



**DIAMONDS IN THE SKY**—*Flying diamonds may take the play away from "flying saucers" once the public gets a good look at rocket flames flashing by. These gem-like shapes showed up in rocket motor flames photographed for study by General Electric Research Laboratory scientists. They are produced by shock waves created when the flaming gases hurtle out of the rocket nozzle and strike the atmosphere.*

## TECHNOLOGY

### Army's New Microphone Eliminates "Frying"

► THE SIZZLING hiss is being taken out of some military microphones to improve battlefield communications.

The U. S. Army Signal Corps, Fort Monmouth, N. J., has created a dynamic-type microphone that has a transistor amplifier built into its handle. Although the "mike" is still in experimental stages, its creators believe it shows promise as an answer to scratchy, sometimes unintelligible field communications—particularly from tanks and other combat vehicles that jounce over rough terrain.

The new microphone uses a transistorized amplifier to magnify the tiny electric signals developed when words are spoken into it. The pea-sized vacuum tube substitutes require so little power that the new microphone can be operated from the same power source as the conventional carbon-type "mike."

Carbon-type microphones often obscure battlefield messages with a peculiar frying sound. This has been traced to agitation of the tiny carbon particles in the mike by rough treatment.

With the new microphone, soldiers should be able to talk to each other easily and recognize familiar voices more readily. This is a valuable asset where security in battle is concerned, the Army points out.

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## GEOPHYSICS

## Antarctic Expedition

► AT LEAST one Antarctic expedition during 1957 or 1958 is being planned by scientists. A bill to finance one such expedition has recently been introduced in Congress.

Although the cost of an Antarctic expedition would be high, the information gathered would be invaluable. The expedition would join in world-wide observations now being planned for 1957 and 1958, which will be known as the International Geophysical Year.

New scientific tools, such as rocket-launched balloons for high-altitude pulse-taking, rockets and radar, would yield more information for each dollar invested in the expedition than ever before possible.

The Antarctic is a 6,000,000-square-mile continent at the bottom of the world. Its average altitude is nearly 6,000 feet, and it is the coldest area of the world.

Compared to Antarctica, the Arctic is well-known and well-mapped. Where once men spent a lifetime and gained much fame by penetrating far northern lands, radar stations for continental defense, weather observation posts and near-daily airplane flights have made going to Arctic regions practically an everyday occurrence.

The Antarctic, however, is not even completely mapped around its edges. And the inland area is almost completely unexplored.

Study of the upper atmosphere as much as of inland areas is the aim of the Antarctic expedition. One goal is to establish three pole-to-pole chains of weather stations. Little is now known about weather patterns anywhere in the Southern Hemisphere, nor are the effects of such a large chilly land mass on world weather anything more than a guess at this time.

Weather observation is only one of the ten fields of activity in which scientists all over the world will concentrate their efforts during the International Geophysical year.

If international conditions are no more strained in 1957 than they are now, scientists from all nations are expected to cooperate fully in this world-wide push to learn more about the planet on which we live.

More exact measurements of longitude and latitude, geomagnetism, the aurora and airglow, solar activity, cosmic rays, glaciology, oceanography, the ionosphere and rocket explorations are the other areas in which observations will be concentrated.

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## HOME ECONOMICS

## Cut Dishwashing Time

► BY CUTTING dishwashing time in half, dishwashers have won a permanent place in the American kitchen. That is the conclusion of a study of dishwashing in 10 homes by the home economics staff of the Ohio Agricultural Experiment Station, Wooster.

The saving of time was the biggest factor. Measuring time of dishwashing as that from dirty dishes on the table to clean, dry plates in the cupboard, the dishwasher cut this time by an average of 51.3% compared with hand washing.

Researchers Elaine K. Weaver and Clarice E. Bloom chose 10 housewives without dishwashers for the study. For 30 days each homemaker kept a detailed record of the time spent washing dishes. The time ranged from 33.6 to 108 minutes per day, with an average of 73.2 minutes.

Then each of the housewives got a dishwasher. The machines were furnished by five makers of electrical appliances. The housewives then spent four to six weeks learning to use the dishwasher.

A second 30-day test was made timing the dishwashers. The records showed that the homemaker spent an average of 35.6 minutes per day cleaning dishes with a low of 19.6 minutes and a high of 53.3. Scraping and preparing the dishes for washing took 38.8% of the total time with machine washing.

Other results of the study showed the machine washing to be more sanitary, to require more water, to break fewer dishes, and to use less detergent and fewer dish towels.

Without exception, the women taking part in the tests liked the machine washing. Their general reaction was: "How did I ever get along before I had a dishwasher?"

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## TECHNOLOGY

### Modern Pig Is Sensitive, Pens Are Air-Conditioned

► A DELICATE and sensitive creature is the modern pampered pig in his air-conditioned pen.

Many humans would like "to live like pigs" on hot summer days. Scientists have discovered that contented animals grow faster and yield better meat, milk and eggs.

The result has been air-conditioned pig pens, sun lamps for chicks and piglets, background music for cows, shower baths for cattle and central heating for barns.

Minneapolis-Honeywell has produced special farm automatic devices such as thermostats and timers to be sure everything turns on and off at the right time. After all, who wants a sun burned ham?

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