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**Alastair Cameron**  
**1925-2005**



While Canadian-born Alastair Cameron was a big star among his fellow astrophysicists, he might have been more appropriately labelled a "smash hit" with the general public.

These two words refer to Prof. Cameron's most famous postulation -- the moon-origin theory now colloquially known as the Big Splat.

In 1976, Prof. Cameron, then at Harvard University, put forward along with others the idea that, on a bright, sunny day some 4.5 billion years ago, a chunk of hot rock as big as Mars struck a glancing blow at a still unhardened Earth and knocked off a piece the size of a moon.

That lunar measurement was more than figurative, as Prof. Cameron argued that some of the chunk actually condensed and turned into the moon.

"Al took a great deal of pleasure in that science because it resolved a problem that had effectively gone unresolved for well over a 100 years. He effectively overturned three competing theories of the moon's origin and took the best of each and put them into a single theory that actually made sense," said Michael J. Drake, director of the Lunar and Planetary Observatory in Tucson, Ariz.

And, in a way, the image of a piece of a home planet knocked off by a collision with another object might apply to Prof. Cameron's scientific career, which started in Canada and, when derailed, reached full bloom in the United States.

Alastair Cameron was born in Winnipeg as the genuine offspring of Prairie history. His grandfather on his mother's side was Charles Napier Bell, who left Ontario as a teenager to become part of the expeditionary force that put down the Riel rebellion. Liking the Prairies, Mr. Bell stayed there, first living with natives and then helping them hunt buffalo for the construction crews building the Canadian Pacific Railway. He later became treasurer of the Winnipeg Grain Exchange.

Prof. Cameron's father was a Scottish chemist who, after immigrating to Canada, ended up as head of the biochemistry department of the University of Manitoba's medical school.

This latter connection led to such a heavily academic atmosphere around the Cameron house that Prof. Cameron would later write: "I was told at the age of 4 I addressed all men as 'Doctor,' " adding drolly, "clearly an early attempt at forming a hypothesis based on limited data."

He showed an early interest in science, especially space science. In 1940, he bet a high-school friend that men would land on the moon in less than 40 years. When the moon landing did occur, the friend sent him a cheque for \$25 that Prof. Cameron framed and put on his Harvard office wall.

After graduating in physics and mathematics at the University of Manitoba, he went to the University of Saskatchewan, which had recently installed Canada's first major particle accelerator. After graduation, he was recruited by Iowa State University, which had an even bigger accelerator, but he became disillusioned with the position when he realized that he wasn't going to be doing many experiments.

His boredom didn't last long after a chance reading of an article in a popular science publication about a new element found inside a star triggered an interest in stars and particle formations. "I knew zero astrophysics but decided on the spot to repair the omission rapidly," he would say later. So he bought a bunch of basic textbooks, subscribed to an astrophysics journal and taught himself a new career.

After doing some theoretical work on the subject, he moved back to Canada, to the Atomic Energy of Canada Ltd. project in Chalk River, Ont. There, he began work on the changes that occur in elements during thermonuclear reactions -- research that, when expanded to stars, eventually explained how elements heavier than helium and nitrogen formed in the superheated stellar insides.

While at Chalk River, he also began to make use of some of the first computers in Canada to do his calculations. Not only did this mean commandeering machines from the accounting department, which had bought them for its own use, but dealing with the new machines' mysterious and frequent glitches. To fix them, Prof. Cameron subsequently postulated three repair rules, the first of which was: "Give the machine a kick."

He also began to explore the question of how meteorites formed, again self-educating himself in a field about which he knew very little.

In 1959, he spent a year at the California Institute of Technology to immerse himself in a more purely astrophysical environment. This experience triggered interest in research aiming to understand the physical processes that occurred when solar systems formed around stars.

The Cal Tech fellowship suggested to him that he needed to switch workplaces -- a feeling that crystallized on returning to Chalk River. There, he was appointed to a panel to propose Canada's plans for space exploration. In response to what Washington saw as a space race with Moscow, the U.S. was planning to go to the moon and build space observatories. All Canada was willing to commit to was a few upper-atmosphere rockets. "That would hardly be an effort commensurate with the relative populations and economies of the two countries. I was terribly disgusted with the situation and decided my future lay south of the border," he wrote later.

After moving to the United States, Prof. Cameron was one of the first people hired at NASA's Goddard Institute for Space Studies in New York. He subsequently became extremely active in helping to form U.S. space policy and direction and spent a number of years as head of Harvard's astronomy department.

His early appreciation of the essential worth of computers for astrophysicists created a kind of technological template for the rest of his scientific life. In the 1970s, he arm-wrestled Harvard into buying a Unix computer for astronomy graduate students. "The reaction from the dean's office was, 'But graduate students always paid to have their theses typed; why would you be using department money to let them do it themselves,' " he dryly wrote about the resistance he faced.

While the need to obtain U.S. security clearance to work in the space program forced Prof. Cameron to become a U.S. citizen in the 1960s, he remained involved with Canada -- which he regularly visited -- and with Canadian politics. In the 1990s he actively supported the faculty and

staff at the University of Manitoba who were fighting to secure rights concerning tenure and academic freedom.

His stand became a *cause célèbre* in the Manitoba legislature after it was revealed that then premier Gary Filmon sent a letter to the president of Harvard asking him to curb the lobbying efforts of one of his "astrology" professors.

Prof. Cameron also remained a son of the Prairies, especially when it came to the sense of climate that growing up in the place known as "Winterpeg" engenders. Even after moving to Arizona, he would walk around in summer in 40-degree heat wearing a heavy, grey-knitted sweater. When asked why he bundled up, he responded: "You don't know how much I love the heat."

A quite, decorous and modest man, Prof. Cameron never really stopped working.

"He was still doing very first-rate science up until the end and, as we speak, his computers up in his office are still humming away," said Prof. Drake.

Alastair Graham Walter Cameron was born on June 21, 1925, in Winnipeg. He died in Tucson, Ariz., on Oct. 3, 2005, of a heart attack. He was 80. His wife, Elizabeth, predeceased him in 2001. He is survived by a sister, Janet Matthews; a niece, Valerie Matthers-Lemieux; her husband, Ron; and two nephews -- all of Winnipeg.

*Article from the Globe and Mail  
Written by Stephen Strauss*

*"Canadian-born scientist came up with the Big Splat theory of how the moon was formed"  
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*(Author's title given as of the time of writing)*