Physical Sciences Notes

HIGH ENERGY PHYSICS

Reduced Itensity for 200 Bev

The Atomic Energy Commission proposed last week a reduction in the experimental capacity of the planned 200-Bev accelerator at Weston, Ill. The lesser machine, proposed mostly for budget reasons, would cost about $60 million less than the $300 million originally planned.

AEC Commissioner Gerald F. Tape told the Research Subcommittee of the Joint Committee on Atomic Energy that plans included building in the possibility of later upgrading the accelerator to the original planned capacity. Taking up that option, however, would cost $20 million more than if the full-scale machine were built from the beginning.

Going by past experience with other, smaller accelerators, the chances are very good that the machine will be upgraded once it is built.

The lowered scope of the proposed accelerator does not mean that the 200-Bev energy to which protons are accelerated would be reduced. Rather, the intensity of the beam of protons, that is, the number of protons accelerated per second, would be cut by a factor of ten. This would mean that some experiments could not be carried out. Commissioner Tape insisted, however, that the lower intensity, 10^{12} protons per second, rather than 10^{13}, was a "respectable" figure.

Further savings would be made by reducing the number of experimental stations at the end of the accelerator. This would cut the number of experiments and experimenters the machine could accommodate at any one time.

SOBELL CASE

Morton Sobell Loses Another Appeal

Morton Sobell, now serving a 30-year sentence in the Federal penitentiary at Lewisburg, Pa., for his role in a conspiracy to spy for the Soviet Union has lost his latest bid for freedom. Two of his fellow defendants, Julius and Ethel Rosenberg, were electrocuted in June 1963.

Sobell's latest appeal was based on charges that the key witnesses for the prosecution, Harry Gold and David and Ruth Greenglass, gave perjured testimony, and that the Government had suppressed evidence in the case, thus engaging in a frame-up. Another contention was that a key sketch of a nuclear device was not sufficiently accurate to be of value to a foreign power.

In a 79-page decision, Federal Judge Edward Weinfeld rejected the charges. The effect of this ruling is to uphold the Government's version that David Greenglass (Ethel Rosenberg's brother) made drawings of atomic devices that were then passed on to the Russians. Sobell was not charged with being involved in these transmissions, but only for his role in the overall conspiracy.

In the proceedings leading to the rejection of Sobell's latest bid, lawyers won the right to get and make public for the first time the sketch of a cross-section of the Nagasaki plutonium bomb allegedly drawn by David Greenglass. Also made public during the proceedings was testimony attacking the drawing as not clearly representing the basic principle of the implosion type of bomb.

Judge Weinfeld held that the scientists submitting affidavits for Sobell had themselves made statements that the sketch was equivalent to one they might use to explain new ideas, and was correct, if vague in presentation.

COMETARY ASTRONOMY

Second New Comet of 1967

The second new comet of 1967, a very fast-moving object too faint to be seen without a large telescope, has been discovered in the northern sky.

The twelfth magnitude comet was detected by Dr. Paul Wild of the Astronomical Institute of the University of Berne, Switzerland, on Feb. 11. The date of discovery was confirmed at the Naval Observatory in Washington, on the morning of Feb. 13. The comet's position was then six hours, seven minutes in right ascension and 77 degrees, 25 minutes in declination.

The object's motion is slowing down in right ascension and speeding up in declination. It was predicted to be at five hours, 13 minutes and plus 48.4 degrees on Feb. 24.

News of the discovery of Comet Wild was telegraphed to observatories around the world by the Smithsonian Astrophysical Observatory, Cambridge, Mass., international clearing house for astronomical information. Within a few hours the Smithsonian was also informed by the Tokyo Astronomical Observatory that periodic Comet Tempel II, magnitude 19, and Comet Rudnicki, magnitude 8, were recovered where predicted.

NUCLEAR PHYSICS

New Nuclear Physics Journal

Bringing some order into the jumbled world of nuclear and particle physics is the aim of a new journal that provides commentaries on significant developments in high energy physics and in astrophysics.

The second issue of "Comments on Nuclear and Particle Physics" will appear in March, with contributions by world renowned specialists in this field. Its aim is to help non-specialists in the field—the graduate student just beginning his research, the solid state physicist who wants to know what is happening in elementary particles, the college teacher who maintains the flow of new Ph.D. candidates, all of whom are now faced with a vast deluge of scientific reports, articles, notes, letters and preprints.

Coordinators of "Comments" are Drs. Leon Lederman and Joseph Weneser of Columbia University.

RADIO ASTRONOMY

Radio Astronomy Instrument

The construction of a very large array radio telescope to produce high resolution data on celestial objects has been proposed to the National Science Foundation by the National Radio Astronomy Observatory.

The very large array, or VLA, would consist of 36 paraboloid antennas, each 83 feet in diameter, that would be electronically controlled and function as one receiving system. The antennas would be placed along three arms of a "Y," each of which would be 13 miles long. The antennas would be movable along the arms to change their configuration as desired.

The VLA has been called the radio equivalent of the 200-inch optical telescope atop Mt. Palomar in California—one that could produce a radio picture of the sky in comparable resolution to the Hale instrument.