This Week's Citation Classic

NUMBER 17
APRIL 23, 1979

Allen C W. *Astrophysical Quantities.*
Canberra, Australia: Athlone Press, 1973 (1955) 310p.

The book presents essential data for all astrophysics and includes: notation, federal constants and units, atoms, spectra, radiation, earth, planets and satellites, interplanetary matter, sun, stars and their distribution, nebulae, interstellar space, clusters, galaxies, the universe. [The *SCI*® indicates that this book has been cited over 2,915 times since 1961.]

C.W. Allen
Australian National University
Mount Stromlo Observatory
Canberra, ACT, 2600, Australia

February 28, 1978

"*Astrophysical Quantities* (*A.Q.*) is a book of quantitative astrophysical information from cover to cover. The reason it is a citation classic must be that the book is well used by astronomers and astrophysicists who are constrained to cite the sources of their numerical data. Having run to three editions (1955, 1963, 1973), there is good evidence that the information it presents is really needed.

"In the busy postwar days of 1947 the Mount Stromlo Observatory astronomers, including myself, were trying to solve problems associated with the new solarradioastronomy. This was being rapidly developed in both England and Australia. We were deciding that the temperature of the corona was about a million degrees. We wanted to see how such a corona would influence the Earth's ionosphere. We tried to predict the nature of the coronal and chromospheric ultraviolet spectrum, which had never been seen. To do these things we needed all the modern information that was available. It was in this climate that I conceived the ideas of summarizing *all* astrophysical data in a readily useable form. I thought the result would fill one moderate sized book. My colleagues hinted that there might be better things I could do with my time. Perhaps there were, but my research did not appear to suffer. Four years later, as Perren Professor of Astronomy at the University of London, I had good opportunities of seeing the book through the press.

"Without doubt the success of *A.Q.* has been due to the care taken in selecting, processing, and presenting the data. The essence of all quantitative astrophysics has been compressed into the headings set out in the abstract. Moreover, although many new concepts have been introduced over the period of the three editions, it has not been necessary to make substantial changes to the array of chapters.

"Care was taken to avoid ambiguity in the symbolism. Also, the relation between each symbol, its numerical value, and the unit used has been set out in a consistent manner. The very large numbers, and the large likelihood of errors in some cases, required extensive use of decadic logarithmic values. To ease this situation the 'dex' expression (e.g., 10^{39} = 39.0 dex) has been introduced.

"Certainly the greatest difficulty in completing each edition has been to provide a satisfactory index. Every quantity in the book has a clear meaning which is described and usually symbolized without ambiguity. However, many quantities have no clear definitive name suitable for use in an index. Fortunately, nearly all the quantities have a logical situation within the sections of the book and can be readily located.

"The possible competitors of *A.Q.,* (*Smithsonian Physical Tables,* The Kaye and Laby *Physical and Chemical Constants, The LandoltBornstein Tables,* and *The International Critical Tables)* all have their place on the shelves, but are not as useful to the world of astrophysics. A.Q. gave great satisfaction to its author and actually stimulated some researchers.