

ASTRONOMY

U.S. Awaits Evidence On Russian Space Claim

► U.S. RADIO ASTRONOMERS are not rushing to tune their telescopes in on the strange object called CTA-102, claimed by the Russians to have a rhythmic radio output broadcast by a "super civilization," a claim later modified by the Soviets.

Astronomers in this country want to see the scientific evidence before commenting on the Russian report. If there is intelligent life in some far-distant stellar system, the confirmed discovery of it would be one of the most important events in human history.

A rhythmic variation in a radio beam has long been suggested as a logical method for interplanetary communications. In fact, U.S. astronomers made an unsuccessful search for such signals several years ago in Project Ozma.

During this century scientists have become increasingly convinced that there is life elsewhere in the universe, possibly on millions of planets. They believe that life occurs automatically whenever the conditions are right.

Since the cycle reported by the Russians for CTA-102 is 100 days, it will take at least a year for U.S. scientists to confirm or refute the observations. Even then the pattern will have been repeated only three times, considered a minimum.

Stars radiating in visible light are known to vary their light output. The 100-day period reported for the radio source could be caused by some natural factor. As one expert said, "Just because there is a change every 100 days does not mean that 'smart people' are doing it."

The theoretical best range for transmitting information over interstellar distances is 9,000 megacycles. However, CTA-102 has its maximum output at about 1,000 megacycles.

This theory was proposed last by the Russian radio astronomer Nikolai Kardashev, who claimed discovery of the "super civilization."

Later, Kardashev said that objective data show there is a possibility that the signals could be either artificial or natural in origin. "Too little has been done to arrive at the final result," he added.

• Science News Letter, 87:264 April 24, 1965

CONSERVATION

Ducks and Geese Survive On U.S. Private Lands

► QUACKING DUCKS and honking geese still resound across our spring skies mainly because these precious waterfowl are able to survive on private lands and farms throughout the nation.

The great migrating flocks of waterbirds depend today on finding forage, grain and seeds in cropland fields carved out of original prairies and forests.

Most species of these birds have survived the change from wildlands to farmlands with good prospects for the future, D. A. Williams of the Soil Conservation Service,

U. S. Department of Agriculture, told members of the 30th North American Wildlife and Natural Resources Conference in Washington, D. C.

Originally breeding and living along edges of wild ponds and lakes, these waterfowl were once more or less restricted to limited areas of primeval America such as marshes, shifting streams and swampy woodlands, as well as the glacial potholes of the North. There were areas of young America where they could not live so well—the steadfast marsh lands, the wide open prairies and deep majestic forests.

Today civilization has changed much of the virgin land with farm ponds, irrigation ditches and shifting shorelines and has thus opened up new areas for the birds to live. The rice fields of the South and the irrigated valleys of the West, for instance, have helped the waterfowl in North America survive, Mr. Williams said.

About 90% of all North American ducks and geese breed in Canada. In the U. S. the principal breeding grounds are the northern prairie states where nearly all the land is privately owned or used for farming. The four great spring and fall migration routes of the birds pass mainly over private wetlands and farmlands. In the West, the birds concentrate in the river valleys and on irrigated agricultural land. The major winter feeding grounds along the Atlantic and Gulf coasts, southeastern swamps and marshes and ricelands of Louisiana and Arkansas are mostly privately owned and generally associated with farming areas, he said.

• Science News Letter, 87:264 April 24, 1965

SPACE

Lunar Crews to Navigate By Watching the Stars

► A STAR-GAZING navigation system may enable the crew of the Mobile Lunar Laboratory (MOLAB) to travel hundreds of miles over the lunar surface and then return to their starting point without getting lost.

Unfamiliar landmarks will make "eyeball navigation," without the use of instruments, almost impossible. One likely solution appears to be a stellar-inertial guidance system that would "memorize" the positions of certain stars and use them to locate any point on the moon to within a few hundred feet.

Such a system would enable astronauts to place scientific equipment such as automatic or remotely controlled cameras, telescopes and seismographs at widely separated points with no danger of losing them. A system that can "remember" where equipment is located is also more dependable than, say, a radio beacon.

The need for such a system was described in Cocoa Beach, Fla., at the Second Space Congress by Mitchell Streicher of General Precisions, Inc., Little Falls, N.J.

MOLAB will be sent to the moon alone, and its crew will follow as much as six months later. Therefore, equipment aboard the vehicle must be built to endure a long inactive period in the lunar environment.

• Science News Letter, 87:264 April 24, 1965

IN SCIEN

TECHNOLOGY

New Computer Simulates Man's Behavior in Crisis

► WHILE HUMANS seem to be getting more computer-like, many computers in turn are becoming more human-like.

One such computer is being used by researchers to simulate the decision-making behavior of national leaders during an international crisis.

Called Criscom, the computer is "an experiment in artificial intelligence," reported Dr. Ithiel de Sola Pool, Massachusetts Institute of Technology, Cambridge.

The computerized political gaming is designed perhaps ultimately to provide a way of simulating a variety of possible crises, Dr. Pool said.

In the Criscom computer two human decision-makers are represented during a crisis. Each of them receives a great number of messages. Over a period of time these two decision-makers acquire different images of the world from the messages they receive.

Recently the crisis leading up to World War I was reenacted via the computer. Some 1,500 bits of information gathered from history books and newspapers about the first week of the war were fed into the machine.

The two decision-makers, the "Tzar" and the "Kaiser" paid attention to some of the information and ignored the rest of it.

"The results are intuitively very satisfactory," Dr. Pool said. "The 'Kaiser' and the 'Tzar' behave as we think they would."

A future planned Criscom experiment will be the Cuban crisis of two years ago, featuring "President Kennedy" and "Nikita Khrushchev."

The Criscom program, which has drawn support from the Navy, was reported by Dr. Pool and Allan Kessler, Simulmatics Corporation, New York, at a meeting of the Institute of Electrical and Electronics Engineers in New York.

• Science News Letter, 87:264 April 24, 1965

PUBLIC HEALTH

AMA Backs Birth Control At Reasonable Cost

► PHYSICIANS SHOULD be prepared to insert the plastic intrauterine contraceptive device, commonly called the "coil," at a reasonable cost when patients need protection, the American Medical Association's Committee on Maternal and Child Care stated.

Without recommending a specific charge, the committee said the charges should be in keeping with the relative simplicity of the service. The device is "generally recognized as an inexpensive and effective method of birth control," they said.

• Science News Letter, 87:264 April 24, 1965

CE FIELDS

PUBLIC HEALTH

Visiting Pet Monkey Gives Children Dysentery

► THE UNCLE of a two-year-old Welsh child landed from a ship bringing with him a pet monkey that delighted his niece and other child relatives he visited. Unfortunately seven children and one adult contracted acute bacillary dysentery caused by organisms of the *Shigella* genus, which infect only monkeys, apes and humans.

The danger of *Shigella flexneri* Y, the organism infecting four of the seven children and the monkey, was demonstrated as long ago as 1931 when three children in Germany under five years of age died following similar contact with guenon monkeys brought from West Africa as pets. None of the Welsh children died, although some of them were hospitalized.

The risk to adult handlers from primates in zoos and laboratories is not great, but the intimate fondling of pet monkeys in a household carries real risk of infection, a team of scientists reported in the *British Medical Journal*, April 3, 1965. Children are especially vulnerable.

Doctors and veterinarians should discourage families, particularly those with young children, from taking monkeys as pets, the researchers said.

D. T. Robinson, director, Public Health Laboratory, Liverpool; Dr. Elizabeth C. Armstrong, senior bacteriologist of the same laboratory; and Dr. Patricia Carpenter, director, Dysentery Reference Laboratory, Colindale, London, reported the findings.

• Science News Letter, 87:265 April 24, 1965

GENERAL SCIENCE

Trips, Cruises to Honor Science Fair Winners

► A WIDE VARIETY of awards including cruises aboard Navy warships, trips to Air Force and Army research centers, tours of U.S. space facilities and visits to Japan, all go to youthful winners at this year's National Science Fair-International.

Administered by SCIENCE SERVICE, the NSF-I will be held in Kiel Auditorium, St. Louis, Mo., May 5-8.

The Navy Science Cruiser Award is offered to a winner of each local fair affiliated with the NSF-I. It is expected that this year approximately 230 young scientists will get a taste of sailing with the fleet. The youths spend about one week visiting Navy research facilities on land and then go to sea.

The trip to Japan will go to three youngsters (usually two boys and a girl) selected by the Air Force, Army and Navy. In addition to the all-expense paid trip, the winners participate in the Japan Student Science Awards' Science Fair in Tokyo.

This year for the first time, the Federal

Aviation Agency is participating with plaques and tours of FAA installations to winners in the fields of aviation medicine, aircraft and engineering design and aviation electronics.

For winners in oceanography, the Naval Oceanographic Office will present two cruises on vessels engaged in ocean research. Students may spend up to two months aboard working with the scientists and crews.

Private organizations such as the American Medical Association, American Dental Association, American Veterinary Medical Association, American Pharmaceutical Association give expense paid trips and an opportunity to exhibit at the annual conventions of these societies.

This year AMA will double its awards, presenting first awards to four students, two boys and two girls. The ADA presents two trip awards, one boy and one girl; and the American Pharmaceutical Association and the American Veterinary Medical Association present one trip award each.

• Science News Letter, 87:265 April 24, 1965

ZOOLOGY

Sea Life Sees Sun Eclipse As Sunset and Dawn

► SEA LIFE sees an eclipse of the sun as sunset and dawn.

Although the effects of a solar blackout on land animals have been widely studied, little attention has been paid to ocean creatures. Drs. Richard H. Backus, Robert C. Clark Jr. and Asa S. Wing of Woods Hole Oceanographic Institution, Woods Hole, Mass., completed their examination of records taken during the solar eclipse of July 20, 1963.

They found that the change in light intensity controlled the behavior of the organisms studied. The reaction to decreasing light, which was quite rapid, was sufficiently strong to override any innate rhythms that may exist.

The sea life reactions, reported in *Nature*, 205:987, 1965, were observed for organisms in the so-called "deep scattering layer," which reflects sound waves, and for bioluminescent organisms.

• Science News Letter, 87:265 April 24, 1965

TECHNOLOGY

Water From Exhaust Gases Could Be Potable

► SOLDIERS in water shortage areas may one day get emergency drinking water from the exhaust gases of their trucks.

About one pound of gasoline can be converted into one pound of water, which otherwise would be lost in the atmosphere in a gaseous state, preliminary tests have shown. The water, reclaimed and purified, would provide a limited emergency drinking supply.

The water from exhaust gas tests are being conducted by the U.S. Army Materiel Command Engineer Research and Development Laboratories, Ft. Belvoir, Va.

• Science News Letter, 87:265 April 24, 1965

CHEMISTRY

New 'Stretchy' Plastic Can Cover Wires, Cables

► A NEW "STRETCHY" material that combines the hardness of plastic with the springiness of rubber has been developed.

The new substance is made of polyethylene plastic and butadiene, an ingredient used in making synthetic rubbers.

The substance can be stretched three times as far as polyethylene and is better able to withstand high temperatures, while still retaining polyethylene's wear-resistant properties.

These qualities make the "stretchy" plastic suitable for covering wire and cable or for making pipe and structural materials, reported Dr. James E. Pritchard of the Phillips Petroleum Company, Bartlesville, Okla.

Like rubber, the new plastic material can be vulcanized. This means that the long, stringy polyethylene molecules, with the help of butadiene, can be hooked together or cross-linked to form a fish net pattern.

This vulcanization process gives the new plastic its rubber-like properties. Dr. Pritchard, along with Drs. F. W. Bailey and D. R. Witt, reported the new development at the Southwest Regional Meeting of the American Chemical Society in Shreveport, La.

• Science News Letter, 87:265 April 24, 1965

INVENTION

Companies Must Keep Pace With Invention

► INVENTION has become big business, but in most cases business has not kept pace by creating proper patent policy.

Albert J. Hayes, international president of the International Association of Machinists, presented this view at a U.S. Patent system symposium in Washington, D.C.

Some 70% of the patents issued are now granted to corporations, he reported. The rugged individualistic inventor has been replaced by what is now called a research and development team.

In most cases today persons must first sign a pre-employment agreement to give to the company exclusive rights to any new method or machine that they may devise.

Very few companies today reward employees properly for an invention, and thus workers often lose the incentive to invent, Mr. Hayes said. Corporations do not invent, people invent—yet the corporations get the benefit.

One possible answer to the problem could be to adopt a company patent policy similar to that used in Germany, he said. There, employees are granted various sums of money by the company, depending on the value of their inventions.

Mr. Hayes also suggested that filing fees be kept as low as possible and procedures as simple as possible.

"I doubt if we could find a more widely accepted Federal program than the patent system," Mr. Hayes said, "but there are some policies that need correction."

• Science News Letter, 87:265 April 24, 1965