

# This Week's Citation Classic®

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Endt P M & van der Leun C. Energy levels of  $A = 21 - 44$  nuclei (V).  
*Nucl. Phys. A* 214:1-625, 1973.  
[Fysisch Laboratorium, Rijksuniversiteit, Utrecht, The Netherlands]

The experimentally determined properties of energy levels of  $A = 21 - 44$  nuclei are compiled and evaluated with emphasis on nuclear spectroscopy. For each of the nuclides reviewed, the available information on excitation energies, spins, parities, isospins, lifetimes or widths, and observed decay is summarized in a master table. [The *SCI*® indicates that this paper has been cited in over 915 publications.]

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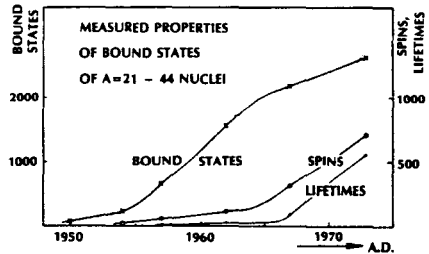
December 5, 1986

Some six years ago, the fourth edition of our review article on light nuclei was selected as a *Citation Classic*.<sup>1</sup> On that occasion we described the main characteristics of these articles, which also put the high citation score into perspective. These views and arguments are equally applicable to the fifth edition, but we would like to add one comment. Unlike many other modern compilations, the present review has been produced not with computers or calculators, but merely with slide rule and pencil. The current nostalgia for classical craftsmanship and grandpa's production style might be an additional reason for the high citation rate. Our review is indeed handmade.

A novelty of the fifth edition is the figure on the cover; not a girl, but a graph (see below). It is based on the data compiled in the five successive editions. It depicts how our knowledge of the structure of light nuclei has grown over the years. The three curves all start to rise more steeply at a particular point. These points represent breakthroughs that in all three cases can be related to an instrumental or technological development, such as the introduction of computers or semiconductor materials or the construction of magnetic spectrographs.

To say that scientific progress is essential for technological development is a platitude, but to say the reverse—that technological developments are just as essential for scientific progress—is less commonplace. Our simple cover graph highlights this too often underexposed side of Casimir's science-technology spiral.<sup>2</sup>

Finally, a rather risky undertaking: perhaps the first prediction of future *Citation Classics*! Unless the selection rules change, we expect—on the basis of a careful extrapolation—ISI to invite us to write commentaries about the next two editions<sup>3,4</sup> of our review in 1991 and 2001.



1. Endt P M & van der Leun C. Energy levels of  $Z = 11 - 21$  nuclei (IV). *Nucl. Phys. A* 105:1-488, 1967. (Cited 875 times.) [See also commentary in: *Contemporary classics in physical, chemical, and earth sciences*. Philadelphia: ISI Press, 1986. p. 51.]
2. Casimir H. The science-technology spiral. *Haphazard reality: half a century of science*. New York: Harper & Row, 1983. p. 294-313.
3. Endt P M & van der Leun C. Energy levels of  $A = 21 - 44$  nuclei (VI). *Nucl. Phys. A* 310:1-752, 1978. (Cited 680 times.)
4. ———. Energy levels of  $A = 21 - 44$  nuclei (VII). *Nucl. Phys. In press*.