

## GENERAL SCIENCE

# Tyranny of Unknown

► A METHODICAL and elaborate warfare on the tyranny of the unknown is advocated by Dr. Harlow Shapley, retired director of Harvard Observatory, in a book just issued, "The View From a Distant Star" (Basic Books, \$4.95).

"It is time we stopped treating the acquisition of new knowledge as the luxury of a special class, or as the precursor to profit-making new gadgets or nostrums," Dr. Shapley writes. "It is time we quit leaving the explorations beyond the horizons to the long-haired professors and the workers in a few Government bureaus.

"The contest with the Tyranny of the Unknown is a job for the people of the United States of America, if they are going to keep up in the competition with other countries and if they are planning to participate in either the practical or the idealized progress of mankind.

"It should be the concern of the businessman, the labor union, the fruit grower and the farmer. This war can be an affair for a popular front, if the proper leaders properly blueprint the campaign."

Dr. Shapley, who has played a leading role in science youth education, feels that practically every community in America could produce a boy or girl who could be trained to effective, even if modest, service in new research armies. Once the attack is briefed and the skills are sharpened, he says, finding new facts and checking old

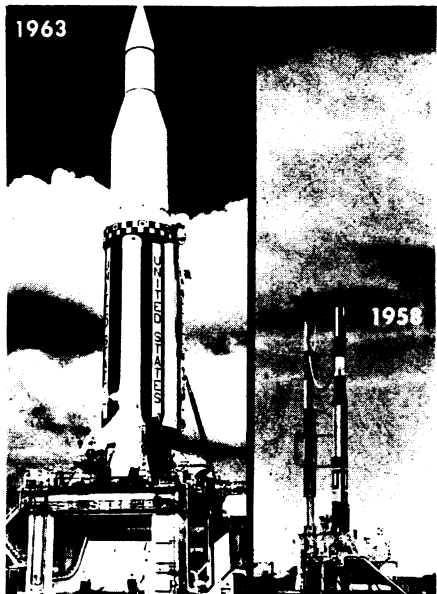
interpretations will be "no more difficult than making an automobile from blueprints, or managing intership communications, or unravelling the mysteries of an income tax form."

Repeating recommendations that he made 20 years ago, some of which have been adopted, Dr. Shapley lists other obstructive enemies of mankind which should be conquered, in addition to the increase of scientific knowledge. He singles out illiteracy, premature senility and cultural uniformity.

"We must oppose those tendencies that are working toward standardization and cultural homogeneity," Dr. Shapley argues. "We must strive against chain-thinking and chain-acting. As a contribution to this objective, our local communities must grow in cultural self-sufficiency, not only for the delight of the people in being doers rather than in being done-for, but also because of the importance of endemic culture to general welfare."

Dr. Shapley, who has brought our understanding of the universe into sharper focus than any other living astronomer, comments in his new book not alone on stars and galaxies but upon the origin and spread of life, science and the humanistic traditions and some of the non-science such as flying saucers, astrology and water-dousing, which plague understanding our corner of the universe.

• Science News Letter, 84:230 Oct. 12, 1963



**NASA GROWTH**—The contrast in the sizes of the 1958 Vanguard, three-stage rocket (right), 72 feet tall, and the Saturn launch vehicle of 1963, 190 feet, illustrates the growth of the National Aeronautics and Space Administration. Saturn models will be used in the manned lunar landing program.

## ASTRONOMY

## Moon Orbiting Vehicles Will Photograph Surface

► A SERIES of five instrumented spacecraft will be sent on close-range lunar photographic missions before 1966 by the National Aeronautics and Space Administration.

Main aim of the project objective is to secure topographic data regarding the lunar surface, necessary for the selecting and confirming of landing sites for Apollo manned lunar landing missions. Information from the spacecraft will also greatly extend our scientific understanding of the moon.

The lunar orbiter will team with the Ranger hard lunar landing spacecraft and the Surveyor soft-lander in blazing the way for the Apollo manned lunar landing mission.

Atlas-Agena vehicles, capable of placing slightly more than 800 pounds into lunar orbit, will be launched from Cape Canaveral, Fla., with the photo-reconnaissance spacecraft.

The proposal is for a spacecraft capable of obtaining its pictures from an altitude of not closer than 22 miles above the moon's surface.

Tracking data from the orbiter over a period of time will provide information on the shape of the moon and its mass distribution.

• Science News Letter, 84:230 Oct. 12, 1963

## GENERAL SCIENCE

## Rockefeller Foundation Announces Future Plans

► THE ROCKEFELLER FOUNDATION plans to concentrate its effort during the foreseeable future in five areas of pressing need.

"In a time of change, when new problems and challenges appear unannounced and suddenly, it is impossible for the Foundation to lay out a detailed blueprint for the future. It is possible, however, to establish priorities among current human requirements," the trustees of the Foundation stated in New York.

To "advance its traditional interest in the welfare of all mankind," the Rockefeller Foundation will concentrate its financial and professional resources toward the conquest of hunger, on the population problem, strengthening emerging centers of learning abroad, equal educational opportunities for America's "disadvantaged citizens," and broadening the cultural life of the United States.

• Science News Letter, 84:230 Oct. 12, 1963

## ASTRONOMY

## Mars' Surface Appears Flatter Than Thought

► THE FIRST THREAD of what someday will be a complete radar map of Mars indicates that the planet's surface is flatter than many scientists had thought.

The new determination is the result of extraordinary radar work carried out from last Jan. 31 to March 2. During that period scientists bounced signals off an area 250 miles wide on Mars, which was about 62.4 million miles away.

An analysis of the signals that came back to earth was reported in Science, 141:1171, 1963, by Drs. Richard M. Goldstein and Willard F. Gillmore of California Institute of Technology's Jet Propulsion Laboratory, Pasadena.

The signals show light and dark areas along the entire northern 13th parallel of Mars. Light areas indicate smooth reflections, such as those given off by flat surfaces. Dark areas indicate either material that does not reflect well or rough, mountainous terrain.

Readings generally were lighter than had been expected. One large area, Syrtis Major, appears dark through a telescope, but was light on the radar chart.

Dr. Gillmore told SCIENCE SERVICE that it is much too early to draw conclusions about the Martian surface. He said the main achievement of the experiment was proving that signals could be bounced off such a far-off, rapidly-rotating target.

The feat required enormous amounts of power.

He said more pieces are expected to be added to the Martian map each time that planet comes relatively close to earth. Those times will be March 1965 when Mars will be 62 million miles away; April 1967, 54 million; May 1969, 42 million, and August 1971, 34 million.

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