

**Bulletin of the AAS • Vol. 54, Issue 1 (Obituaries, News & Commentaries, Community Reports)**

# Michael Zeilik, II (1946–2022)

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**Published on:** Dec 15, 2022

**URL:** <https://baas.aas.org/pub/2022i100>

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Michael Zeilik, a well-known author of astronomy texts, passed away on Friday June 3, 2022. He was 75.



*Photo credit: Santa Fe New Mexican newspaper.*

Michael Zeilik II was born in Bridgeport Connecticut to Michael and Margaret (Sabo) Zeilik on September 26, 1946. He was raised in Stratford Connecticut, surrounded by family and excelled in academics, baseball and track. He had a passion for astronomy from a young age, and convinced his father to build him a telescope. His father was a Navy veteran and electrician working in construction, and his mother was a homemaker. His paternal grandparents lived next door and were born in Ukraine.

Zeilik attended Princeton University supported by Woodrow Wilson and National Science Foundation Fellowships, graduating with honors in 1968. He taught astronomy at Southern Connecticut State University while completing his Ph.D. at Harvard in 1975. His thesis was entitled “Infrared emission from galactic H II regions” under the advisement of Alexander Dalgarno. Zeilik accepted a position as assistant professor of astronomy at the University of New Mexico (UNM) in Albuquerque in 1975, becoming an associate professor in 1980 and was promoted to full professor in 1985.

Zeilik was a man of many interests and talents. His contributions to astronomy were numerous and can be divided into three categories: 1) multi-wavelength studies of H II regions and photometry of RS CVn eclipsing variables; 2) authoring textbooks and research in best teaching practices; and 3) archaeo-ethnoastronomy of early peoples of the southwestern US.

## Research

Zeilik’s observational research interests were in two rather different areas as mentioned in the above paragraph. His work on galactic H II regions was the outgrowth of his doctoral dissertation. His most-cited work in this area (with C. J. Lada) is “*Near-infrared and CO observations of W40 and W48*” [1] in which they found that

“the H II regions, consisting of compact infrared components, lie on the edge of neighboring molecular clouds. Dynamical evidence supports a ‘blister’ model for the development of the H II regions from their associated molecular clouds.”

It was proposed that star formation would take place at the shock front as an expanding H II region pushes into a molecular cloud. Another well-cited paper (with P. A. Heckert) is “*Polarimetry from 1 to 5  $\mu\text{m}$  of Compact Infrared Sources*” [2]. They did polarimetry of 38 compact IR sources in regions of massive star formation concluding that there are two different mechanisms causing polarization in these sources. One is grain alignment by the interstellar magnetic field, and the other is anisotropic scattering off a nonspherical dust cloud surrounding the IR source.

Starting about 1980, Zeilik turned his research attention to multi-color photometry of RS CVn and other short-period eclipsing systems. Much of his observing, aided by students, was done with the 61-cm telescope at UNM's Capilla Peak Observatory. The most-cited (n=200!) paper (with E. Budding) is "*An Analysis of the Light Curves of Short-Period RS Canum Venaticorum Stars: Starspots and Fundamental Properties*" [3]. They studied the out-of-eclipse light curves of eight systems attempting to model the distortion waves by dark spots of various sizes, longitudes and latitudes. They determined that the secondaries in this sample are main sequence stars and not subgiants. He was one of six compilers of the large "*A catalogue of chromospherically active binary stars*" [4] that included 168 RS CVn, BY Dra and other systems showing Ca II H and K emission. He and co-authors wrote at least 40 papers on these binary systems. Zeilik also wrote about improving the data collection and reduction methods at the Capilla Peak Observatory.

## Teaching and Textbook Writing

Anyone teaching college-level introductory astronomy around the turn of the millennium is probably aware of the name Michael Zeilik and had to decide whether to choose one of his texts. Michael had a passion for teaching and writing, excelling at both. He received numerous accolades for his work and was a frequent conference speaker on teaching science. He reviewed texts by other writers and responded to reviews of his own books. Michael authored three astronomy textbooks: *Astronomy: The Evolving Universe* (9 editions!), *Conceptual Astronomy*, and *Introduction to Astronomy & Astrophysics*. At one time, he was the bestselling astronomy textbook author in the world. UNM named him a Presidential Lecturer, the highest award for a faculty member, and in 1998 he was appointed a Research Fellow of the National Institute of Science Education. In 2002 he was awarded the Astronomy Education Prize by the American Astronomical Society.

An anecdote about his teaching is worth mentioning. Mr. Philip Casaus, Editor of *The Santa Fe New Mexican* wrote:

"He was one of my professors at the University of New Mexico. His final lecture in the semester I took his course was simply a tour de force and it brought a couple hundred college students to their feet. I've not seen anything like that before or since."

## Ethno-archeoastronomy

During the 1980's Zeilik devoted part of his time to study the astronomy practiced by early Pueblo Indians at several sites in New Mexico. He published 30 papers on this topic during that period in journals such as *Archeoastronomy*, *Southern Stars* (New Zealand Astronomical Society), *Science*, and the *Griffith Observer*. To make contributions in this specialized area required intimate knowledge of the culture of the native peoples and of work done by previous investigators, and Zeilik covered both very well. He was especially interested in the measurement accuracy of the rising Sun's horizon positions by the "Sun Priests" to determine times of solstices, dates of special feasts and the start of the planting season. His "Indian astronomy in the US

southwest: the Pueblo sky watch” [5] is a beautifully written and illustrated review of knowledge about the astronomy practiced by these early natives.

His professional memberships included International Astronomical Union (Commission 46), American Astronomical Society (education board), American Association of Physics Teachers (astronomy committee), and the Astronomical Society of the Pacific.

Upon retirement from UNM in 2004, Michael pursued his passion for creating and producing movies. Credits include [Surviving Cupid's Arrows](#) (2009) - Director, Writer and Producer; [Psyche Ascending](#) (2013) – Writer and Producer; [El Salón México](#) (2009) – Executive Producer; and the upcoming *Man of Many Colors* – Producer.

He enjoyed outdoor activities of all kinds and especially camping, hiking, skiing and river rafting.

He married Kimberly Lesser in August 1985. He is survived by her and their sons, Zack and Jeremy Zeilik. He loved his sons and was proud of their accomplishments and sense of adventure in the world. Michael was preceded in death by his parents Michael and Margaret Zeilik and his sister Pam (Zeilik) Lobel.

Material from the obituary published by [Santa Fe New Mexican from July 1-6, 2022](#) is gratefully acknowledged.

Additional material from [Zeilik's Prabook entry](#).

See also [Zeilik's AstroGen entry](#).

## References

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