

cally interesting molecules and measured various internal rotation barriers, supplementing his previous work on hindered rotation of trapped species in solids. Among his many other contributions, Flygare was able to demonstrate for the first time the presence of formamide in interstellar space. He also devised a new and rapid method, involving laser light scattering, for determining electrophoretic mobilities and diffusion constants of large molecules.

As a natural extension of his work in microwave transient effects and the measurement of  $T_1$  and  $T_2$ , Flygare developed a new spectroscopic tool: Combining the principles of pulsed microwave Fourier transform spectroscopy, a high-Q Fabry-Perot cavity and a high-pressure pulsed-nozzle source of molecules, he created a highly sensitive method of observing the direct rotational transitions of weak or transient molecular complexes. Very high resolution was also achieved. This, Flygare's most recent and perhaps most impressive contribution, has led to the assignment and structures of a large number of van der Waals molecules, and it facilitates high-resolution structural studies of radicals, ions and molecules in excited electronic states.

DAVID CHANDLER  
HARRY G. DRICKAMER  
*University of Illinois  
Urbana-Champaign*

## Robert M. Kalbach

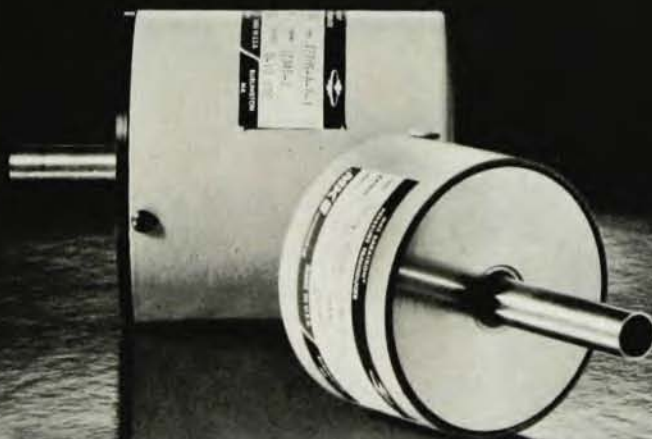
Robert M. Kalbach, professor of physics at the University of Arizona, died last year at the age of 49. a popular teacher and active in particle physics research. At the time of his death he was involved in experiments at Fermilab and CERN.

He was born in Seattle and did his undergraduate and graduate studies at the University of Washington. He received his doctorate there in 1957. At the University of Arizona he was a skilled and well-liked teacher for 22 years. The Robert M. Kalbach Memorial Physics Colloquia have been set up there in his honor.

His research was primarily in the field of hadronic interactions with measurements of elastic and inelastic scattering and total cross sections. He also carried out several searches for fractionally charged particles. Much of this work was carried out on sabbaticals and visits to Berkeley, Fermilab, CERN and the Max Planck Institute in Munich. Although he initially used photographic emulsion techniques, he changed to electronic detectors and became an expert in on-line computer techniques.

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