

science news[®] to the editor

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COVER: A new radar map of a 910-mile-diameter area along the equator of Venus shows a heavily cratered surface. The craters range from 20 to 100 miles across. Their shallowness suggests a dynamic and possibly mobile crust. The dark band across the center of the photo is an area that cannot be accurately mapped from the Goldstone antenna in California. See p. 72. (Photo: JPL)

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Calendar mosaic

I read with interest about "A calendar mosaic from 1000 B.C." (SN: 6/30/73, p. 417). Marshack's thesis is interesting but reaches for explanation about an object that is essentially aesthetic. The shapes and orientations of the mosaic chips can probably be interpreted in many ways by as many imaginative persons.

A simple polishing procedure can explain the basic structure of the mosaic. Initially, pairs of chips are rubbed together until they meet on a smooth edge. Then pairs of chips are rubbed together with other pairs until they too meet on a smooth edge thus forming groups of four chips; thus, to groups of eight chips, and so on.

Roland Werner
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Marshack suggests that the Las Bocas mosaic was built up from small pieces of pyrite "using pre-planning and adjustment at each step of the process."

A much more natural top-down method consists of successively breaking pieces along alternate directions into smaller ones. This would eliminate the need for pre-planning and adjustment, since all pieces automatically fit precisely. This method is consistent with the increasing angular spread of the edges with decrease in their length—it is harder to control the angle at which smaller pieces break. If a mistake is made it is irreversible—this might explain the triangular pieces, the occasional break in the wrong direction and a few extra breaks not called for in the pattern. This interpretation considerably reduces the skill and strategic ability required to make such a mosaic.

It is quite possible that the size of the inlay, the nature of pyrite or the three-dimensional shape of each piece preclude such an interpretation. I could not locate a similar mosaic locally to check.

Berthold K. P. Horn
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An avoidable disaster

Your coverage of science news in SCIENCE NEWS is quite good. One of the early results of Mars 2 and 3 reported in your article (SN: 6/30/73, p. 420) has

an interesting sidelight which points up the necessity for the United States to pay more attention to its support for basic research.

It is indeed unfortunate that signals from the Mars 3 lander ceased "about 20 seconds after transmission began," but it could have been an avoidable disaster. In 1965, in a proposal to NASA relative to the Voyager program to place a NASA lander on Mars, I predicted that "electrostatically charged dust particles (in a Martian dust storm) impacting against an antenna or other metallic surfaces may lead to high-voltage arcing resulting in severe damage to electrical equipment . . ." and I suggested that the electrical properties of Martian dust storms should be investigated. The proposal was not funded, and Voyager was later canceled anyway for political and financial reasons.

On Oct. 16, 1968, a briefing was held at NASA on a newly resurrected plan for a Mars lander mission, but in a telephone conversation with a NASA spokesman I was discouraged from attending because there was no interest in the suggested work. Accordingly, in an attempt to call to the attention of the scientific community what I believed to be a potentially serious problem, I drafted a short paper entitled "Electrical Disturbances on Mars" for submission to a geophysical journal. An esteemed colleague who reviewed the manuscript prior to submittal suggested it was too speculative for publication and would require considerably more research before submission to an editor. Without funding support no research could be performed and the matter was dropped.

Had the Russians anticipated the electrical effects of the Martian dust storm into which the Mars 3 lander descended they could have incorporated appropriate shielding for their equipment. Alas, they received only 20 seconds of data. For future U.S. Mars-lander programs, let us hope that NASA profits from the Russian mistake, which could have been avoided had basic research into the problem been funded earlier.

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