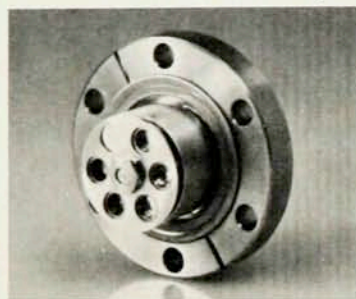


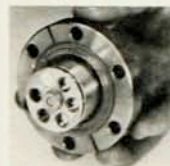
XUV-007's Peak Performance Leaves Silicon Diodes Down in the Valley



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obituaries

Andrew W. Sunyar

The death of Andrew W. Sunyar, senior physicist at Brookhaven National Laboratory, on 22 May 1986, ended a distinguished career in experimental nuclear physics.

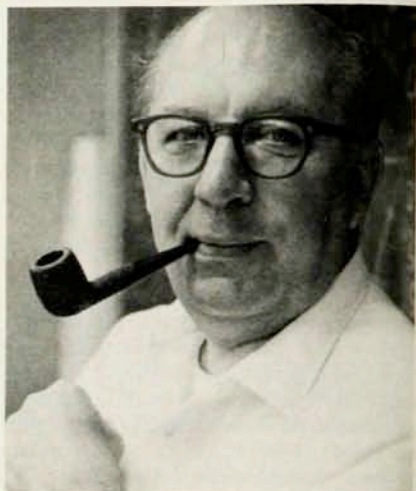
Sunyar was born in 1920 in Michigan and graduated from Albion College in 1942. His subsequent graduate study at the University of Illinois was interrupted by his service during World War II as an officer in the US Navy. Following the war he returned to Illinois and completed his PhD in physics (1949). He immediately came to Brookhaven, where he remained an active scientist until his recent illness and was for many years coleader of the nuclear structure group, and then leader of the tandem Van de Graaff research group. It was during Sunyar's leadership that the tandem research group attained worldwide recognition for its research in heavy ion physics.

Throughout his career, Sunyar used a variety of new experimental techniques to explore a large number of important problems in nuclear physics, many of which had relevance to fundamental concerns of the whole of physics.

In the early 1950s Sunyar recognized the importance of transition rates for identifying and classifying nuclear states. He developed one of the fastest coincidence systems and measured many subnanosecond nuclear lifetimes. It is difficult to name a nuclear isomer that could be made with the reactors and cyclotrons of the times that Sunyar did not study. His careful and complex examination of the systematics of nuclear isomers led to a definitive classification and an early verification of the modern shell model in a notable paper he wrote with Maurice Goldhaber.

With the discovery of the nonconservation of parity, Sunyar, together with Goldhaber and Lee Grodzins, pioneered measurements of helicities of photons and electrons to determine the nature of the beta decay interaction. This work culminated in the classic experiment that determined the helicity of the neutrino.

Realizing the significance of the Mössbauer effect, Sunyar and his co-workers were among the first to apply it to the measurement of nuclear and material properties. Sunyar and Ottmar Kistner discovered the nuclear isomer shift and were the first to use the Mössbauer effect to measure the nuclear quadrupole interaction.



SUNYAR

Sunyar and his coworkers were among the first exploiters of the properties of heavy-ion beams for the study of important issues of nuclear structure at high spin. Perhaps the best known example of this recent work was the discovery of multiple collective bands extending to high spin.

Sunyar was a member of the advisory committee to the UNISOR facility at Oak Ridge National Laboratory. For many years he was associate editor of *Atomic and Nuclear Data Tables*.

Those who interacted with Sunyar knew him both as the person to ask whether an idea or experiment was worth pursuing and as the person to seek out for a solution to some technical difficulty. He always had time to listen, to learn, to teach and explain; his breadth of knowledge and his taste in physics were a valuable asset to all of us at Brookhaven. His professional career spanned the transformation of nuclear physics from the world of small scale science to the modern era of large interactive teams. He participated and acted as a leader in both, but he loved best the small scale physics that he could carry through in his own laboratory. Sunyar never ceased to be fascinated by physics, to be delighted by its intricate details and to marvel at its unifying structure. His accomplishments will remain valuable contributions to that structure.

The authors wish to thank Edward Derma-teosian, Sidney Kahana and Arthur Z. Schwarschild for their thoughtful contributions to this obituary.

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