prime-focus operation at wavelengths greater than 10 cm and the radio-frequency equivalent of a Gregorian optical system at shorter wavelengths. The Gregorian system employs an elliptical mirror, which is hung so that one of its focuses coincides with the prime focus of the reflector and the other is located at the center of the reflector where a feed horn picks up the focused radiation. In contrast to a Cassegrainian system, the secondary mirror of a Gregorian system can be hung far enough from the prime focus of the primary mirror so as not to interfere with receiving equipment placed there for study of long-wavelength signals.

The telescope will have a 3.5-seconds-of-arc beamwidth at 3-cm wavelength with a gain of 70 db. It will be moved by a computer-controlled servomechanism and have a pointing accuracy of 30 seconds of arc while moving and 10 seconds of arc while standing still.

Research will include study of small-wavelength spectra of radio sources, polarization measurements, and a search for sharp spectral lines.

### *NBS force calibration*

The National Bureau of Standards has begun to use three new deadweight force-calibration machines at its Engineering Mechanics Laboratory in Gaithersburg, Md. The machines have capacities of one million, 300 000, and 112 000 pounds. Loads can be applied in tension or compression with an uncertainty of 0.002 percent. Previously the load limit of the largest NBS deadweight machine was 111 000 pounds. The new machines have reduced the time required to calibrate one-million-pound force-measuring devices by almost half and provide accuracies 10 to 50 times as great as were previously possible.

The machines are used primarily to calibrate reference standards for force-device manufacturers and standards laboratories. In special cases, for example the devices used to measure the thrust of rocket engines, secondary standards are dispensed with, and the Bureau calibrates the actual measuring devices directly.

Each of the machines is several storeys tall. At the bottom of each is a stack of fractional weights, which are linked to each other. The uppermost weight is attached to a "loading frame", which in turn is linked to a "lifting frame" by the device under test. The lifting frame is raised by a hydraulic jack and exerts tension or compression on the test device. Lifting continues until the desired number of weights is lifted from the foundation and the condition of the test device represents a known force.

### *Solar eclipse 1966*

The Federal Council on Science and Technology has designated the National Science Foundation as coordinating agency for United States observations of the total solar eclipse of November 12, 1966, in South America. Robert Fleischer has been appointed coordinator, and all United States scientists, whether or not members of a federal agency, are invited to make their plans known to him as early as possible, preferably no later than January 1, 1966. It is hoped that requests for assistance from South American governments and institutions will be made through the coordinator in a unified way to insure their consistency with each other and with the plans of South American scientists. Dr. Fleischer can be addressed at the National Science Foundation, Washington, D. C. 20550.

### *Radiation chemistry data center*

A Radiation Chemistry Data Center has been established at the University of Notre Dame to compile, evaluate, store, and disseminate data on chemical reactions brought about by ionizing radiation. The Center is jointly sponsored by the Atomic Energy Commission and the National Bureau of Standards and will form a component of the National Standard Reference Data System. Initially attention will be devoted to chemical reaction yields, effects on physical properties, and specific rates of elementary processes. Milton Burton, director of the Notre Dame Radiation Laboratory, will direct the Center, which will be located in the radiation-research building on the campus. Inquiries may be addressed to the Radiation Chemistry Data Center, Radiation Laboratory, University of Notre Dame, Notre Dame, Ind.

### *Space telescopes*

The National Aeronautics and Space Administration has awarded a contract for more than $175 000 to the Perkin-Elmer Corporation to cover preliminary design of a large optical telescope for a manned or unmanned space station.

The technique to be used is known as "active optics" and enables formation of a large diffraction-limited mirror by positioning and automatically aligning several individual optical segments. At first Perkin-Elmer will develop equipment for aligning the segments and fabricate a scaled-down spherical segmented mirror. If work under the present contract proves successful, construction and launching of space telescopes with mirror diameters of 100 inches or more will be considered.

### *Space research at Denver*

The National Aeronautics and Space Administration has approved a $900 000 grant to the University of Denver for construction of a building to house space-related research. The new Space Sciences Laboratories will be a three-storey structure containing about 38 000 sq ft of floor space. Current projects include investigation of electromagnetic propagation, synthesis of rocket fuels, effect of interplanetary fields on cosmic radiation, and infrared absorption by the upper atmosphere.

### *West Texas research center*

The Killgore Research Center of West Texas State University (Canyon, Texas) began operation on September 1. A 22 600-sq-ft building is under construction at a cost of $450 000 provided by the Killgore Foundation of Amarillo. Initial groups have programs in biology, mathematics, biochemistry, and low-temperature physics. (The University is located in a helium-producing region.) Alfred A. Kraus, Jr., is director of the Center.