

Planetary research: More budget squeeze

When the Reagan administration's proposed fiscal year (FY) 1986 budget for NASA was announced in early February, surprised space scientists noted that for the first time in four years it included more money for the analysis of planetary data than Congress had approved the year before (SN: 2/9/85, p. 86). The percentage increase was small — less than the inflation rate — but it seemed to symbolize a change from the situation in 1981-82, when some researchers were wondering if NASA's whole planetary exploration program was about to come to an end. The tide, for FY 86, appeared to be turning.

Reentering the fray, however, is the issue of the federal deficit, highlighted by the raging congressional conflict about cuts in social security versus cuts in defense spending. An added factor has been House and Senate bills that would freeze spending for FY 86 at FY 85 levels. And this month, a letter from University of Arizona scientist Laurel Wilkening, chairperson of

the American Astronomical Society's Division for Planetary Sciences, presented the membership with a view very different from a turning tide: "The NASA budget is in trouble," she wrote, "and the NASA planetary exploration program once again stands in danger of being decimated."

Budget worries are an annual affair. But the planetary science community carries a particularly vivid memory of the time, barely three years ago, when rampant rumors, leaks and other unofficial information sources raised the possibility that NASA's whole planetary exploration program might simply be shut down. And the House of Representatives' vote about two months ago in favor of a government-wide freeze has raised at least a version of the same specter again.

"It is clear," says Wilkening's letter, "that if the NASA budget is frozen line by line at last year's level, this means a \$70 million cut from \$360 million in ongoing planetary activity. Some major activities in planetary exploration will have to be canceled or, at best, delayed until next year with the hope that the picture will be brighter then."

Furthermore, says Clark Chapman of the Planetary Science Institute in Tucson,

"we've gotten no positive signs that the Senate is going to help in a big way."

But the problem appears to loom in little ways as well. Last week, for example, David Scott, "discipline scientist" for planetary geology and geophysics in NASA's Solar System Exploration Division, wrote to scientists funded by his program. "Most principal investigators [PI's]," he wrote of his much smaller budgetary subsection, "will have to lower sights and trim their funding requests. . . . Some PI's may suffer substantial cuts in their proposed budgets. . . ."

Even so, he told SCIENCE NEWS, "'86, I think, hopefully, will be our last bad year" — and NASA is indeed hoping to initiate plans for a new Planetary Data System that will enable more ready access to calibrated data, both existing and yet to come, at significantly reduced cost.

It is unclear, however, notes Chapman, whether Congress will make the seemingly inevitable budget cuts in specific items itself or leave the choices up to NASA; nor, he adds, are NASA's own choices all that clear. Among the worried scientists, he says, "there's a feeling that there's essentially no information." —J. Eberhart

Ghost from the dawn of the dinosaurs

Wading on all fours through streams and swampy lowlands, a 200-pound dinosaur the size of an ostrich met its death 225 million years ago. Its skeleton, recently discovered in Arizona's Petrified Forest National Park, was described last week by paleontologists.

Of the convincingly dated specimens, "this is the oldest. . . dinosaur skeleton in the world," says Robert Long, the leader of the group of University of California at Berkeley paleontologists working on the Arizona site. He and his colleagues believe the find represents a type of dinosaur never before described, although they think it lived too recently to represent a missing link between the two major branches of dinosaurs.

The ancient dinosaur bones were found late last summer near a popular Painted Desert vantage point named Chinde Point. Because "Chinde" is a native American word for ghost, Long says he may name the newly discovered dinosaur *Chindesaurus*.

The site of the 225-million-year-old skeleton, a layer of the desert's silty clay, is embedded with dozens of bones. "We might have a whole skeleton," Long says. "Right now it looks really good."

One complete hind leg has already been examined. All its joints and bones, including delicate toe bones, are in place. The number of thigh bones found indicate that the site actually contains more than one skeleton of the species.

The bones examined so far are "very distinctive," Long says, "with a combina-

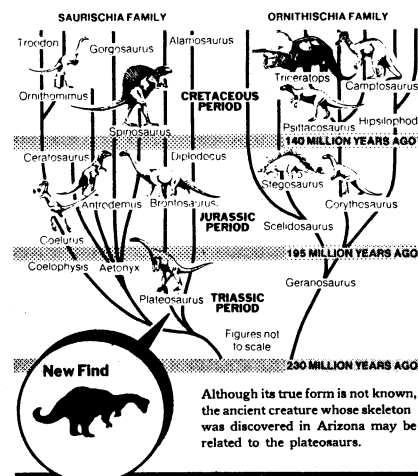
tion of functions I've never seen in a dinosaur before. It seems to be a heavy-boned animal resembling a plateosaur, but there are . . . characteristics that are confusing."

The date of the dinosaur was established by the known dates of ancient leaves, spores and pollen found mingled with the bones. The age of the ancient plant material was determined from European sites associated with volcanic ash, which is dated by the decay of radioactive potassium to argon. The dinosaur of the Petrified Forest is the first to be convincingly dated back to the time known as the Carnian stage of the Triassic period. The peak of the dinosaur age was much later, about 65 million years ago.

This specimen is one of more than two dozen ancient reptile skeletons that have been found in the national park. The site provides "by far, the best picture anywhere in the world" of the dawn of the dinosaur age, Long says. The dinosaur fossils there are better preserved, more complete and more extensive than others that might be from that era.

The scientists now plan to cut around the siltstone that encases the dinosaur skeleton and pour a plaster casing around the block. Then it will be lifted by helicopter, loaded onto a truck and taken to the U.C.-Berkeley Museum of Paleontology. Long estimates it will take three to six months to clear the rock away from the skeleton once it reaches Berkeley. In about a year, after the specimen has been

The Age of the Dinosaurs: Where New Find Fits



officially described, it will be returned to the museum at the Petrified Forest.

The additional study should clarify the evolutionary position of the newly discovered skeleton. On the question of whether the animal could be a common ancestor of the two major lines of dinosaur, Long says, "It's possible, but until we get the skeleton cleaned up it is difficult to say. My feeling is it is too late in time and the skeleton is too specialized." Although this is a very early dinosaur, he would expect a common ancestor to be at least 10 million years older.

"This isn't the ancestral stock," agrees Long's colleague Michael Greenwald of Berkeley, "just another page in the book pushing back the ancestry of dinosaurs another 5 million years." —J.A. Miller

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