

ASTRONOMY

Volcanoes Active on Mars

Dark markings of volcanic ash that drift with prevailing winds give evidence that Martian volcanoes erupt about as frequently as those on earth.

► **VOLCANOES ON Mars** apparently erupt about as frequently as those on earth, Dr. Dean B. McLaughlin of the University of Michigan told the American Astronomical Society meeting in Princeton, N. J.

Dark areas on the Martian surface, he believes, result from deposits of drifting volcanic ash falling out in the pattern of prevailing winds.

These winds, Dr. McLaughlin said, "behave precisely like the well known monsoons of India."

Several prominent changes have occurred on the Martian surface over the last 150 years, Dr. McLaughlin found from a study of observations made of the planet by other astronomers prior to 1930. Four of these could be explained only by volcanic action at a definite location. In three of them, a large dark spot is now visible at this place.

From all four volcanoes, Dr. McLaughlin's historical research showed, dark markings had fanned out in the direction to be expected from monsoon-like winds. These markings were horn-shaped, curving as expected from the planet's rotation, to the right in the Northern Hemisphere, to the left in the Southern Hemisphere.

A few cubic kilometers of ash would be enough to account for these markings, Dr. McLaughlin said. Such ash deposits on

Mars are "not any greater than those of large terrestrial eruptions," but rainstorms, streams and rivers, and plants that hide or erase ash here are non-existent there. Thus only the winds drift volcanic ash about, later concealing it with desert dust or a new ash layer.

Since only a thin film of ash is needed to change the surface color, Dr. McLaughlin said, "Martian volcanic activity seems to be similar in magnitude to that on the earth."

The long bands of ash deposited by the monsoon-like winds usually have pointed or funnel-shaped markings as tributaries or at their ends. They are found mostly south of the equator because the strongest winds occur in the southern summer when Mars is closest to the sun.

Of the four volcanoes, one occurred at the spot now called Pambotis Lacus, another in Hydraspis Sinus and two in the region of Solis Lacus, or the "eye" of Mars.

An example of recurring volcanic activity, Dr. McLaughlin believes, is furnished by the great changes of the broad band, or "canal," Thoth-Nepenthes. This is sometimes only a feeble trail but on other occasions is a broad dark band. The volcano spewing this ash must be located in the oasis called Alcyonius Nodus.

Science News Letter, April 16, 1955

ASTRONOMY

Particles in Red Stars

► **RAIN AND** clouds forming in the earth's atmosphere may behave like the liquid and solid particles formed in cool, red stars, Dr. Paul W. Merrill of Mt. Wilson and Palomar Observatories told the American Astronomical Society meeting in Princeton, N. J.

Current rain-making tests, he suggested, should give astronomers new methods of analyzing problems of the birth, growth and death of stars.

The coolest and largest of known stars are red in color. Most of the smallest stars are also red. Thus the ruddy stars illustrate the two extremes of stellar evolution.

The coolest known red stars have a surface temperature of about 2,500 degrees Fahrenheit. This temperature may mark the points where veiling of the star's light by solid or liquid particles occurs, Dr. Merrill said.

Disturbances causing variations in the amount of stellar light may result in condensation of droplets that later evaporate

slowly, somewhat like high-flying jet planes, leaving a long, slowly disappearing train of white particles, or vapor trails.

"Variable veiling," Dr. Merrill concluded, would be a likely way to explain the observed changes in brightness of red stars, some of which at times give light 100 times more intense than at others.

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GENERAL SCIENCE

Don't-Talk Rule Clams Up Defense Department

► **THERE ARE** more clams in Washington than ever before. Some information people in the Department of Defense now shut up tight at the mere tinkle of a telephone or approach of a newspaperman.

Even security for protection of military secrets was never like this. The specialists in the armed forces prior to Secretary of Defense Wilson's "don't talk" directive were

able to at least talk to the inquirers without merely repeating: "Your inquiry should be directed to Department of Defense public information." Now it is as much as their job is worth for them to answer civil questions, quite non-secret and unclassified.

Information is now supposed to be obtained through channels. These are getting clogged. Those who know have to receive inquiries relayed through those who admittedly do not know.

Like situations that often arise in Washington, this one will probably straighten out in a few days or weeks. It will be changed because it will not work. Meanwhile, clams are in season.

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