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**COVER:** Alabaster bust of King Tutankhamun shows the naturalism of expression that began during the tumultuous preceding reign of King Akhenaton. Patient archaeological skill and scholarship led to the discovery and interpretation of the treasures of Tutankhamun's tomb which had remained hidden for nearly 3000 years. Samples of these artifacts are now touring the United States. See p. 396. (Photo: John H. Douglas)

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# From Mars to the Mayans: Science in '76

This has been an eventful year in science. Two spacecraft landed on Mars in a mission that has in five quick months provided more information about Mars than the total previously garnered in all human history. Analysis of deep sea cores provided an answer to one of the major scientific mysteries about the earth, yielding virtually conclusive proof that variations in earth's orbital geometry are the fundamental cause of major cycles of ice ages. The discovery two years ago of the heavy particles called psi or J continued to reverberate through all of particle physics, extending this year to the discovery and later to the photographing of particles that openly show the property called charm. The original psi/J work resulted in one of the fastest turnarounds on record between discovery and Nobel Prize, 23 months. Even in mathematics there was a major newsworthy event, a solution to the four-color conjecture that had tantalized mathematicians for a century.

In the life sciences, the new field of genetic recombination research continued to dominate the news, both as a scientific and public issue and as a new tool for basic inquiry. In other areas, the recent discovery of natural pain-relieving substances in the brain was having ramifications in both basic biological science and drug research. One example was identification of a possible neural mechanism for acupuncture, implying that it works by stimulating the release of one of these natural pain-suppressant chemicals, endorphin. Other notable developments included the successful fusion of plant and animal cells in the laboratory, identification of how certain bacteria without chlorophyll carry out photosynthesis, and significant progress toward a vaccine against malaria. Surprisingly for the United States, two public health matters swirled in the news for much of the year, the swine flu vaccination program and the still-unresolved mystery of the Legionnaire's disease in Philadelphia. The advisability of mass X-ray screening for breast cancer was also a major issue.

In nuclear chemistry, supposed evidence for the existence of element 126 in nature stimulated great initial scientific interest, but by year's end that evidence was widely doubted.

In East Africa, a skull of *Homo erectus* dated at 1.8 million years and a skull dated at 2.5 to 3 million years and other fossils dated at 3.5 million years apparently belonging to the genus *Homo* (species unidentified) were found. These discoveries seem to settle the once much-debated question of whether the genus *Homo* existed at the same time as *Australopithecus*: It did. In the Yucatan, the origins of Mayan civilization were pushed back 1,700 years.

And in the behavioral sciences, the lateralization of the brain was the hottest subject, with numerous studies demonstrating early specialization in brain hemisphere function and outlining the different roles of each hemisphere.

These are just a few of the important scientific stories of 1976. In this special year-end issue, you will find a five-page section reviewing the major scientific developments of the year, organized by subject. We hope you find it useful and interesting.

\* \* \* \*

We made a major commitment to cover the two Viking missions to Mars this year as thoroughly as possible. There was no doubt the project merited it. Initially, we feared some readers might object to such extensive coverage with our limited space, but the reaction seems to have been just the opposite. We received many expressions of praise for the quantity and quality of our coverage, especially after it became apparent that the interest of most of the other news media did not extend too far beyond the landings themselves and a yes-or-no answer to the question of life.

To cover the mission, Jonathan Eberhart of our staff physically moved from Washington to Pasadena, where he remained immersed in Viking's scientific studies for more than a third of the year. When in late October he finally departed, Viking scientists and officials noted the event and even the Associated Press took note, reporting that Eberhart was "going home after spending 126 consecutive days covering the odyssey of Viking." On his arrival here, Jonathan was still obviously absorbed in his subject. "I'm not coming back from Pasadena," he said. "I'm coming back from Mars."

\* \* \* \*

Since this time last year, 27,000 subscribers have been added to the SCIENCE NEWS rolls, bringing circulation for this issue to more than 147,000, a 22 percent increase over last year. I want to welcome all new readers to our widespread community of persons (scientists and nonscientists alike) interested in maintaining weekly touch with developments in all the sciences. We are very pleased at the favorable responses to what we are doing and we promise to continue our efforts to bring you authoritative and readable coverage of the latest science news.

Kendrick Frazier