

## ASTRONOMY

# Astronomical High Lights

Top events in astronomy during 1956 selected by Dr. Harlow Shapley include completion of long study on speeds of very distant galaxies made with 200-inch telescope.

► LAUNCHING ARTIFICIAL SATELLITES and radio signals from the planets and space held greatest public interest in astronomy during 1956, Dr. Harlow Shapley, retired director of Harvard College Observatory, has reported.

However, in listing the past year's astronomical high lights, Dr. Shapley put at the top measurements made on very far distant galaxies with the giant 200-inch telescope on Mount Palomar.

Knowledge of rate at which the universe is expanding, he said, will for many years to come be based on results of the now-completed "prolonged study" by Dr. Milton L. Humason of Mount Wilson and Palomar Observatories of the radial velocities of several hundred galaxies. This work was reported jointly with Drs. Allan R. Sandage, also of Palomar, and N. U. Mayall of Lick Observatory, Mount Hamilton, Calif.

Dr. Shapley told the American Association of Variable Star Observers meeting in Springfield, Mass., that discovery of the anti-proton was second on his list of 11 astronomical highlights for 1956.

He said this discovery gives to cosmogony a basis for "strange speculations" such as the theory suggested by Dr. Maurice Goldhaber of Brookhaven National Laboratory, Upton, N. Y., of an anti-matter universe quite distant from our proton cosmos—a sort of mirror image of it.

Third highlight of 1956 astronomy, Dr. Shapley said, was the beginning of the world-wide organization of amateur astronomers for the visual tracking of the artificial satellite, the launching and study of which is one of the "semi-astronomical" projects of the International Geophysical Year. IGY is an international look at the earth and its atmosphere lasting 18 months from next July 1.

Fourth on Dr. Shapley's list is the "firm assurance" that a large national observatory with an 80-inch telescope equipped for precise photometry will be built in the Southwest for use by astronomers from many institutions. This project, underwritten by the National Science Foundation, is a companion enterprise to establishment of the 140-foot radio telescope in West Virginia.

A "convincing astrophysical theory" by Dr. W. A. Fowler of California Institute of Technology, Pasadena, Calif., and Dr. Jesse L. Greenstein of Mount Wilson and Palomar Observatories to account for formation of heavy elements in stellar interiors is fifth on Dr. Shapley's list. He said this contribution was of "high importance" in our rapidly increasing knowledge concern-

ing evolution of stars and of the stellar universe.

Here are the other high lights:

6. The publication of the University of Michigan's great program of discovery and measurement of visual double stars seen from the Southern Hemisphere. Dr. R. A. Rossiter was the principal observer for this 30-year enterprise. He discovered more than 5,500 new double stars, more than any other astronomer, setting a record unlikely to be exceeded.

7. Detection for the first time of red shifts in the radio spectrum of distant galaxies by Drs. A. E. Lilley and E. F. McLain of the Naval Research Laboratory, Washington. They found the speed of recession of a pair of galaxies in Cygnus the same in the radio wavelengths as in optical measures by Drs. W. Baade and R. Minkowski of Mount Wilson and Palomar Observatories—about 10,000 miles per second.

8. Two special conferences of high importance. One held at the Leander McCormick Observatory, Charlottesville, Va., to pool the continued worries of astronomers about the stellar distance scale and its revision. The other held at the Flower and Cook Observatory near Philadelphia to explore, with international participation, the future of precision instruments for measuring faint starlight.

9. The dedication and putting into successful operation, under the general supervision of Dr. Bart J. Bok, of the 60-foot radio telescope at Harvard Observatory's George R. Agassiz Station, an instrument designed especially for research on the neutral hydrogen radiation from the Milky Way galaxy.

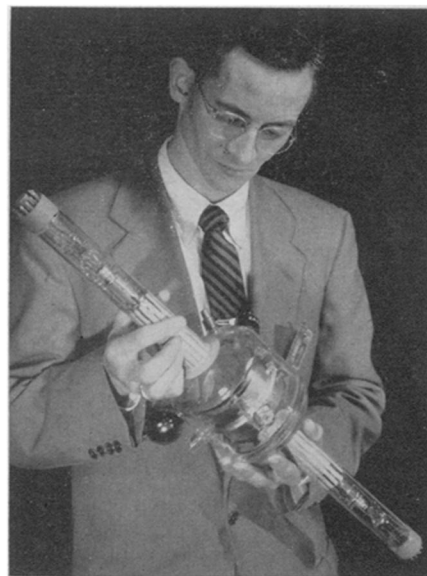
10. The dominance in the summer and autumn sky of the planet Mars, which was in early September a mere 35,000,000 miles distant, permitting much intense study by spectrograph, photometer and radio waves of the planet's surface at this most favorable approach in many years.

11. The announcement from the Canadian Radio Physics Laboratory at Shirley Bay of Project Janet, a development by Dr. P. A. Forsyth and co-workers for using the ionized trains of meteors for the transmission of radio messages over long distances, at least up to 1,000 miles.

Science News Letter, November 3, 1956

Scab is a major disease problem in New York *apple* orchards.

Use of *molasses* as livestock feed is increasing.



**"MEMORY" TUBE**—*Franklin H. Harris of the Naval Research Laboratory inspects the tube he invented that can take a TV picture, transfer it to a monitor tube and hold it there for as long as a day to study.*

## BIOCHEMISTRY

## Tranquilizer Halts Reproductive Cycle

► RESERPINE, one of the now widely used tranquilizing drugs, can temporarily halt the monthly reproductive cycle in females if used in large enough daily doses.

Birth control by this drug, however, will probably not be possible because of the size of the dose needed to achieve the effect.

The finding, made in monkeys, is reported by Dr. Vincent J. De Feo of the Carnegie Institution of Washington, Baltimore laboratory, and Dr. S. R. M. Reynolds of the University of Illinois College of Medicine, Chicago, in *Science* (Oct. 19).

When the drug was given to female monkeys early in the monthly cycle, menstruation was suppressed for as long as 140 days.

Operations on some monkeys at the end of the reserpine treatment showed that no eggs had been released during the treatment period. Consequently, the treatment, in the monkeys, would have given effective birth control. Three of the monkeys had been pregnant before the experiments, so it was known that they were able to produce young.

After the drug was stopped, normal monthly cycles promptly started again.

The amount of drug given is so much greater than the amount that can be given humans without causing tremors and other undesirable symptoms the scientists do not see it as a practical means of birth control.

They do, however, suggest that doctors giving the drug to women of childbearing ages should look into the matter of how it is affecting the patients' monthly cycles.

Science News Letter, November 3, 1956