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Rebecca Anne Wood Elson

Rebecca Anne Wood Elson, an astronomer whose work significantly advanced our understanding of dense star clusters, died in Cambridge, England, on 19 May from non-Hodgkins lymphoma.

Born in Montreal on 2 January 1960, Becky attended Smith College, from which she graduated in 1980. She went on to earn an MSc in physics from the University of British Columbia in 1982 and, in 1986, a PhD in astronomy from the University of Cambridge for work exploring globular clusters.

Returning from England, Becky took up a postdoctoral fellowship at the Institute of Advanced Study in Princeton, where she expected to work on the first data from the Hubble Space Telescope. The Challenger accident in 1986 deferred those plans, although she continued to pursue her cluster research by obtaining extensive observations of the globular cluster system in our nearest neighbor galaxy, the Large Magellanic Cloud. During her first year at the institute, at the age of 26, she wrote a definitive article with Piet Hut and Shogo Inagaki on star clusters for *Annual Review of Astronomy and Astrophysics*.

In 1989, she became the youngest astronomer selected to serve on a committee of the US National Academy of Sciences' decennial survey of the field. That same year, she became a fellow of Radcliffe College's Bunting Institute, an interdisciplinary center for female scholars. She returned to the Institute of Astronomy in Cambridge in 1991 to join a group studying stellar popula-



REBECCA ANNE WOOD ELSON

tions with the Hubble Space Telescope.

Becky's work ranged from a search for stars in the outer halo of the Galaxy to regions of rapid star formation halfway across the universe. Using the Hubble Deep Field, she and her Cambridge colleagues set the strongest limits known on the contribution of normal stars to the mysterious halo of dark matter surrounding the Milky Way.

Her principal work, however, focused on globular clusters. These massive systems, each containing up to several million stars packed into a region of space no more than a hundred light-years across, provide the benchmark against which theories of self-gravitating systems and the initial distribution of stellar masses are tested. In the Milky Way, globular clusters are all very old, but in other galaxies such as the Magellanic Clouds, the clusters have ages ranging from less than several million to more than ten billion years, offering a series of snapshots of evolution in progress. Teasing information on the dynamic processes of mass segregation and cluster initial conditions from this static series of pictures was Becky's craft.

In 1994, she was the first to determine the structural parameters for globular clusters outside the galaxies that make up the Local Group, and produced a study of the most distant globular cluster system ever observed. Her determination of the Magellanic cluster age sequence remains a milestone in the field. By mapping the distribution of cluster binaries, studying stellar mass segregation, and obtaining the distribution of stellar luminosities to very faint magnitudes, she and her colleagues established fundamental connections between the distribution of individual stars and the dynamics of the clusters as a whole.

We Astronomers

We astronomers are nomads,
Merchants, circus people,
All the Earth our tent.

We are industrious.
We breed enthusiasms,
Honor our responsibility to awe.

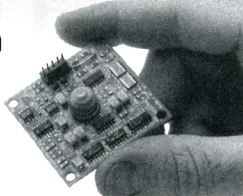
But the universe has moved a long
way off.
Sometimes, I confess,
Starlight seems too sharp,

And like the moon
I bend my face to the ground,
To the small patch where each foot
falls,

Before it falls,
And I forget to ask questions,
And only count things.

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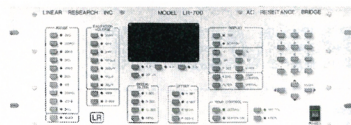
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Becky's talents extended far beyond astrophysics, ranging from soccer to poetry. She was a keen observer of herself and those around her, with an ability to share her observations with humor and gentle irony, as in the accompanying poem, which was published in 1997.

Writing in the 50th anniversary issue of *Sky and Telescope*, Becky quoted Robert Grant Aitken, the director of the Lick Observatory in 1930-35 on the "use" of astronomy: "to set free the mind of man. . . by giving him an ever-widening horizon, by revealing to him an ever more glorious Universe." Becky's scientific contributions helped significantly in widening our horizon, and her life made the universe just a bit more glorious.

**DAVID J. HELFAND
GERRY F. GILMORE**

*Institute of Astronomy
Cambridge, England*

Jeffrey Lannin

Jeffrey Lannin, a 23-year member of Pennsylvania State University's physics department, died at his home in State College, Pennsylvania, on 10 September 1997 after a yearlong bout with a malignant brain tumor.

Born in Brooklyn, New York, on 21 August 1940, Jeff earned a BS from Purdue University in 1962, an MS from the University of Illinois in 1964, and a PhD in materials science from Stanford University in 1971.

Jeff joined the Penn State physics faculty in 1976, after working at Lockheed Research Laboratory in Palo Alto, California (1967-68), in Manuel Cardona's group at the Max Planck Institute for Metals Research in Stuttgart, Germany (1971-74), and at Argonne National Laboratory in Illinois (1974-75).

Specializing in the spectroscopy of materials, Jeff exploited a wide range of experimental techniques—based on x-rays, electrons, neutrons, and photons—to probe the structures of a remarkably diverse range of phenomena, including crystalline and amorphous solids, liquid, clusters, thin films, and nanostructures. This variety of experimental approaches reflected his ability to focus on and probe the fundamental physics of a problem. Whatever material he studied, Jeff persistently sought to elucidate its microscopic structure and dynamics and to interpret them in terms of physical models, both theoretical and intuitive. Examples of Jeff's accomplishments are the first Raman scattering studies of liquid semiconductors, the most extensive and rich Raman spectra of amorphous solids, and the development and first use of the interference-enhanced Raman

method for amorphous metals.

One of Jeff's long-standing goals, which related to his research interests, was to promote and enhance Penn State's effort in the field of materials physics. To that end, he taught interdisciplinary courses geared to materials physics and encouraged interactions with other materials science programs on campus. He also lobbied relentlessly to create a strong formal program in materials physics that would ultimately grant advanced degrees. Though such a program does not exist yet at Penn State, his advocacy led in part to the creation in of the university's Center for Materials Physics, of which he was an enthusiastic supporter.

Jeff inculcated in his students not only an appreciation for careful and methodical experimentation, but also the need to prepare for the real world. He did so by encouraging them to develop both an understanding of relevant technology and the ability to communicate basic and applied knowledge. By their successes, the students (undergraduate, graduate, and postgraduate) who worked with Jeff provide irrefutable evidence of his excellence as a mentor.

Jeff was as committed to the education component of his profession as he was to his research. He was constantly involved in refining and developing innovative content and teaching methods, especially for introductory physics courses. He was dedicated to course and curriculum improvement on all levels of instruction.

Jeff's protracted illness and death were profound and moving experiences for those of us who attended him. In that period, we were amazed by his resilience and eagerness to maintain his commitment to his students and his research program. His courage and lack of self-indulgence in the face of his debilitating illness was something we can only admire and hope to emulate.

An exuberant person, Jeff was strongly committed to the welfare of those less fortunate. He spoke passionately and courageously about them and whatever else he believed in. A description of Jeff would be incomplete without mentioning his enjoyment of skiing, tennis, jazz, and philosophy, the pleasures of which he communicated unbidden. His presence will be sorely missed by all of us in the department and by the community of physicists who knew and admired him.

**MILTON W. COLE
PAUL H. CUTLER**

*Pennsylvania State University
University Park, Pennsylvania* ■