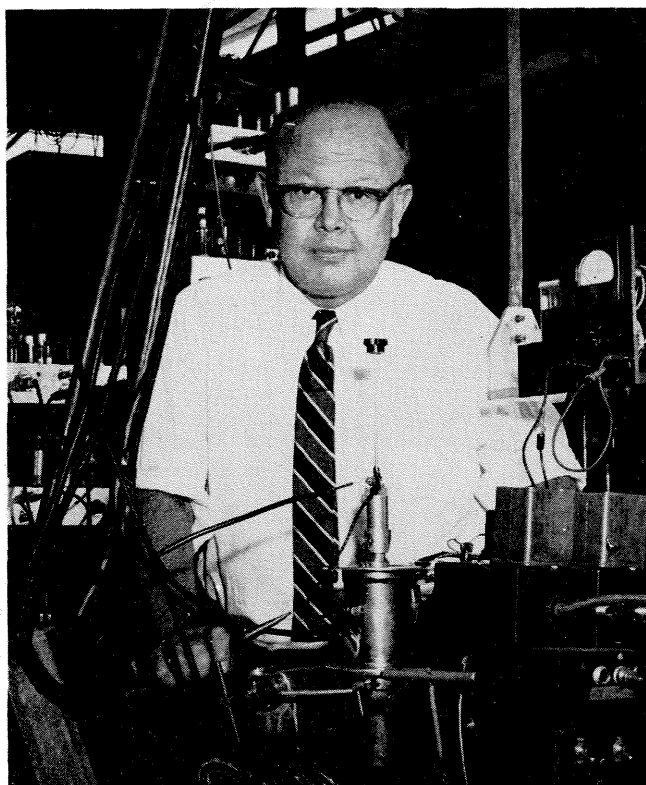


THE MONTH AT CALTECH

National Academy Members

DR. WILLIAM A. FOWLER, professor of physics, and Dr. John D. Roberts, professor of organic chemistry, were elected members of the National Academy of Sciences last month—bringing Caltech staff membership in the Academy to 28. The Academy offers membership to only 500 American citizens and 50 foreign associates who have made valuable contributions in scientific research.

Dr. Fowler's principal scientific work has been concerned with sources of the energy of the stars and the structure, energy levels and conversion of light nuclei from one element into another. He is recognized as a world authority for his theoretical and experimental



William A. Fowler, professor of physics



John D. Roberts, professor of organic chemistry

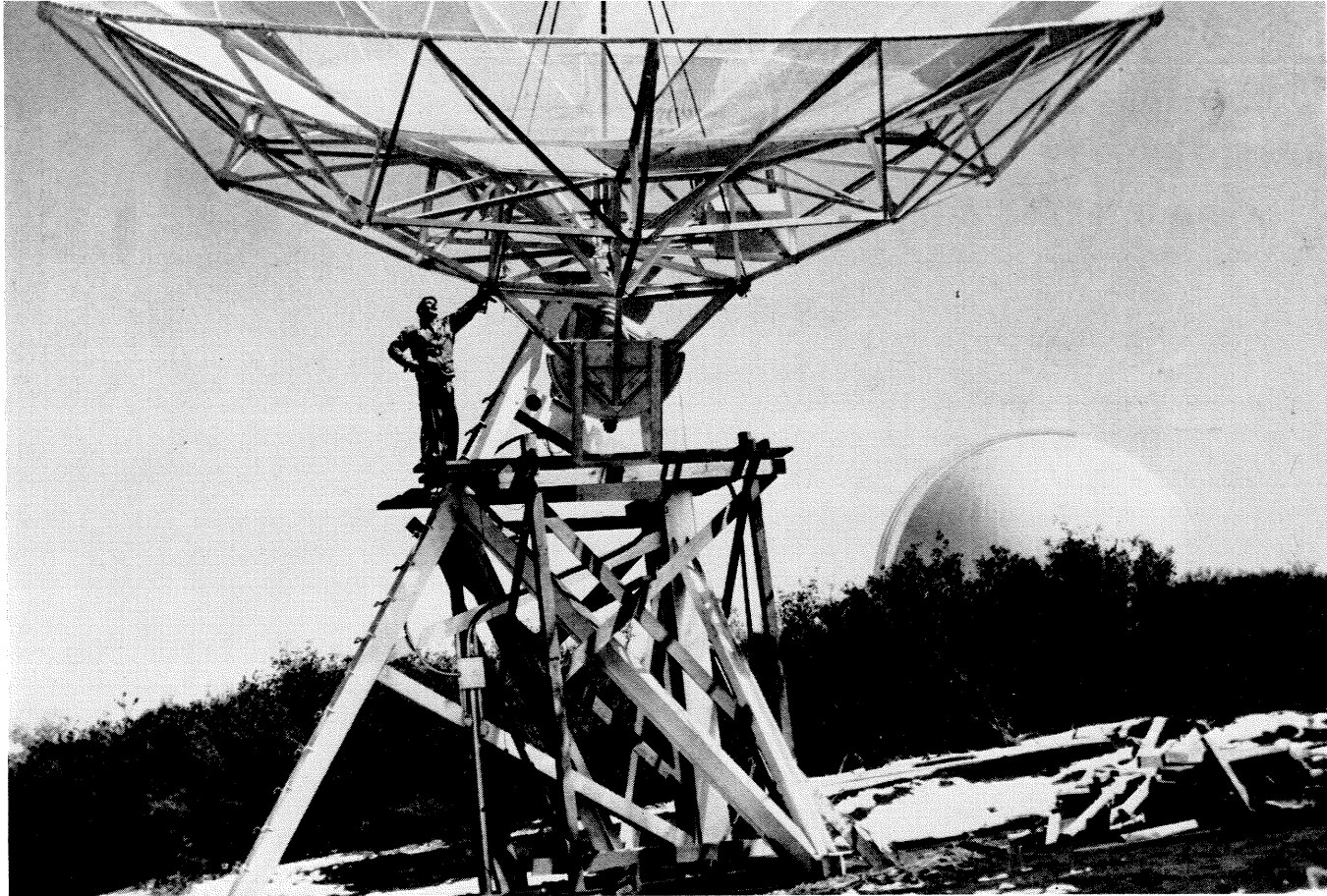
research on the nuclear reactions believed responsible for the evolution of stars.

He has also pioneered in the development of methods for the precise measurement of gamma ray intensities and energies, and the measuring of nuclear resonances or sound waves. During the war, as consultant to the Division of Rocket Ordnance of the National Defense Committee, he contributed materially to the development of specialized rockets and weapons, and received the Medal for Merit in 1948 for his outstanding services.

After receiving his BS from Ohio State University in 1933, and his PhD from Caltech in 1936, Dr. Fowler joined the Caltech staff as a research fellow. He has been professor of physics since 1946.

Dr. Roberts is known for his contributions to theoretical organic chemistry, particularly his studies with radioactive tracers which have added to our understanding of the reactions of compounds containing carbon. His current research is concerned with the mechanisms of organic reactions, the nature of chemical binding in small-ring compounds and the applications of nuclear magnetic resonances to chemical problems. In 1954, Dr. Roberts received the American Chemical Society Award in pure chemistry for his contributions in fundamental research.

Dr. Roberts was graduated from UCLA in 1941 and received his PhD there in 1944. After working at Harvard as a National Research Fellow for a year, he joined the MIT faculty. In the fall of 1952 he came to Caltech as a Guggenheim Fellow and became a member of the faculty here in 1953.



John G. Bolton, and the new antenna set up on Palomar Mountain to detect radio signals from outer space

Radio astronomy

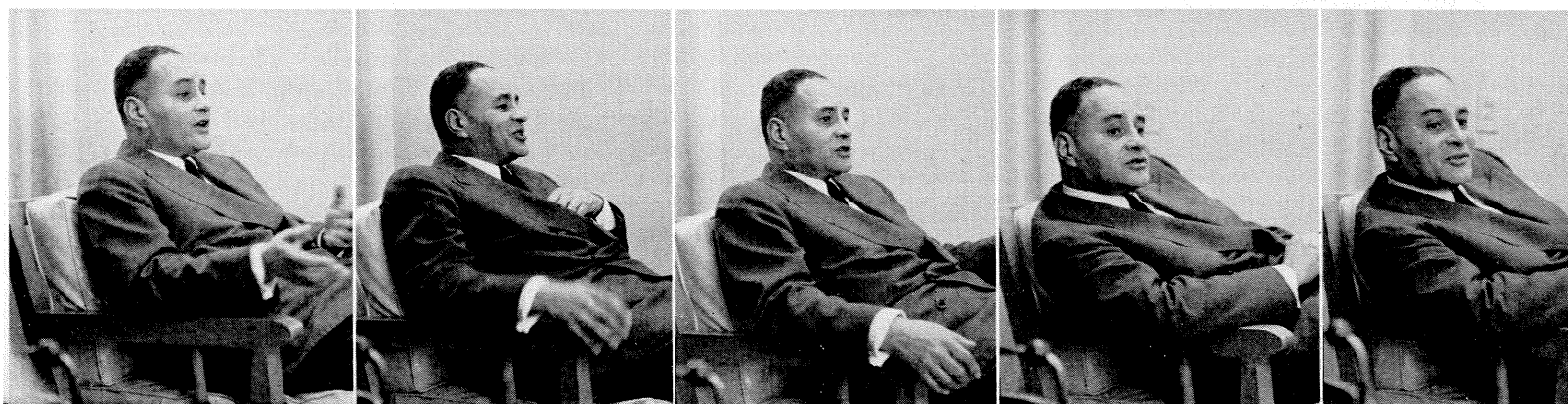
CALTECH'S RADIO ASTRONOMY program went "on the air" last month when scientists started operation of a 32-foot diameter antenna on Palomar Mountain. This radio telescope, designed to detect the sources of radio noise in the cosmos, is the first to be set up on the West Coast.

The Palomar instrument is designed to serve as a pilot model for scientific observation and as a training instrument for astronomers and electronics workers. Within the year, Caltech expects to mount three additional parabolic reflectors—one, 32 feet in diameter, and two others 90 feet in diameter. These will be located on a California desert site, probably in the Owens Valley.

The science of radio astronomy, which has burgeoned since the development of radar during the war, is defined as the study of celestial bodies by observation of the radio waves which they emit or reflect. In some cases it serves as a valuable complement to optical astronomy; in others it has been a source of wholly new discoveries.

The Caltech radio astronomy program has been established under a grant of more than \$400,000 from the Office of Naval Research. It is under the direction of John G. Bolton, who came to Caltech last year as senior research fellow in physics and astronomy. Mr. Bolton was formerly principal research officer of Australia's Commonwealth Scientific and Industrial Research Organization, and, in 1947, discovered the first of the so-called "radio stars."

Dr. Ralph Bunche answered student questions for four days straight when he visited the campus last month



Leaders of America

DR. RALPH BUNCHE, Under Secretary General of the United Nations, came to the campus last month as the third and final visitor on the YMCA's Leaders of America program for 1955-56. Previous visitors have been Paul G. Hoffman and Justice William O. Douglas. On a crowded schedule, Dr. Bunche gave several formal lectures in the four days he was here, but spent the majority of his time in informal meetings with undergraduates.

Dr. Bunche was graduated from UCLA in 1927, received his MA in political science from Harvard in 1928, and his PhD in 1934. Until 1941 he headed the political science department at Howard University, then served during the war with the Office of Strategic Services. In 1945 he received an appointment to the State Department, and there he took an active part in the formation of the UN. Until he became Under Secretary last year he served as principal director of the UN Trusteeship Division. His work in settling the Arab-Israeli dispute in 1948 won him the Nobel peace prize.

Cooperative Wind Tunnel

THE MODERNIZED Southern California Cooperative Wind Tunnel had its formal dedication on April 25. The

\$8,000,000 remodeling job boosts the wind tunnel's air velocities to a maximum of 1400 miles an hour—almost twice the speed of sound.

The original tunnel was built in the early '40s, when high speed military aircraft were flying at a maximum speed of 400-500 miles an hour. That tunnel produced velocities of 750 mph—a speed which was later increased to 900 mph. The present modification program, begun five years ago, makes it possible to use the tunnel for the development of modern transonic and supersonic aircraft.

The Cooperative Wind Tunnel is neither the biggest nor the fastest wind tunnel in the world. It is very nearly unique, though, in the high level of productive efficiency it has established. In designing high-speed aircraft, manufacturers need to get test information as quickly as possible. Automatic recording devices at the Cooperative Wind Tunnel can provide some of this information in a matter of seconds.

The Cooperative Wind Tunnel is owned by five aircraft companies — Douglas, Convair, Lockheed, North American and McDonnell—and is operated on a non-profit basis by Caltech. Its director is Dr. Clark Millikan, who is also director of the Guggenheim Aeronautics Laboratory and professor of aeronautics at Caltech. Fred H. Felberg, who has served as executive assistant since 1952, is now associate director of CWT.

Workers check giant fans in the newly remodeled Southern California Cooperative Wind Tunnel

