

# Albert Ghiorso 1915-2010

Albert Ghiorso, a renowned nuclear scientist who co-discovered a dozen chemical elements heavier than uranium, died Dec. 26 at his home. The Berkeley resident was 95.

In a fledgling "radiation lab" on the UC Berkeley campus just before World War II, physicists led by Edwin McMillan and Glenn Seaborg produced the first known chemical elements heavier than uranium - to be known as neptunium and plutonium.

But then came Mr. Ghiorso, a young engineer and inventor, who with his colleagues working in the same lab would discover more of those elements than any other team in the world.

They number a dozen, and the list bears historic names in the Periodic Table of the Elements:

Americium, Curium, Berkelium, Californium, Einsteinium, Fermium, Mendelevium, Nobelium, Lawrencium, Rutherfordium, Dubnium and finally Seaborgium.

Mr. Ghiorso was born in Vallejo, grew up in Alameda, and as a teenager was already building radio circuits. He graduated from UC Berkeley as an electrical engineer in 1937, and his invention of a commercial Geiger counter quickly attracted Seaborg's attention at Berkeley.

When the prewar quest for the atom bomb began, Seaborg moved to Chicago, and he invited Mr. Ghiorso to join him to work on the Manhattan Project. After the war, they returned to the Berkeley lab, where Mr. Ghiorso and his colleagues used a cyclotron to smash atoms together and produce fast-disappearing heavy elements.

In the 1950s, Mr. Ghiorso led a team that designed and built the radiation laboratory's heavy ion accelerator, the Hilac, and used it to discover five more elements, including Seaborgium in 1974.

Discoveries like these demanded increasingly sophisticated experimental machines to create the new elements and equally complex instruments to detect their fleeting radiation signals. Mr. Ghiorso led their development. He also conceived combining the Hilac with the radiation lab's Bevatron to devise the Bevalac, an instrument whose high-energy ion beam was long used to treat hundreds of cancer patients.



"Al Ghiorso became a legend and a metaphor for inspired nuclear research," said Robert W. Schmieder of Walnut Creek, a former colleague in Mr. Ghiorso's Berkeley group who is writing a biography of the research leader.

"Every physicist and chemist knew the significance of his work, and those fortunate enough to know him personally were in awe of his brilliance, his ability to get results when others discounted his chances, and his magical ability to inspire others to devote their careers to the quest," Schmieder said. "All this was done with a quiet, modest personality that belied his power and endeared him to his colleagues."

Jose Alonso, a retired senior scientist at the Berkeley lab who worked for Mr. Ghiorso as a young postdoctoral fellow, recalled that "when discovery of a new element is based on seeing just a few atoms, Al's extremely careful and methodical experimental techniques, and his scientific integrity, played huge roles in his success."

Besides his devotion to nuclear science, Mr. Ghiorso was an ardent bird observer. He invented a special flash for his camera to observe extremely rare and fast-moving birds. He also was a regular operagoer, an art collector, and active in many programs to interest young people in science.

His death from heart failure resulted from a minor fall just before Christmas at his home near the Berkeley campus, where he had lived for 60 years. His wife, Wilma (Belt) Ghiorso, died in 1995.

Mr. Ghiorso is survived by a son, William, an engineer at the Berkeley lab; and a daughter, Kristine Pixton, an artist and software designer in Vestal, N.Y.

Written by:

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