in the physics department. He used the opportunity to shift his efforts to the new field of X-ray astronomy. His first suborbital rocket experiments were just looking to see what was there to be measured and understood. The surprise was that there was a mysterious faint glow of low energy X-rays everywhere one looked. He established that a large fraction of these low-energy X rays originated in our own galaxy, but this was so contrary to contemporary ideas that it was not really accepted until a young theorist Bill had attracted to Madison showed that this could be a natural outcome of the heating of interstellar material by supernova explosions. One consequence was that the solar system seemed to be surrounded by a huge but unsuspected bubble of million-degree gas. This fit in well with new work in space-based ultraviolet observations pioneered in the astronomy department and began a revolution in how the space between stars is perceived, with Madison a center of activity in this newly important area. Bill went on to fly more than 25 sounding rocket experiments and four additional orbiting instruments. He supervised the PhD research of 18 graduate students, more than half of whom remain active in these fields he kindled.

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But Bill is best remembered by his family, friends, and colleagues for the kind of man he was and how this informed everything he did, including his scientific work. A series of letters from major international figures recommending Bill for his Max Mason professorship all reiterated this theme, but one said it best:

It is probably unnecessary for me to recite his achievements. But I want especially to point out the unassuming, non-aggressive, charitable, diplomatic and self-effacing manner with which these achievements were made. Others do such things by completely self-centered, driving ambition, but not Bill: his concern is always to give credit to others, not to claim it for himself. I have in my memory a small treasure house containing remembrances of people whom I regard as fine role models of scientists who are good in every way. Bill Kraushaar is among the small number of occupants.

Bill's broad view of science and unselfish outlook made his opinion highly sought after, and he served on innumerable national advisory committees. He was a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and a fellow of the American Physical Society. He lives on in our memories as a wonderful example of what we all could strive to be. We miss his presence.

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