THE END OF AN ERA: A. W. J. COUSINS 1903–2001

Thomas R. Williams
1750 Albans Road
Houston, Texas 77005-1704

M. Danie Overbeek
Box 212
Edenvale, Cape Province
South Africa

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Abstract

Variable star astronomy and the AAVSO lost a valuable colleague this year with the death of the distinguished South African astronomer A. W. J. Cousins at the age of 97.

1. Obituary

With the passing of Alan William James Cousins on May 11, 2001, at Cape Town, South Africa, the AAVSO lost a long-term member and friend. With a recommendation by South African AAVSO member Hendon Edgerton Houghton, Cousins joined the AAVSO in March 1938 while he was an amateur astronomer and variable star observer at Durban, South Africa. He remained a member for some time, contributing over 9,000 observations of southern variable stars to AAVSO archives in the following decade. In 1947, his interest in astronomy as an amateur ended when he accepted a position as a professional astronomer at the Royal Observatory at the Cape, but his support for amateurs in South Africa remained emphatic and sympathetic thereafter.

The oldest son of a distinguished family, Cousins was born on August 8,1903, at Anchor Bay, now a suburb of Cape Town. His father, Clarence Wilfred Cousins, was born in Madagascar and educated in Oxford, England, where he met Ethelwyn Edith Agnes Ruthven Murray (known to her family and friends as Winnie), daughter of Sir James A. H. Murray, President of the Philological Society and principal editor of the first edition of the *Oxford English Dictionary*. After graduation from Oxford, Clarence emigrated to South Africa, where in due course Winnie joined him. They married and raised three sons and a daughter. As a civil servant, Clarence Cousins was appointed Director of the South African Census, and eventually served as Secretary of Labor for South Africa.

When Alan Cousins was 11 years old, his father took an extended leave to return to Oxford with his family. It was during that year that Cousins was first interested in astronomy by his mother Winnie, who gave him a child's book titled *The Stars*. On their return to Pretoria, South Africa, Cousins attended the Pretoria Boy's High School where he built his first telescope (see Figure 1). His interest in variable star astronomy was ignited when he met Alexander William Roberts, the prominent South African amateur variable star observer and eclipsing binary theoretician, while the latter was a guest preacher at a local church. Roberts lost no time in pressing variable star observing on the young amateur when he learned of their common interest in astronomy. Cousins made his first variable star observations in 1920, undertaking a long-term unaided-eye study of the variability of the bright star l Carinae. This work led to his first scientific paper, which was published in *Monthly Notices of the Royal Astronomical Society* (MNRAS). In that 1924 paper (Vol. 84, page 620), Cousins tabulated maxima and minima for this star during the period 1920 through 1923, developed a light curve, subjected his data to harmonic analysis, and concluded that the 35+ day period of the star was slowly increasing, based on earlier reported work by Benjamin Apthorp Gould, Roberts, and Robert Thorburn Ayton Innes. The paper was a *tour-de-force* for the young amateur. During this period Roberts frequently encouraged Cousins to continue his observing in spite of intense pressures Cousins felt from his academic work and other distractions.

Figure 1. Alan Cousins in his early teens, proudly exhibiting the refracting telescope he made for himself. *Photograph courtesy the late Marie Peddle of Cape Town, South Africa.*

Cousins matriculated at the University of Witwatersrand where he excelled in electrical engineering, graduating with a B.Sc. (Eng) and the Vice-Chancellor's Medal as the best student in 1925. Following a year of apprenticeship at Parsons Engineering, Newcastle-upon-Tyne, England, he returned to South Africa as an engineer for the Electrical Supply Commission, working at power stations in Johannesburg, Durban, and Cape Town. In this period, Cousins' interest in astronomy waxed and waned as his vocation, marriage to Alison Ronaldson in 1935, and other diversions required his attention and energy. While stationed in Durban, Cousins' latent interest in astronomy was awakened and strengthened when he gained access to the large telescope of the old Natal Observatory. From 1937 on, he was an active participant in the activities of the Natal Centre of the Astronomical Society of South Africa (ASSA). Acting as Secretary of the Centre, he did much to stimulate local interest in astronomy by organizing visitor's nights. Cousins served as the president of ASSA for 1944–1945. In that capacity he was in frequent contact with R. H. Stoy and other professional astronomers at the Royal Observatory at the Cape.

By 1947, Cousins realized that his intense interest in astronomy justified a career change. At that fortuitous moment Stoy offered him a position as a professional astronomer at the Royal Observatory at the Cape. Cousins accepted this opportunity with relish, moved to Cape Town, took up his duties in the photometry section, and enrolled for graduate studies at the University of Cape Town. He earned his Ph.D. in astronomy from that institution in 1954.

Figure 2. After retiring in 1972, Cousins continued his active research programs. This photograph was taken at the SAAO 18-inch telescope in 1986 when Cousins was 83 years old! *This photograph originally appeared in the MNASSA in October 1986 and is used courtesy C. D. Laney, SAAO.*

Cousins' entire professional career was devoted to refining the practice of stellar photometry, a field in which his contributions to technology and practice are as important as his prodigious record of precise photometric measurements. The entire system of photometric standard stars in the southern hemisphere owes much to Cousins' determined efforts as an observer. In addition, his standardization of the multi-wavelength photometric system resulted in adoption of the Cousins filters as a standard for modern photometry. This was, however, a triumph of "low-tech" work in that Cousins' measurements were recorded on a 1940s Brown pen recorder fed by a DC amplifier. His noise levels were apparently low enough that a straight line drawn through the "grass" at the top of a curve would suffice for measurement purposes. Cousins claimed that anomalies of transparency, etc. were best detected by visual inspection of the data thus derived. In an age of increasing sophistication involving digital equipment and elaborate computer programs, Cousins illustrated well the adage that a thorough understanding of the principles involved was worth any amount of "hi-tech." He served as the President of IAU Commission 25 (Stellar Photometry) from 1967 to 1970. In recognition of his work in photometry, in 1963 Cousins was awarded the Gill Medal, highest honor of the ASSA. The Royal Astronomical Society conferred its Jackson-Gwilt Medal on Cousins in 1971 in recognition of his substantial services to amateur as well as professional astronomy.

As an individual, Cousins exhibited a rather timid, self-effacing manner. He could often be seen hovering around the outskirts of a group at the morning observatory staff teas. He preferred to buttonhole individuals, rather in the manner of the Ancient Mariner, and hold forth on one or another aspect of his beloved photometry rather than participate in the give and take of group discussions. However, he was anything but timid when it came to his work. If an editor got a detail of one of his papers wrong, no matter how trivial, he would not rest but would move heaven and earth to rectify the matter. He was an absolute stickler for accuracy.

Although he officially retired from the observatory now known as the South African Astronomical Observatory (SAAO) in 1972, Cousins continued his work there literally until the end of his life. Post-retirement accomplishments included his discovery that the bright star γ Doradus varies with two periods simultaneously. His discovery established that star as the prototype of an entire new class of variable stars. Cousins' last scientific article appeared in the May 11, 2001, issue of MNRAS, coincidentally the day of his death.

Perhaps the best way to convey the loss the South African community felt at Cousins' death is to quote from an obituary prepared by Dr. David Kilkenny of the SAAO:

> [Cousins] was a scholar and a gentleman. He was at the top of his scientific field for decades and whilst lesser scientists might have felt that they disappointed him by failing to meet the high standards he set for himself, he never showed that in any way. He was gentle, courteous, helpful, and generous of his time. He loved his family, his church, his work and his country. He will be sorely missed by all who knew him well.

Cousins was the last living astronomer who knew and worked with a coterie of distinguished South African amateur astronomers, and amateurs who turned professional, extending back to the previous century, including Roberts, Innes, Houghton, George Edmund Ensor, and Reginald Purdom DeKock. With Cousins' passing an important era in variable star astronomy has ended.

2. Acknowledgements

This obituary benefited significantly from the very helpful obituary written by Dr. Kilkenny and, importantly, from notes provided by the late Marie Peddle of Cape Town, South Africa. Ms. Peddle interviewed Cousins and provided those notes in 1986 in response to an inquiry about Cousins. We also gratefully acknowledge the assistance of Mrs. Ethleen Lastovica, SAAO Librarian, who searched out some factual data in addition to providing Dr. Kilkenny's obituary and comments on this obituary.

[Ed. note: Another era came to an end this year with the death of co-author M. Daniel Overbeek on July 19, 2001. Danie was a longtime member of the AAVSO, the Astronomical Society of Southern Africa, and the Royal Astronomical Society of New Zealand. His prolific, excellent observations of southern-hemisphere variable stars and solar phenomena form a lasting legacy. A tribute to Danie will appear in a future issue of JAAVSO.]