

ROCKETS AND MISSILES

Reds Launch Venus Probe

A Russian space probe launched from a multi-stage rocket and headed for Venus is equipped to send back to earth data about conditions in space and on this mysterious planet.

See Front Cover

► A 1,418-POUND SPACE PROBE, launched piggy-back fashion from a Russian multi-stage rocket on Feb. 12, is now on its way to Venus, the second planet in the solar system.

This type launching is not expected to be accomplished for several years by the U. S. The probe is scheduled to be near Venus at the planet's closest approach to earth some time after mid-April.

Equipment in the probe is designed to study cosmic radiation and the composition of space, count the number of contacts with meteorites and measure magnetic fields. The Russians reported two days after launch that the equipment was sending back planned information.

The aim of the probe, carrying a banner of the Soviet coat of arms, is to hit Venus or to send back information to earth from the planet about which very little is known.

The probe has a radio capable of transmitting across millions of miles, but it has not been announced whether it carries any photographic equipment.

If it can take pictures of the planet's

cloud cover and transmit them to earth, the Russians will have another major space-first.

"Such pictures would provide scientists with the first solid clue about the structural surface of Venus, about which there are so many conflicting theories," Dr. Harry Wexler, director of meteorological research for the U.S. Weather Bureau, commented in Washington, D. C.

"Should the clouds concealing Venus have

ASTRONOMY

Planet Full of Mystery

► VENUS—the only one of the sun's nine planets named for a woman—is a mysterious lady; she veils her secrets in a mantle of clouds.

Named for the Roman goddess of love, Venus is the brightest planet. Sister planet to the earth, it gets closer to our world than any other planet, 26,000,000 miles at its closest point (160,000,000 when farthest away).

However, when astronomers look through

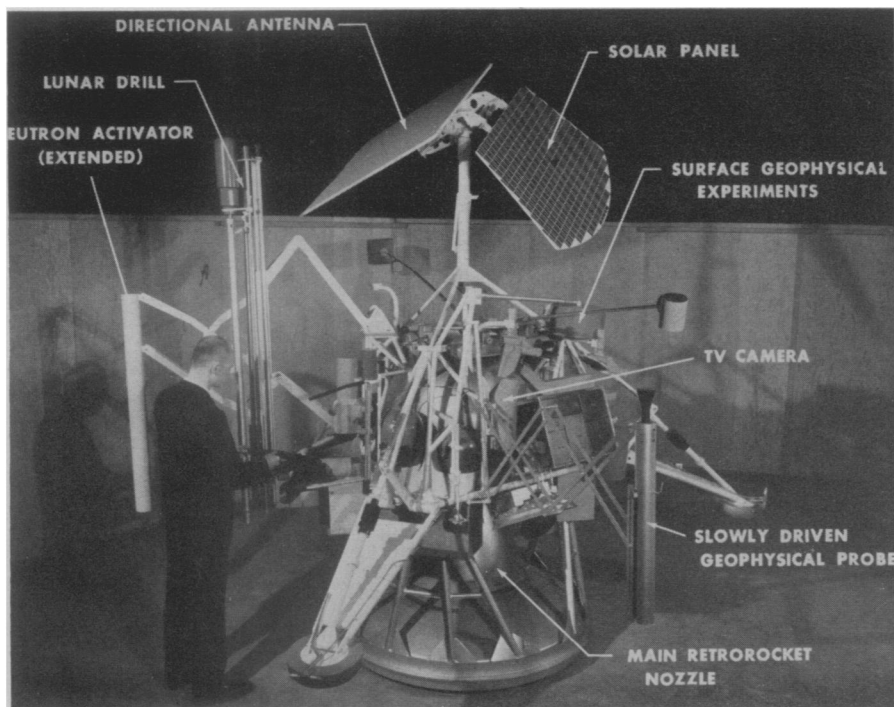
a definite pattern resembling the earth's clouds, the chances that life may exist on Venus would become more probable," Dr. Wexler said.

Seen on the cover of this week's SCIENCE NEWS LETTER is an historic series of ultraviolet photographs of Venus, showing the phases of the planet between June 5 and July 27, 1927, and taken at Mt. Wilson Observatory with the 100-inch telescope, then ten years old and the world's largest telescope.

Photo-equipment capable of transmitting cloud pictures over the 26,000,000 miles from Venus to earth is theoretically possible, space experts have stated. The transmission would, however, be dependent upon radio equipment from the satellite powerful enough for such deep space signaling.

The record for radio communication through space is 22,500,000 miles, set by the United States Pioneer V space probe.

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MOON EXPLORER—An 11-foot surveyor spacecraft is scheduled to soft land on the moon in the period 1963-1966. Instruments will analyze moon material and report findings back to earth via four television cameras. Hughes Aircraft Company, Culver City, Calif., is building the surveyor for the National Aeronautics and Space Agency.

telescopes at the earth's closest neighbor, clouds obscure the planet. No one has seen its surface. Even the length of a "day" on Venus is not known. Possibly one side has always day and the other always night.

Some authorities believe Venus turns once on its own axis as it goes around the sun in about 225 days. If this theory is true, Venus has the longest period of all the sun's planets.

Measuring the length of a day on Venus has been attempted by spectroscopic observations. If Venus rotated in 24 days the rotational speed at its equator would be about 54 feet per second, which could be detected by the Doppler effect. Since no displacement caused by rotation has been observed, it is believed that the period of rotation is not less than a few weeks.

Whether any form of life exists on Venus is also unknown. Spectroscopic studies show that the clouds covering Venus contain carbon dioxide, which is used by plants. However, this does not mean that plant life can exist on Venus and animal life cannot.

Information collected by high-flying balloons has shown that the atmosphere of Venus contains water vapor. The planet is thought to have either a completely dry surface or to be entirely covered with oceans that might contain life without bones or supporting structures, such as jellyfish.

The amount of water vapor found in Venus' atmosphere is about four times more than found in the earth's stratosphere. The atmosphere is believed to be very turbulent with dust and other particles suspended in it.

Venus, including its atmosphere, measures about 24,200 miles around the equator compared to earth's 24,900-mile equator. Temperatures on Venus are expected to be between 500 and 600 degrees Fahrenheit or more. Since the planet is so close to the sun, it receives much more intense solar radiation, and the carbon dioxide acts to hold the heat close to the planet as a greenhouse holds heat.

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