

## Oh, earth resources program, where art thou?

Take away interagency politics and inter-NASA-center politics from the much-touted earth resources program and what remains?: two much delayed earth resources satellites (ERTS A and B) that are now far behind the current state of the art and an earth resources package on Skylab that could have been flown hundreds of times more effectively in an unmanned system.

In fact, one walked away from last week's meeting on "Remote Sensing of Earth Resources" of the House Committee on Science and Astronautics' Panel on Science and Technology wondering if it weren't all politics.

Present was the earth resources traveling road show expounding all of the virtues of the program and how it will revolutionize oceanography, hydrology, meteorology, agriculture, forestry, cartography, geodesy, environmental quality and the man in the street. Present also were industrialists such as Daniel J. Fink, vice president of General Electric (manufacturer of ERTS), saying that the current state of the art for remote sensing from space was a resolution capability of about 80 meters. Present were chortling scientists who have been working on remote sensing satellites for the military for years saying privately that the current state of the art is more like 3-meter resolution.

Then there were present representatives from user agencies (Agriculture, Commerce, Interior) who have the most to benefit from the program, frustrated because of the low level of funding they are getting to support the program with adequate ground-based data handling, data dissemination and interpretation facilities, and dependent on NASA to provide the hardware.

The obvious, unspoken question was—does NASA really want to experiment with earth resources technology? At one time NASA presented to a National Academy of Sciences' Woods Hole study plans for ERTS A, B, C, D, E, F and EOS (Earth Observation Satellites). What happened? Some say it was the Office of Management and Budget that put the squelch on the plans. Others say NASA, looking for money for the space shuttle, compromised its potential role as the forerunners in a real earth resources movement.

The truth probably lies somewhere in between. ERTS, however, represents less than two percent of the NASA budget over the last several years. The satellites, launch vehicles and preliminary ground-based centers for ERTS will cost about \$189 million spread out over several years. (NASA's budget is about \$3.2 billion annually.)

Another issue that sticks in the craw

of many users is that NASA's plans for earth resources seem to be directed toward manned flight. The 1969 NAS Woods Hole summary report was emphatic that "the use of manned vehicles per se does not at present appear necessary or economically desirable for the operation of the various space-applications systems. . . ." Yet, besides ERTS A and B, the only other funded program that includes earth resources is Skylab—a manned space laboratory that will cost between \$3 billion and \$4 billion. (Studies are under way at the Manned Spacecraft Center for post-Skylab flights, and earth resources is being used as a partial justification.)

As one scientist puts it: "If one begins with the premise that NASA wants to do earth resources, then NASA would go to the user community and ask—how is the best way to do it? The answers come back: a variety of unmanned sensor satellites. If one begins with the premise that man will be in space, regardless of the reasons, and asks, now what are some useful things for him to occupy his time? Then that is another question." Many of the user agencies are now finding themselves in the predicament of having to support manned space flight (post-Skylab and shuttle) in order to get earth resources experiments flown (and this includes the entire earth-resources contingency within NASA as well), or face the chance.

At last week's conference, George J. Zissis of the University of Michigan addressed himself to some yet-to-be answered questions that may—when and if the answers are forthcoming—open up earth resources and clear away some doubts. He asked: "Where is the design of a space program to rapidly capitalize on the success, if success is the outcome, of the soon-to-be orbited ERTS A? We could have been amassing much more needed experience in the problems of data handling in advance of our satellite program. The critically needed experience in use of repetitive, satellite-obtained imagery could have started years ago had we moved swiftly into orbit. Where are the follow-on systems to ERTS? Where are the plans for prototype operational systems? Where are the oceanographic and marine sciences dedicated systems? And where are our orbital metric cameras (SN: 11/27/71, p. 362) with hard film return for cartographic purposes?" (The military, according to various reports, is now willing to let NASA fly a metric camera system for mapping.)

ERTS A, postponed again but still scheduled to fly sometime this spring or summer, may begin to prove that the Government is interested in gaining knowledge of earth from space, but how interested? Last week's conference did not have the answer. □

### EPA's town meeting of the air

The Environmental Protection Agency during its year of operation has had its problems. Not the least has been to try to weld a group of agencies with widely varying degrees of competence and dedication into a single new and effective guardian of the environment.

"We aren't out of the woods yet, EPA Administrator William Ruckelshaus told a "town meeting" of most of EPA's 7,000 employees over closed circuit television last week. But, he added, progress is good.

Perhaps the best sign this is so was the town meeting itself. Partly pretaped, it presented interviews with EPA employees over the nation, and the employees pulled no punches in their criticisms of the agency. The criticisms ranged from complaints about delayed paychecks to serious attacks on EPA's policies on phosphates in detergents.

Under the format of the program, Ruckelshaus and his top officials answered the complaints posed by the employees. Ruckelshaus had

not heard them until the day before the meeting, and the other officials heard them for the first time at the meeting itself. Furthermore, the press was invited, and an agency that sticks its neck out this far can't be all bad.

The program was not without its promotional aspects, however. Plenty of time was devoted to employees' encomiums of the agency and its boss. But there were a few revealing little slips. For instance, one woman employee asked why EPA and Surgeon General Jesse Steinfeld, in their announcement last year that phosphate substitutes in detergents were harmful, had not recommended to housewives they use soap instead. Ruckelshaus and his top staffers never answered the question. Instead they talked about tertiary removal of phosphates from sewage—a costly route to phosphate removal that the detergent companies strongly endorse because it would not require the companies to remove anything from their detergents.