

from outmoded fossil-fueled plants is far developed, and could be installed in the near future, if the demand for this were insistent." The answer to energy needs, they say, is to continue to rely on fossil fuels instead of getting a larger percentage of energy from what they view as the hazardous nuclear plants.

Hearings on the NPC before a Senate subcommittee chaired by Sen. Lee Metcalf (D-Mont.) last week strongly suggested there is a paralysis in creating options for United States energy policy, partly because such policy is really a function of industry. ". . . A central article of faith [of the NPC]," said Prof. Robert Engler, political scientist with the City University of New York and author of the *Politics of Oil*, ". . . is that Government must not become involved in any use planning of energy resources . . . [and] that no published study by the NPC leave the impression that industry has not been thinking in long-range terms and wisely for the commonweal."

Whether or not energy industries actually make United States energy

policy, there seems little doubt they fail to perceive a broad range of options. That such options will increasingly be needed was stated succinctly by Dr. Harvey Brooks, dean of engineering and applied physics at Harvard and member of the President's Science Advisory Committee, before the Davis subcommittee. He spoke of the vast unmet needs for research, development and application in social and environmental areas, needs which could be partly met by the now unemployed defense and aerospace engineers. Then he looked at the future:

"Within the next 60 years, mankind will have to come to a new equilibrium with its environment. Many current increasing trends, from population to per capita energy consumption, will have to saturate or slow down drastically. The management of this transition represents an enormous challenge to science and technology as well as to political wisdom. To continue [to leave our brainpower idle] only means we are prepared to sacrifice the future for the sake of present comfort and convenience." □

M 82 AND NGC 253

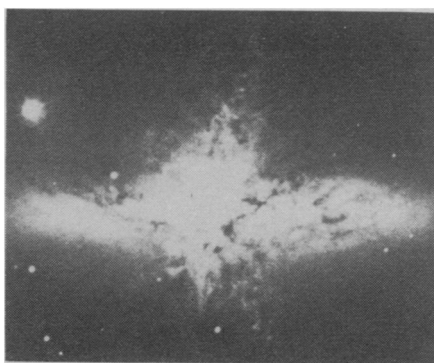
Hydroxyl in two other galaxies

The universality of physical effects is one of the important questions in cosmology. For centuries astronomers and physicists have wondered whether physical laws deduced from phenomena found on earth and in the solar system can be applied without change to distant galaxies and whether distant galaxies are made of the same matter (there are persistent suggestions that some may be antimatter) as our own. In the absence of evidence to the contrary, scientists generally assume the universality of physical laws, but there are those who warn that this assumption should not be taken for granted.

Latently, with the discovery that various chemical molecules inhabit the interstellar space of our galaxy and betray their presence with radio waves, a possible means of testing the universality of chemistry came to hand. It has been taken up, and the hydroxyl radical (OH) has now been discovered in the interstellar space of two other galaxies.

The work was done by Dr. Leonid N. Weliachew of the Meudon Observatory in France, who is visiting the California Institute of Technology. Using the radio interferometer at Caltech's Owens Valley Observatory, he found OH in the galaxies M 82 in the constellation Ursa Major and NGC 253 in the constellation Sculptor.

Hydroxyl makes its presence known with radio waves of about 18 centimeters wavelength. It may emit the



Hale Observatories

Chemistry in galaxies: OH in M 82.

waves if it is hot enough or it may absorb them from the radiation of some source lying behind it.

The most powerful OH emitters in our galaxy, if placed in the Andromeda Nebula, the nearest galaxy to our own, would be beyond the detection limit of presently available instruments, says Dr. Weliachew. He therefore decided to try to find OH by its absorption and chose two galaxies that have strong radio sources in their centers. Absorption by OH clouds lying between the centers and the edges of the galaxies showed up as slight dips in the spectra of the centers.

The discovery probably means that interstellar chemistry of the sort familiar in our own galaxy is a widespread characteristic of galaxies, and it lends support to the assumption that the physical laws we know are universal. □

RETURN TO ACADEMIA

McElroy leaving NSF

The coming departure from the Washington scene of the top man for the National Science Foundation, the agency most concerned with the health of basic scientific research in the United States, is not news to gladden the hearts of academic scientists. It is not all to his doing, but in the two years since Dr. William D. McElroy took over the helm at NSF, the agency's Congressional visibility and appropriated funds have risen considerably. Dr. McElroy last week was named by the University of California regents to become chancellor of the university's San Diego campus at La Jolla. He will stay with NSF until next Feb. 1, to oversee planning for the 1973 budget.

In the last few months NSF has been partially rebuffed for its proposals to reduce science education support in favor of more applied science research, but Dr. McElroy says his decision to leave is in no way related to those criticisms. "I have been pleased with my interactions with OMB [Office of Management and Budget] and Congress," he says. "I wasn't dissatisfied at all."

When President Nixon appointed him director in mid-1969 Dr. McElroy says he told colleagues he intended to stay only two or three years before returning to academic life. "I've enjoyed it," he says of his Washington stint. "It was new and different, and it was fun." But the return to academia beckoned. "I like working with academic people. It's a challenging and interesting life, even at the administrative level." The chancellorship of the modern, new San Diego campus, with its strong emphasis on science, was attractive. "When you're 54 and something like this comes along, you take it."

What his departure may mean for NSF is far too early to tell. Dr. McElroy had succeeded Dr. Leland Hayworth, who was well liked but considered by some to be overly mild mannered for the aggressive necessities of Washington influence-seeking. Dr. McElroy was welcomed in part for his outgoing warmth and affirmativeness. He is generally regarded as having been successful in scientific politics.

"I am sorry to see Dr. McElroy leave the National Science Foundation, for I feel that he has amassed a remarkable record of achievement there and has proven himself to be an administrator of the first magnitude," says Rep. John W. Davis (D-Ga.). Davis is chairman of the House Subcommittee on Science, Research and Development, which authorizes funds for NSF. Dr. Philip Handler, president of the National Academy of Sciences,