

Random Walk

GAMCIT Update

GAMCIT, an instrument designed and built by a group of undergraduates to probe the mysterious origins of certain gamma-ray bursts (*E&S*, Spring '94), has gotten the final go-ahead from NASA and will fly on the space shuttle *Endeavour* on July 20. This is a "hard" launch date, in NASA parlance, because an instrument called SPARTAN, which is also on that flight, is supposed to observe the sun at the same time that the *Ulysses* spacecraft passes over the north solar pole on July 31. "This launch won't slip," explains senior Albert Ratner. "Other missions will slip past us."

GAMCIT carries a gamma-ray detector and a camera to look for flashes of visible light coincident with gamma-ray bursts. If such a flash is detected, it would support a theory that says the bursts originate from within our own galaxy, as opposed to a competing theory that says these bursts come from billions of light-years away. This is a debate of some consequence, because if the bursts do come from outside our galaxy, then whatever causes them must be stupendously energetic, even by cosmological standards. But the project should return valuable data even if no flashes are seen, because *Endeavour's* orbit is different from that of the Compton Gamma-Ray Observatory (CGRO). Thus GAMCIT will see bursts that CGRO would miss.

GAMCIT is what NASA calls a

Getaway-Special Canister, or GAScan. GAScans are self-contained, self-sufficient payloads that must weigh less than 200 pounds and fit into a standard canister somewhat smaller than a 55-gallon drum. On this flight, GAMCIT will be one of 12 GAScans mounted on a "bridge" across *Endeavour's* cargo bay.

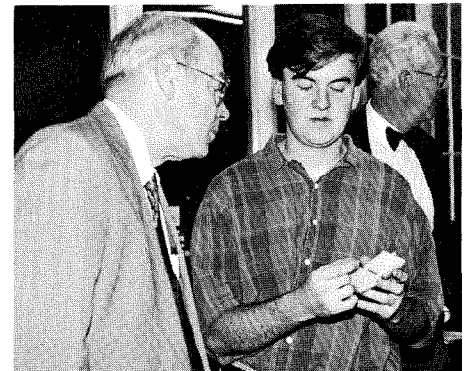
GAMCIT has undergone some design changes since last heard from. "In late November, we did a total mass check and ended up 80 pounds overweight," recalls senior Benjamin McCall. "We knew we had to use fewer batteries and lose the big aluminum box." (At that time, the design called for the payload to be powered by 282 size-D flashlight batteries packed in an aluminum case that occupied the payload's bottom half.) The slimmed-down version gets by with 190 D batteries—enough juice to power a string of 16 miniature Christmas lights—packed 10 to a sleeve in custom-extruded PVC pipe. The sleeves go around the payload's periphery, where, it turns out, they actually make the structure stronger.

In order to make its launch date, the GAMCIT payload must be delivered to the Goddard Spaceflight Center in Maryland by April 17. Fabrication of the structural components is well under way up at JPL, and the students hope to complete the final assembly and have the payload ready for testing by March 15.



Above: Some five year's worth of NASA-required paperwork culminated on February 17, when President Everhart signed the GAMCIT launch agreement on Caltech's behalf. Looking on are (from left) McCall; Maarten Schmidt, Moseley Professor of Astronomy and the project's faculty advisor; Mike Coward, a senior in electrical engineering; Daniel Burke, electronics design engineer for Caltech's high-energy physics group and GAMCIT's technical advisor; Tom Anderson, vice president for institute relations; and Ratner.

Below: Coward, who designed, built, and tested much of the project's circuitry, shows Everhart one of GAMCIT's avalanche photodiodes, which detect X rays at lower energies than CGRO can measure.



Random Walk continued

OK, Everybody Move One Office to the Right

On February 20, Professor of Theoretical Physics Steven Koonin (BS '72) became vice president and provost, succeeding Professor of Civil Engineering and Applied Mechanics Paul Jennings (MS '60, PhD '63), who has held the post for the past five years. On that same date Jennings became acting vice president for business and finance, assuming some of the responsibilities of former Vice President for Business and Finance and Treasurer David Morrisroe, who remains vice president and treasurer.

Watson Lectures

The Earnest C. Watson Lecture Series continues apace. Coming attractions for the balance of the academic year are *March 8*: "The Ocean and Climate: Observations from Space"—Lee-Lueng Fu, senior staff scientist, JPL; *April 26*: "Vortices in Nature and Technology: the Good and the Bad"—Anthony Leonard (BS '59), professor of aeronautics; and *May 10*: "Tall Buildings, Bad Welds, Large Earthquakes, Big Problem"—John F. Hall, associate professor of civil engineering. As is customary, all lectures are at 8:00 p.m. in Beckman Auditorium, and admission is free.

Honors and Awards

Allan Acosta (BS '45, MS '49, PhD '52), the Hayman Professor of Mechanical Engineering, Emeritus, and Professor of Computer Science K. Mani Chandy are two of 77 engineers nationwide elected to membership in the National Academy of Engineering, one of the highest distinctions accorded in the field.

Associate Professor of Mechanical Engineering Erik Antonsson is the second recipient of the Feynman Prize for Excellence in Teaching, presented annually to a professor who has demonstrated "unusual ability, creativity, and innovation in teaching."

Charles Elachi (MS '69, PhD '71), lecturer in electrical engineering and planetary science, and director of JPL's Space and Earth Science Programs, will receive the 1995 Nevada Medal for his leadership role in the nation's space program.

Paul Jennings (MS '60, PhD '63), vice president and provost, and professor of civil engineering and applied mechan-

ics, has been selected by Colorado State University to give the First Willard O. Eddy Lecture.

Senior Trustee Ralph Landau has received the 1994 Founders Award from the National Academy of Engineering. The award honors Landau's outstanding engineering accomplishments and his role in stimulating the study of technology and economics.

Anatol Roshko (MS '47, PhD '52), von Kármán Professor of Aeronautics, Emeritus, has been elected an Honorary Fellow of the Indian Academy of Sciences. A maximum of three people can be named as honorary fellows each year, with the total membership limited to 60 honorary fellows.

Alan R. Sweezy 1907–1994

Alan R. Sweezy, professor of economics, emeritus, died December 24, 1994. He was 87.

A native of New York City, Sweezy received his AB in 1929 and his PhD in 1934, both from Harvard. He stayed on to teach economics at Harvard until 1938, when he moved to Washington, D.C., to work in the Federal Reserve Board's Division of Research and Statistics. He returned to academe in 1940, teaching economics at Williams College until 1947. He first came to Caltech as a visiting professor in 1949, and joined the faculty for good in 1950.

During the Great Depression, Sweezy became interested in the role of population growth in the Keynesian theory of employment and income, and wrote several articles on the subject. In the

late 1960s, he returned to the study of the economic and social implications of population and began teaching a very popular course on population problems. He also served as associate director of Caltech's population program, which ran from 1970 to 1977, the year Sweezy retired. This program attempted to deal with various population issues, such as birth control, in their statistical and cultural contexts.

Not content to confine his energies to academia, Sweezy was also active in several off-campus organizations that deal with family planning and population growth. He was chairman of the board of the Planned Parenthood Federation of America from 1972 to 1975, and served on the board of the local chapter of Zero Population Growth.