

Sky and TELESCOPE



Atlanta's Fernbank Science Center

In This Issue:

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The Fernbank Science Center
and Planetarium

Icarus Flies Past the Earth

American Astronomers
Report

Stars of Low Luminosity

The Outlook for Nuclear
Spacecraft

The Magnetic and
Related Stars—II



The principal astronomical apparatus at Fernbank Science Center are a Carl Zeiss Mark V planetarium projector (at left) and a Tinsley 36-inch Ritchey-Chretien reflector. Seventeen feet long, the Mark V contains 153 single and double projection lenses. The Zeiss sky scene above includes the moon, part of the Teapot in Sagittarius, and the globular cluster M22. Kirby Freeman's photograph of the 36-inch shows finder and guide instruments, as well as the solar prominence telescope that is mounted on the left arm of the fork.

The Fernbank Science Center and Planetarium

WILLIAM A. CALDER, *Fernbank Science Center, DeKalb County, Georgia*

ON THE FRINGE of a 70-acre woodland in Atlanta, Georgia, stands one of the best-equipped science centers in the country. As the front-cover picture shows, one end of the Aztec-style building is accentuated by a 30-foot observatory dome, the other by

a large truncated pyramid that covers a planetarium chamber 70 feet in diameter (third largest in the United States).

This new \$2,750,000 facility opened its doors on December 3, 1967, as an instructional unit of DeKalb County's board of education. Now located in a residen-

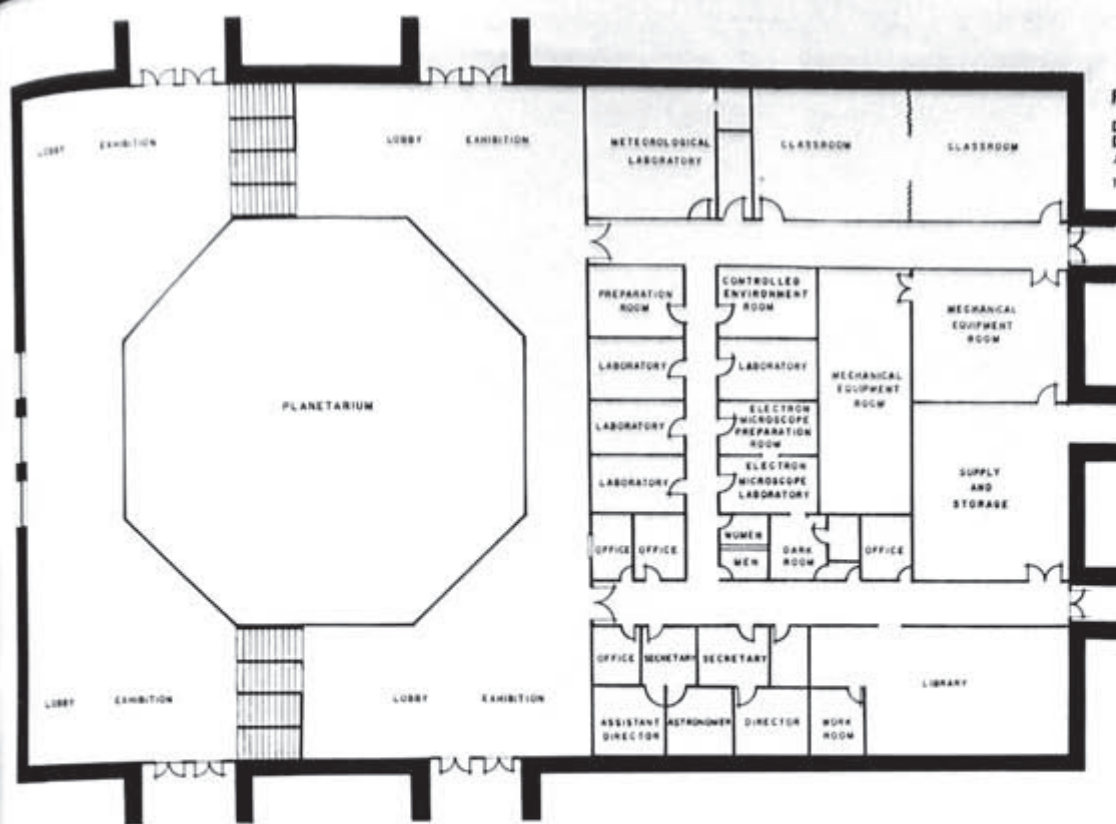
tial area of the city, the property was at one time part of the estate of Col. Z. D. Harrison, who in 1870 became clerk of Georgia's supreme court. He willed the tract of primeval vegetation "to give or provide for instruction." His daughter, Miss Emily Harrison, is now 94 years old. At the recent dedication of the center she told how her family had moved out of the city a distance of three miles in order to enjoy "life in the wilderness."

It was she who gave Fernbank its name, persuaded her father to preserve nearly every tree, and for 78 years kept a watchful eye over it. Although owned and administered by a dedicated board of trustees, Fernbank's future was long uncertain. Scouts and birdwatchers were allowed to use it for nature study, a zoo was at one time attempted, and the writer often gave talks on astronomy under its dark nighttime sky.

Long before the advent of Sputnik 1, the superintendent of DeKalb County schools, Jim Cherry, had tried to interest the community in developing Fernbank as a science center. Finally, his project was assured by a 48-year renewable lease to the board of education. Within the past year, 20 adjacent acres were acquired



Librarian Marjorie Stuart helps two young scientists. The reference library occupies 1,400 square feet near the building's observatory wing.



FERNBANK SCIENCE CENTER
 DEKALB COUNTY SCHOOL SYSTEM
 DEKALB COUNTY GEORGIA
 JIM CHERBY SUPERINTENDENT
 TOOMBS AMISANO AND WELLS ARCHITECTS



The floor plan of the science center, drawn to a scale of one inch for about 35 feet. The double classroom can hold as many as 120 people, and is conveniently located at one of the building's six entrances.

through purchases and gifts from local citizens.

The planetarium projector is the first Mark V of Carl Zeiss in West Germany to be delivered in the United States. It has improved auxiliary projectors for simulating solar and lunar eclipses, the planets, comets, and other celestial objects. The night sky is rendered with nearly 9,000 star images, all those visible to the naked eye under ideal observing conditions. The planetarium chamber has about 500 reclining seats, with headrests.

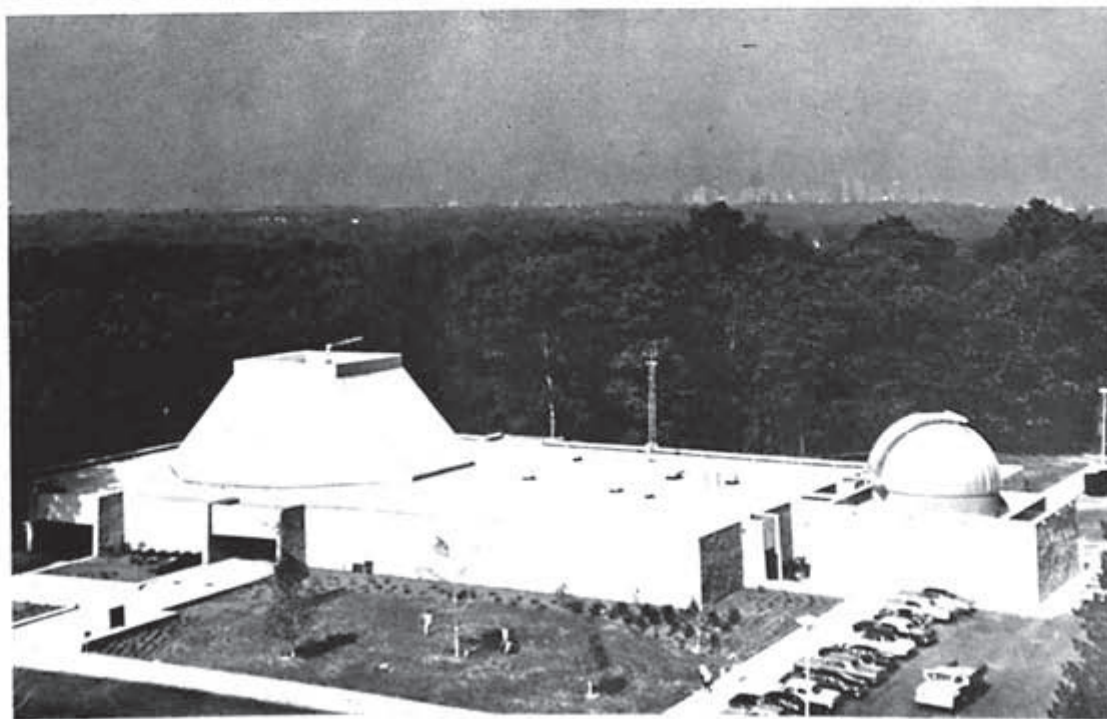
The perforated aluminum projection dome hides a complex of 24 speakers, which are connected to three Ampex tape

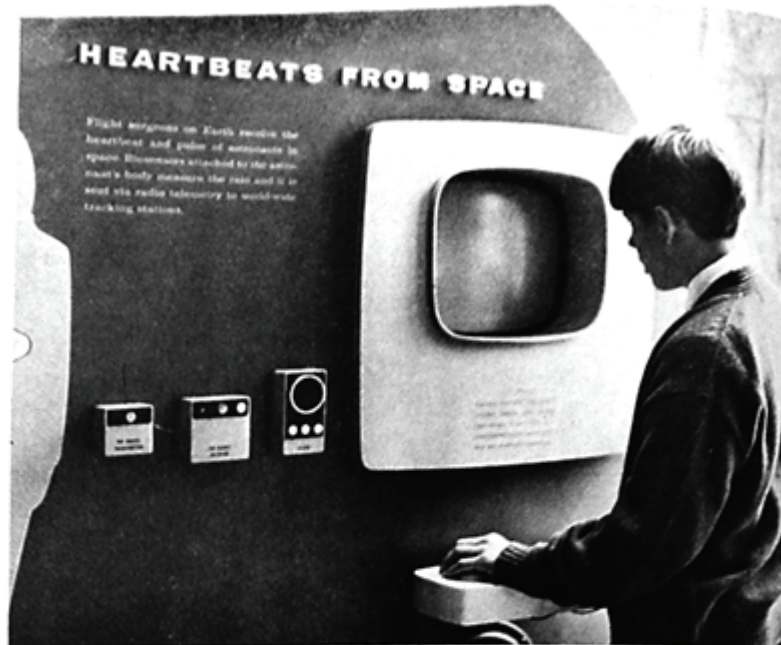
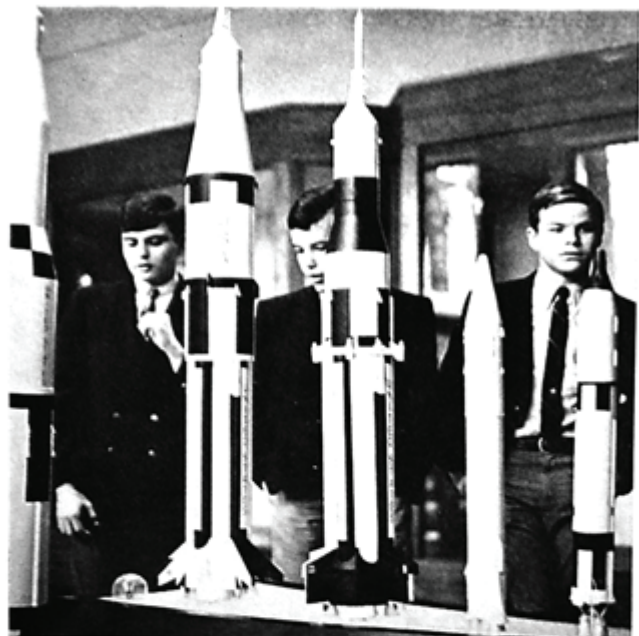
decks. The tape equipment and auxiliary projectors for slides and film, some with zoom lenses, are housed in a control room adjacent to the star theater. Three twin projectors in the central dais will provide skyline effects.

Our planetarium programs tailored for grades 1 through 12 are given weekdays. Classes from all parts of the state are also invited to attend. Public showings of the planetarium are given on weekday nights and on weekend afternoons. In the first six months of its operation, the planetarium's total attendance has exceeded 100,000. Julius D. W. Staal is head of Fernbank's planetarium department; John Burgess is his assistant.

The observatory is equipped with a 36-inch Ritchey-Chretien telescope built by Tinsley Laboratories, Berkeley, California. The nine-ton, \$175,000 instrument has an offset guidance system with digital readout, permitting selection of a guide star outside the field, even though the object being observed is too faint to be tracked directly. Other accessories, designed by Laurence Fredrick of Leander McCormick Observatory and constructed by Tinsley, include a spectrograph and photoelectric photometer. For daytime observing there is a 4-inch solar prominence telescope. Built by Los Altos Technical Vectors Laboratory, it uses narrow-band interference filters instead of grat-

The science-center building stands on a four-acre site some three miles east of downtown Atlanta. Compare this view, which shows the city's skyscrapers in the distance, with the front cover of this issue and with the building floor plan above. The main entrances to the exhibition lobby and planetarium area are at the left. All photographs with this article are from the Fernbank Science Center.





At left, in the exhibit area, touring students view a progression of models of American man-carrying rockets. As if he were an astronaut, the youngster at right looks at his own heartbeat, which is being picked up by the sensor under his hand, amplified, and displayed on the screen before him.

ings or prisms, and is mounted on the main instrument's fork.

Space beneath the 30-foot Observa-Dome is adequate for instructing an entire class in astronomy at one time, also to store several portable instruments, including a Celestron 10-inch. The 36-inch telescope will receive heavy use, as sky conditions at Fernbank are quite good and the Atlanta-Decatur urban area is well populated. In the course of two open nights weekly, about 10,000 persons have already visited the new observatory.

During the coming academic year, Paul Knappenberger will be in charge of Fernbank Observatory, with Juanita McCannless as his assistant. He is receiving his doctorate in astronomy from the University of Virginia this month. For both college instruction in astronomy and serious observing, the 36-inch will supplement Bradley Observatory's 30-inch reflector at nearby Agnes Scott College, where the writer had long been professor of astronomy.

Currently, courses in astronomy are being given to about 40 science teachers, to high school students on two levels of difficulty, and to the general public. A course for credit is to be offered students from nearby colleges that do not have formal astronomy instruction. Television programs produced at Fernbank are being taped for distribution throughout the state.

Many of the physical and biological sciences are represented by the other major projects housed in the building of 30,000 square feet. There is a meteorological laboratory, with equipment to receive pictures from weather satellites as they pass over the earth and its cloud systems. There are a controlled environment chamber, an electron microscope, a seismograph, and a library. The sur-

rounding woodland is a "living laboratory" where nature walks are conducted frequently.

Local tax money, federal grants, and gifts from private individuals and corporations provided the funds for the present building and equipment. Operating expenses, including the salaries of about 40 staff members, are being paid by the federal government under the Elementary

and Secondary Education Act. Lewis S. Shelton, Jr., is director of the center.

County officials have ambitious plans for expanding the center, including an elaborate hall of science, botanical gardens and greenhouses, and a large aquarium. This would all be on newly acquired tracts of land on the opposite side of Fernbank Forest and some distance from the planetarium and observatory.



The Weatherscope at right displays pictures received from American weather satellites. It was donated by Scientific Atlanta. The Carl Zeiss EM9 electron microscope at left can magnify up to 400,000 times, and is employed for both instruction and research. Several Zeiss optical microscopes are also in use at Fernbank, including one for photomicrography.