

GENERAL SCIENCE

Science Previews for 1948

A billion years of space will be probed by the Mt. Palomar telescope; range of V-2 rockets may be doubled; attempts to control weather may be more successful.

By **WATSON DAVIS**

► **HERE** are sure things and long shots for science in the new year or in the years to come.

In 1948, good bets include:

1. The giant 200-inch telescope, world's largest, on Mt. Palomar, Calif., will go into service, reaching a billion years into the unprobed depths of space. While new close-up views of the moon, Mars and other planets will be obtained, greatest astronomical interest will be in the photographs of the spectra of distant stars in remote galaxies. They will tell whether the unsampled remote regions of the universe are like the part we live in.

Ancient Remains Sought

2. New discoveries of the remains of ancient man, especially in Africa and North America, will be sought, attempting to push back the antiquity of man in the western hemisphere to 30,000 to 40,000 years ago.

3. Flights of new jet planes and further development of guided missiles will be made, some of which will be kept secret for military reasons. Range of V-2 rocket may be doubled to beyond 200 miles.

4. Attempts will be continued to control weather and make rain by sprinkling clouds from airplanes, or new techniques, possibly with some practical successes.

5. People will see in the night sky a fairly bright object, Bester's Comet. It should be second or third magnitude (as bright as many well-known stars) along about March.

6. Airplanes will be fitted with CAA-developed crosswind landing gear, raising possibility of using single-runway landing fields for all types of planes, reducing airport size and allowing ports closer to cities.

7. New fundamental knowledge in biology and medicine of immediate practical importance will be discovered through use of radioisotopes from atomic pile.

8. Superconductivity, the extraordinary

loss of electrical resistance at certain low temperatures by certain substances, will be further explored and possibly applied practically.

9. Beginning of construction of a gigantic billion-electron-volt atom smasher may take place, which should eventually duplicate cosmic radiation and bring about transmutations, nuclear rearrangements and possibly release of atomic energy by new mechanisms.

10. Attempt may be made to send a small rocket to the moon its arrival to be signaled to earth by a flash on the moon's surface.

These are just ten top possibilities of scientific achievement likely to climax in 1948. Some things that scientists are working on are more important but their future time-table is less definite. For instance:

Discovery of the secret of photosynthesis, how the green leaf converts sunshine into food and energy, may be possible in the future through research now in progress. If a photosynthesis process of even low efficiency were practical on an industrial scale, it would be more important than the peacetime use of atomic energy. It would be the major industrial advance of the century.

Cancer Cure a Hope

The discovery of the cause and cure of cancer (or at least the most prevalent kinds of the many varieties of cancer) is another great research objective, eventually to be achieved, but not really expected within the coming year.

Many diseases and potential epidemics need conquering through research, despite the great advances made in the last two decades. The world health picture is clouded for the future by our fear that in some places on the face of the earth scientists are working to create new and more deadly diseases to be used as weapons of war.

Failure to achieve international control of atomic energy and biological (germ) warfare under the United Nations places a large question mark before the future of civilization, including the progress of science.

Will the "cold war" now being waged, the chaos in many parts of the world, and eventually a fighting war, neutralize real scientific progress? War or conflict of any sort stops new fundamental research out of which the practical applications of the future must come. Applied military research now being accelerated in the United States, the U. S. S. R. and elsewhere is done largely at the expense of fundamental research.

Except for military research and development, science in the United States is still without major governmental support through a National Science Foundation. It may possibly be authorized by Congressional and Presidential action in the coming year.

On the international science scene, some progress in world cooperation is being made by UNESCO and the various international science unions. Look for some steps toward an international observatory where astronomers of various nationalities will be able to work together under United Nations auspices.

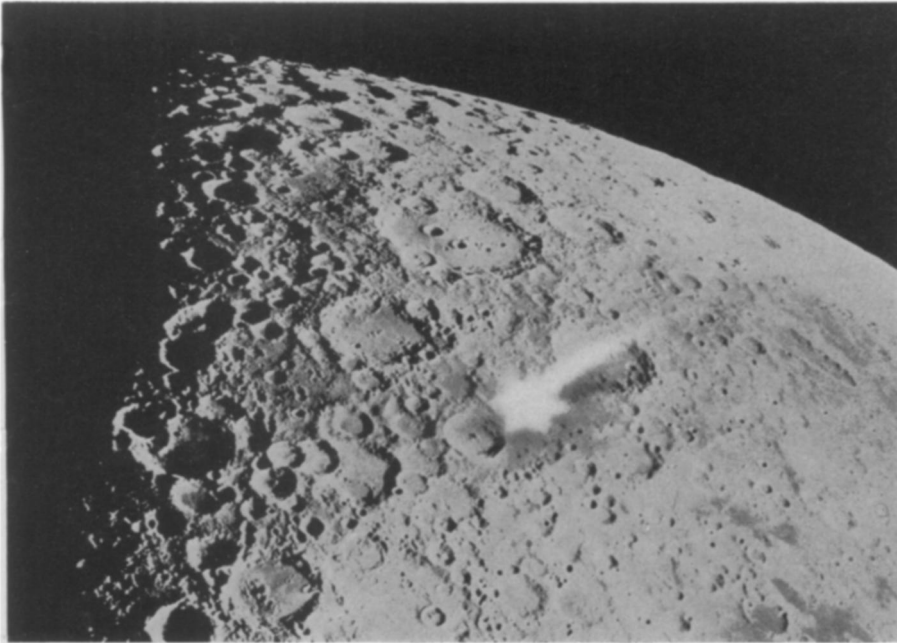
More Interchange

More interchange of scientific information and more travel of scientists in various countries will be stimulated by UNESCO and other international agencies. The Fulbright act that allows Americans to study and conduct scientific work out of proceeds of the sales of war surpluses abroad will provide means of travel and research abroad.

The acute world food situation will call for the cooperation and talents of scientists throughout the world, particularly on agricultural production. The foot-and-mouth disease invasion of Mexico will continue to be a major problem and a menace to the livestock industry of the western hemisphere.

Expect to hear about some more new insecticides for special uses and greater application of the older ones, such as DDT, developed during the past few years. More cities will join in the summer of 1948 the list of those communities that were made virtually flyless by clean-up campaigns and DDT spraying. There should be a nationwide campaign to eliminate the menace of poison ivy now that ways of eradicating it are known.

You will hear more about methods of farming that are useful in special situ-



SHOOTING AT THE MOON—An artist's conception of a rocket striking the moon, a possible achievement in the coming year, was made on a photograph taken by the 100-inch telescope at Mount Wilson Observatory. New close-up views of the moon will be made in 1948 with the 200-inch Mount Palomar telescope.

ations, such as killing weeds by flaming them or treating them with 2,4-D chemical.

Under the U. S. Atomic Energy Commission, several high-powered research centers are getting underway. It will take many months for them to begin producing on a large scale, but the long time benefits will be great and some immediate results can be expected in 1948. Brookhaven on Long Island, N. Y., Argonne near Chicago, and Oak Ridge in Tennessee, are the principal laboratories devoted to general exploration of the results of atomic fission, as well as those that have military applications. Add to these the outstanding Radiation Laboratory at Berkeley, Calif., General Electric's atomic laboratory near Schenectady, N. Y., and dozens of projects in university and industrial labora-

tories and you have a full-blown attack upon the secrets of the atomic nucleus in all its ramifications.

Mental illness continues to be a great economic and social loss as well as personal disaster. Group psychotherapy is likely to grow in favor in the coming months and the general practitioner will be found to take a greater interest in the psychological aspects of medicine. Electric shock therapy is likely to be used less in the treatment of mental disorders.

Television broadcasting will continue to grow slowly, dependent upon the operation of radio relays and co-axial cables between cities as well as the sale of receivers. The New York to Boston radio relay for high frequency and frequency modulation will go into operation regularly.

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'47 Predictions Come True

➤ YOU had advance information on what would happen in science when a year ago you read the Science Service forecast for 1947. (See *SNL*, Jan. 4, 1947.)

In aviation, for instance, it was pre-

dicted that instrument push-button landings would come into use and the round-trip across the Atlantic was one of the past year's major flights.

The first jet-propelled transport took to the air, as foretold.

The CAA ordered radar installed in some transport planes as an anti-collision device. Availability of such radar commercially was forecast.

Doubt was expressed as to whether the National Science Foundation would be created. Congress and the President were unable to agree on how it should be operated and it is still unfinished national business.

The solar eclipse in May was observed by extensive expeditions. This was a sure thing, of course.

The great 200-inch telescope did not actually go into service, as hopefully predicted, but its mirror did make the journey to the top of Mt. Palomar.

Some new and useful insecticides were made known as foreseen.

Soilless gardens in Japan did begin providing our occupation forces with fresh vegetables.

The U. S. Atomic Energy Commission got its peacetime development and research program underway.

Some of the admittedly long shots predicted for 1947 did not come through, but are still future possibilities:

Discovery of the secret of photosynthesis.

Control and prevention of some kinds of cancer.

Discovery of a new chemical element.

Operation of an atomic energy plant.

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PHOTOGRAPHY

New Full Color Process For Movies Announced

➤ PRINTING motion pictures in full color, by a new process revealed by Polaroid Corporation, of Cambridge, Mass., produces three separate color images on a single layer of standard black-and-white film from three color separation negatives.

The new process is known as Polacolor. Use of this standard film and essentially the same processing equipment employed in black-and-white movies makes the process relatively inexpensive. The new full-color movies are suitable for showing in standard projectors.

Printing the three color images is effected by conventional devices. All the film materials, chemicals and processing agents are available commercially. The Polacolor silver sound track is exposed and developed along conventional lines and has the same characteristics as conventional sound tracks for black-and-white moving pictures.

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