

New method seen for study of Mars vegetation

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A method that turns the limitations of present-day telescopes to advantage has been suggested by two scientists as a means of determining whether vegetation grows on Mars.

Complex and powerful though they are, the telescopes in present use cannot see planetary landscapes in any detail.

Writing in "Publications of the Astronomical Society of the Pacific," John D. Isaacs, Associate Professor of Oceanography and John E. Tyler, Research Physicist, both of The University of California's Scripps Institution of Oceanography, suggest that this drawback can be overcome by taking advantage of a common optical phenomenon.

If one flies high enough, a plane appears to lose its shadow. Beneath it in the direction opposite the sun, one will see either a circular bright spot or a streak of light depending on the nature of the terrain below.

Actually, the plane's shadow still lies on the face of the earth but is so wide and dim the man in the plane cannot see it. What he sees is a special pattern of light scattered by the ground. Because an object (such as a treetop or a blade of grass) directly in the sun's rays obscures its own shadow, only its brightly illuminated top surface is visible and the spot directly opposite the sun looks brighter than the nearby ground.

Isaacs and Tyler say that as the earth passes directly between the sun and Mars, repeated color photographs of the planet from several locations on earth might reveal by their variations in brightness and color the nature of the relief of areas of the Martian surface.

The seasonal color changes on Mars have led some scientists to theorize that vegetation grows there. Others have said the change is due to wetting of a mineral surface. The variation of color and light should indicate which theory is correct, say Isaacs and Tyler.