

Ridge's ISX-B will get \$9 million.

The 1980 magnetic fusion budget also calls for a hefty 16% increase for applied plasma physics (see Table 2) and continued strong support of technology and systems studies (such as tritium systems and superconducting magnets) that would make it possible to convert the theoretical knowledge we gain about fusion into useful reactors at an early time, Kintner said.

Kintner's 1980 budget also channels approximately \$14.5 million for a "first contribution to the increasing relationship between the US and Japan in fusion," he said (PHYSICS TODAY, November, page 93). This money, along with \$12.5 million from the Japanese government, will be used to upgrade the Doublet III device at General Atomics, La Jolla, California.

The inertial-confinement fusion budget allows for an overall increase of only 1%. Although detailed breakdowns of this budget are not yet available, this low increase is likely to be met by spending less money on advanced lasers—about \$5.1 million in 1980 as opposed to \$8.2 million in 1979—according to Larry Killion, associate director of the Office of Inertial Fusion. Some of this advanced laser money is included in the \$42.5 million the DOE will provide the Lawrence Livermore Laboratory in 1980 for operating funds.

Other items in the inertial-confinement budget are: heavy-ion fusion, receiving approximately \$3.8 million, up \$300 000 from last year; construction of the Nova upgrade of the Shiva laser at Livermore, down \$5 million from the 1979 level of \$20 million, and continuation of construction of the Antares carbon-dioxide laser at Los Alamos, funded at \$12 million in 1980 and \$10 million in 1979.

The total amount budgeted for Los Alamos is \$27.7 million, which includes unspecified amounts for emphasizing target design and carbon-dioxide laser research. Sandia Laboratories, which conducts a program primarily using intense beams of high-energy electrons and light ions as drivers, would receive \$12.2 million under the current budget.

DOE will add \$2 million in 1980 to complete construction of the second stage of the National Users Laser Facility at the University of Rochester (PHYSICS TODAY, February, page 17). DOE's contract with Rochester covers only construction of the laser, not operation.

Other programs. In addition to solar energy, nonnuclear technology options that will receive increased support in 1980 include production of synthetic liquid and gas fuels from coal, cleaner combustion of coal, extraction of oil and gas from shale, development of geothermal resources and the development of conservation technologies.

DOE's advanced nuclear-fission R&D program will continue to lay the groundwork for the possible future selection of a

breeder system, with increased attention paid to improving the fuel efficiency of current generation light-water reactors.

—MEJ

NASA budget has no new programs

NASA's overall \$4.725 billion budget for FY 1980—which includes a \$158.8 million increase that does not keep pace with inflation—provides funding for no new programs. Space-shuttle development, which reached its peak in funding in FY 1979, will decrease by \$262.3 million this year to \$1.366 billion. Other allocations include \$344.4 million for space and terrestrial applications and \$419.7 million for aeronautics and space technology.

Although NASA has no new program starts in space science, sizable funding increases are planned for three of its ongoing projects in this area (see Table 3). Detailed design and development of the optical telescope assembly, the support systems module and the science instrumentation of the Space Telescope (scheduled for launch in 1983) will take place this year if the budget is approved, according to Charles E. Wash, director of program analysis in NASA's Office of Space Science. Continued instrument development and initiation of an industry contract for detailed system design of the US-built Solar Polar spacecraft are also anticipated this year; this satellite (together with a companion under development by the European Space Agency) will observe the hitherto unseen north and south poles of the Sun following a February 1983 launch from the Shuttle and a May 1984 fly-by with Jupiter that will enable it to achieve an orbit inclined about 80° to the ecliptic or solar equatorial plane. FY 1980 funding for the "Galileo" Jupiter Orbiter-Probe (to be

launched in January 1982) would be used to fabricate and test the orbiter and probe as well as the instruments. All three of these programs are slated to receive increases of about \$35 million.

Smaller increases in funding are designated for development of the Shuttle/Spacelab payload and of various Explorer-type satellites. In FY 1980 NASA plans to continue study and development on several "facility-class" instruments for future Spacelab missions, according to Wash. These will include a solar optical telescope, a chemical release module, and a shuttle infrared telescope facility. Wash told us that NASA also plans to continue development of three Explorer satellites for launch in 1981. An Infrared Astronomy Satellite will survey the sky in infrared. A Solar Mesospheric Explorer will measure changes in ozone distribution in the atmosphere between 30 and 80 km above the Earth's surface and relate it to variations in solar radiation. A Dynamics Explorer mission involving two spacecraft (in separate high and low orbits) will investigate the strong interacting processes coupling the hot tenuous convective plasmas of the magnetosphere with the cooler and denser plasmas and gases co-rotating in the Earth's ionosphere, upper atmosphere and plasma-sphere.

Funding for the third of the High Energy Astronomy Observatories continues to drop—not surprising in view of its launch in September of this year. This spacecraft will contain a gamma-ray spectrometer and a heavy-nuclei experiment as well as a French-Danish experiment to study the isotopic composition of primary cosmic rays. The Solar Maximum mission, scheduled for launch the following month, will also suffer an unsurprising loss of funding; this mission will investigate solar flares and related

Table 3. NASA physical sciences

	(estimates in millions of dollars)	
	FY 1979	FY 1980
Physics and astronomy		
High-energy astronomy observatories development	11.1	4.8
Solar Maximum Mission development	16.2	0.6
Space Telescope development	79.2	112.7
International Solar Polar Mission development	13.0	50.0
Shuttle/Spacelab payload development	34.9	41.3
Explorer development	29.8	30.4
Mission operations and data analysis	25.0	36.5
Research and analysis	44.4	34.3
Suborbital programs	29.3	26.9
Total physics and astronomy	282.9	337.5
Planetary exploration		
Galileo Jupiter Orbiter-Probe	78.7	116.1
Mission operations and data analysis	59.3	59.0
Research and analysis	44.4	45.1
Total lunar and planetary exploration	182.4	220.2

phenomena during the upcoming period of maximum activity.

Robert A. Frosch, the NASA Administrator, pointed out in his budget statement that "here is also flexibility in the runout to include new missions," such as a gamma-ray observatory, advanced

Spacelab astronomy experiments and a comet or asteroid mission. Wash told us that if NASA receives a commitment for a comet or asteroid mission by FY 1982, it would propose a spacecraft that would not only rendezvous with the Tempel II comet, but also, earlier in the mission,

send a probe that would go through the tail of Halley's Comet. Wash also observed that a Venus orbital-imaging radar mission currently has high priority in FY 1981 budget planning; any further delay in initiating funding would delay the mission several years. —CBW

the physics community

AAPT elects Kelly as vice-president

William H. Kelly, chairman of the department of physics at Michigan State University, has been elected the new vice-president of the American Association of Physics Teachers. His predecessor, Robert G. Fuller, professor of physics at the University of Nebraska, is the new president-elect. Fuller in turn has succeeded James B. Gerhart, professor of



KELLY

physics at the University of Washington, who is the AAPT president for 1979. All three took office during the AAPT annual meeting held in New York on 29 January–1 February.

Kelly received his BSE (1950), MS (1951) and PhD degrees (1955) from the University of Michigan, and immediately thereafter joined the Michigan State faculty. He has also worked at the Engineering Research Institute, University of Michigan; the reactor division of the US Naval Research Laboratory; the department of nuclear chemistry at the Lawrence Radiation Laboratory, and Oak Ridge National Laboratory. Besides physics education, his research interests include nuclear reactions, nuclear structure and gamma-ray spectroscopy.

Kelly was chairman of AAPT's Committee on Professional Concerns and was a member of the organization's Committee on International Education and

Council on Physics in Education. He was associate chairman for undergraduate programs at Michigan State from 1968 to 1975.

NYU inaugurates science-policy center

Herbert I. Fusfeld has been named director of the new Center for Science and Technology Policy of New York University's Graduate School of Public Administration. The Center's purpose is to contribute to the development of more effective national policies for the generation and use of science and technology, especially through the stimulation of broader cooperation among government, industry and the academic world. To this end, the Center will sponsor research, seminars and conferences dealing with specific science and technology problems on national and international levels.

Fusfeld, who holds a PhD in physics from the University of Pennsylvania, has been director of research for the Kennecott Copper Corporation since 1963.

Wyckoff becomes vice-president of ACA

American Crystallographic Association members have elected Harold W. Wyckoff, an associate professor in the depart-

ment of molecular biophysics and biochemistry at Yale University, as their vice-president for 1979 and K. Ann Kerr, an associate professor of chemistry and physics at the University of Calgary, as their secretary for 1979–1981.

Wyckoff received his PhD in biophysics from the Massachusetts Institute of Technology in 1955 and then spent a year each as a research associate biologist at MIT and as a National Institutes of Health fellow at Cambridge University. He was a research physicist at the American Viscose Corporation from 1957 to 1963, when he began teaching at Yale. His research interests concern the structure and function of biological macromolecules, especially enzymes, as determined by x-ray diffraction analysis. Wyckoff succeeds Jenny P. Glusker (Institute for Cancer Research, Philadelphia), who moves up to the presidency. Glusker in turn succeeds Philip Coppens (SUNY, Buffalo).

in brief

The NSF Advisory Committee for Physics will meet 10–12 May at NSF, 1800 G Street, N.W., Washington, D.C. The meeting will be open, except for a possible closed session for discussion of specific projects.

Henning E. von Gierke, president-elect of the Acoustical Society of America, has been elected to a five-year term as co-chairman of the International Commission on Biological Effects of Noise. Jerry V. Tobias, a member of ASA's committee on psychological and physiological acoustics, was elected chairman.

The 1978–79 Graduate Programs in Physics, Astronomy and Related Fields, a listing and description of US and Canadian graduate programs compiled by the Society of Physics Students, can be obtained from Back Numbers, AIP, 335 East 45th Street, New York, N.Y. 10017. Cost is \$7.50 for students and \$10 for all others. Complementary copies are being sent to SPS chapter advisers and departments offering a bachelor's degree or higher in physics, astronomy or a related field. □

WYCKOFF

