

books at Washington APS meetings, but this year is the first time that instruments will be exhibited as well. Some 75 companies will occupy 93 booths. Show hours are 9-5:30 Monday through Wednesday and 9-noon Thursday.

At the first general interest session Monday afternoon, astronaut Frank Borman will describe his Christmas Eve flight around the moon. Other panelists include Carroll O. Alley Jr of the University of Maryland and P.M. Muller of the Jet Propulsion Lab. Charles H. Townes will moderate.

Tuesday evening Luis W. Alvarez, APS president, will preside over the missile session. Hans A. Bethe, George Rathjens, Eugene P. Wigner and Donald Brennan will describe technical features of the ABM system and their own conclusions.

At a Wednesday afternoon general session, Alvarez will describe his attempts to map the inside of pyramids by charting cosmic-ray anomalies; Gregory Breit, who will receive the Bonner Prize, will discuss nucleon-nucleon scattering; and H. H. Barschall, retiring chairman of the nuclear physics division, will talk on MeV-neutron interactions with protons, deuterons and alpha particles.

The banquet will follow Wednesday evening. The scheduled speaker is Rep. Emilio Q. Daddario, chairman of the House Subcommittee on Science, Research and Development.

SPS Gives 9 Undergraduate Cash Awards for Research

Nine colleges and universities have received cash awards, ranging from \$205-360, for special undergraduate research in physics and astronomy. The Society of Physics Students, an American Institute of Physics organization, selected the winners. Awards were financed by a \$2500 Bendix Corp grant.

Recipients were Colgate University for radio telescope construction; Marshall University, West Virginia, for holographic recording of defects in silver chloride crystals; McMurry College, Texas, for a ground station to receive pictures from weather satellites; University of Richmond for work on the dependence of cerium metal's resistivity on temperature and crystalline structure at low temperature; Thomas More College,

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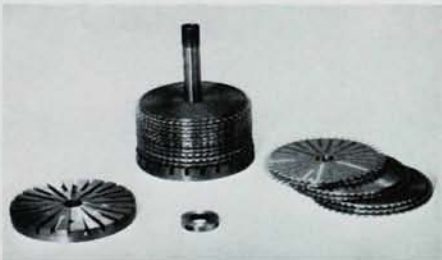
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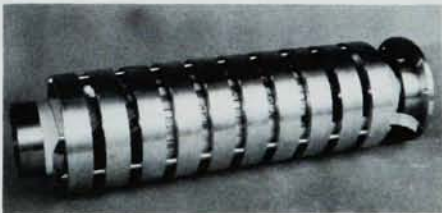
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Kentucky, for an acoustically modulated Mössbauer spectrometer; and Wisconsin State University for activities to increase physics enrollment.

AAPT Announces Winners of Apparatus Competition

Two MIT instructors have shared the \$600 first prize in the biennial apparatus competition of the American Association of Physics Teachers and the American Institute of Physics. Second- and third-prize awards went to teams from Pennsylvania State and Rutgers; \$100 special merit awards also were made.

Noel A. Clark and Joseph H. Lunacek won with their measurement of Brownian-motion fluctuations by scattering light from particles suspended in water. The spectrum of the photomultiplier detector's output gave information on the fluctuation and diffusion constant.

Apparatus showing the principles of electron and ion optics and vacuum physics won Bruce R.F. Kendall, H.M. Luther and Donald David the \$400 second prize.

Herman Y. Carr, R.T. Weidner and G.H. Muller demonstrated elastic or inelastic collisions of two objects from opposite directions for the third prize, \$200.

Receiving special merit awards were T.G. Owe Berg of T.G. Owe Berg, Inc; Richard E. Extermann of Copper Union; John M. Goodman of Harvey Mudd College; and Harold M. Waage of Princeton.

Humanists Dissect Morals, Models, Graphics of Science

A group of articulate "outsiders" probed the morality of physics, the philosophy of model-building and the cinematic techniques of explaining scientific concepts at a special American Association of Physics Teachers symposium. Ronald Geballe, incoming AAPT president, moderated talks by three nonscientists: novelist Kurt Vonnegut, architect Arthur Drexler and film-maker Charles Eames.

Vonnegut contended that regard for human life should lead scientists to withhold potentially dangerous information and refuse to work on weapons. But Drexler drew the most reaction from the audience with his assertion



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