

Planetary science: The small cuts hurt too

"This is your report-card day," said an official at the brief opening ceremony. Actually, it was the first day of three, and more of an exam than an occasion for handing out grades. But many of the "students" were harboring a far more fundamental concern: What was happening to their "school"?

The gathering was the annual meeting of the National Aeronautics and Space Administration's Planetary Geology Principal Investigators, scientists funded by NASA for the study of the surfaces of other worlds. The researchers present their findings before a number of professional societies during the year, but the PGPI, or "Pigpie," meeting is the formal yearly review at which the agency monitors the progress of their work. Similar reviews are held in the fields of atmospheric science, astronomy and other disciplines.

Over the past year and more, considerable attention has been paid to the grim outlook facing proposed future U.S. interplanetary spacecraft missions, such as to visit comet Halley, probe the atmosphere of Jupiter or radar-map the surface of Venus. Such missions cost hundreds of millions of dollars apiece, but while the scientists are deeply concerned about the lack of future such endeavors, they face—and fear—possibly even more dire consequences involving much smaller sums of money. These are the grants that support the analysis of the data that spacecraft have already provided—in the words of one PGPI attendee at Jet Propulsion Laboratory in Pasadena last week, "getting the knowledge out of the numbers."

The funds assigned to such missions as the recent Voyager encounters of Jupiter and Saturn typically give the project's original complement of scientists only about six months to analyze the results. Subsequent research depends on support from NASA programs such as PGPI. The voluminous data from the four Viking spacecraft on and orbiting Mars prompted the creation of another category, the Mars Data Analysis Program, beginning late in fiscal 1978. But the heightened interest in the red planet did not produce a significant increase in Mars-study funds. Instead, NASA was able merely to raise the number of dollars at a rate somewhat slower than inflation was cutting down their purchasing power. Only about 10 percent of the Viking data have been fully analyzed, says Nancy Evans, formerly with Viking and now the Voyager program scientist, and thousands of photos from the mission have barely been touched. By fiscal 1983, the MDAP category is expected to have been completely eliminated, as may a shorter-lived "JDAP" program to study Voyager's findings about Jupiter. The Pioneer Venus project, whose Venus-orbiter has been working since December 1978, is laboring under an expected 40

percent cut in funds to keep it operating in fiscal 1982 and 1983, and project scientist Lawrence Colin of NASA says that "VDAP" money to include additional researchers seems virtually out of the question at present. As for Voyager's striking Saturn findings, the tight money supply has kept questions of an "SDAP" program from even getting a serious examination. And rumors suggest that the PGPI program and other scientific-discipline funding channels face similar overall cuts, leaving them ill-equipped to take up the slack.

An irony, some PGPI researchers said last week, is that the coming years when planetary missions are fewer and farther

This is one of a series of stories SCIENCE NEWS will run periodically on the impact of actual or proposed budget cuts on various areas of science.

between ought to be seen as an ideal time to consolidate the spacecraft gains, rather than to cut back on the analysis. "Mariner 10 data [from the early-1970s mission to Venus and Mercury] was never adequately looked at, because there wasn't enough money," says Nancy Evans, "and there was another mission coming." That was Viking, which was launched toward Mars in the same year as Mariner 10's final Mercury flyby, and then came Voyager. "We weren't even through going around Mars," Evans says, "before they were going around Jupi-

ter." Few if any of the PGPI scientists are in favor of cutting back on future missions, but there is a clear feeling that much remains to be learned from what is virtually a logjam of unstudied or incompletely analyzed data already on earth.

There is more to the problem than just funding to keep the present generation of planetary scientists working. Several researchers at the PGPI meeting commented that students who may someday enter the profession could be affected less by the hiatus in spacecraft missions than by a shortage in the smaller amount of research money required to keep the field itself alive. For some of the scientists who work at JPL itself, yet another concern is the laboratory's increasing percentage of Defense Department work, which may require some researchers to accept military projects in order to fully fund their time.

Ten months ago, at another planetary-science meeting, one researcher predicted that "in three years, 40 percent of these people will be out of the business." The speaker was Jeffrey L. Warner, who has been with NASA since the year before the first Apollo moonrock samples were brought back to earth. Now Warner is becoming part of his own prophecy. In May, he will be going to work for Chevron, the petrogiant. He looks forward to his role developing an electron microprobe capability for Chevron's research laboratories, but "leaving the space program," he says, "is a direct result of the political decisions being made on a national scale. If the budget were okay, I'd still be there."

—J. Eberhart

Hyperactivity-diet link questioned

The controversial Feingold diet should not be generally employed in the treatment of hyperactive children, according to the January report of a federal health panel. Emphasizing the current lack of controlled experimental evidence for the safety or effectiveness of the original diet or its derivatives, the group called for further and better research on the hyperactivity-diet link while hedging on the question of how to treat hyperactive children in the interim.

The 14-member task force maintained that, despite anecdotal evidence that some children benefit from a restricted diet, it is impossible to predict which children will respond. Clinical reports of dramatic results are not supported by the available experimental data, the group concluded. The panel of physicians, lawyers, scientists and parents was convened by the National Institutes of Health to weigh the conflicting claims of the diet's proponents and critics.

The original dietary therapy for hyperactivity, which was proposed in 1973 by California allergist Ben Feingold, prohibits artificial food additives as well as foods containing natural salicylates. Fein-

gold, who attended the conference, claims a 40 to 50 percent success rate and contends that the diet is free of risk. The panel, however, said that evidence points to a much lower success rate; the members also argued that, while the diet presents no known risks to children, neither has it been proved physically or psychologically safe.

The choice facing most parents of hyperactive children is between some form of dietary restriction and treatment with amphetamine-like drugs, and on this question the panel's conclusion is not unequivocal. While conceding that in some cases a dietary trial might be warranted, the group advised that such a diet should not begin until after a thorough physical and psychosocial evaluation of both child and family and full consideration of therapeutic options, including psychotherapy and behavioral therapy. The difficulty in recommending treatment, the panel stressed, stems from the fact that hyperactivity—which is characterized by inappropriate impulsivity and lack of concentration—has many possible causes, ranging from lead poisoning to maternal depression.

—W. Herbert