

PROGRAM

August 25, 2000
1 p.m.

Master of Ceremonies	Dr. Philip R. Jewell Site Director, NRAO Green Bank
Posting of Colors	West Virginia Army National Guard
National Anthem	Pocahontas County High School Music Department
Pledge of Allegiance	Cub Scouts - Pack 112 Green Bank
Welcome and Introduction of Guests	Dr. Paul A. Vanden Bout Director, NRAO
Invocation	Father Thomas S. Acker, S. J. Wheeling Jesuit University
Acknowledgements	Dr. Paul Vanden Bout
Introduction of Daniel S. Goldin	Dr. Paul Vanden Bout
Remarks	Mr. Daniel S. Goldin NASA Administrator
Introduction of Riccardo Giacconi	Dr. Paul Vanden Bout
Introduction of Rita R. Colwell	Dr. Riccardo Giacconi, President Associated Universities, Inc.
Remarks	Dr. Rita R. Colwell, Director National Science Foundation
Introduction of Senator Robert C. Byrd	Dr. Rita Colwell
Keynote Remarks	Senator Robert C. Byrd U.S. Senate, West Virginia
Benediction	Father Thomas Acker, S. J.
Retire Colors	West Virginia Army National Guard
Ribbon Cutting	



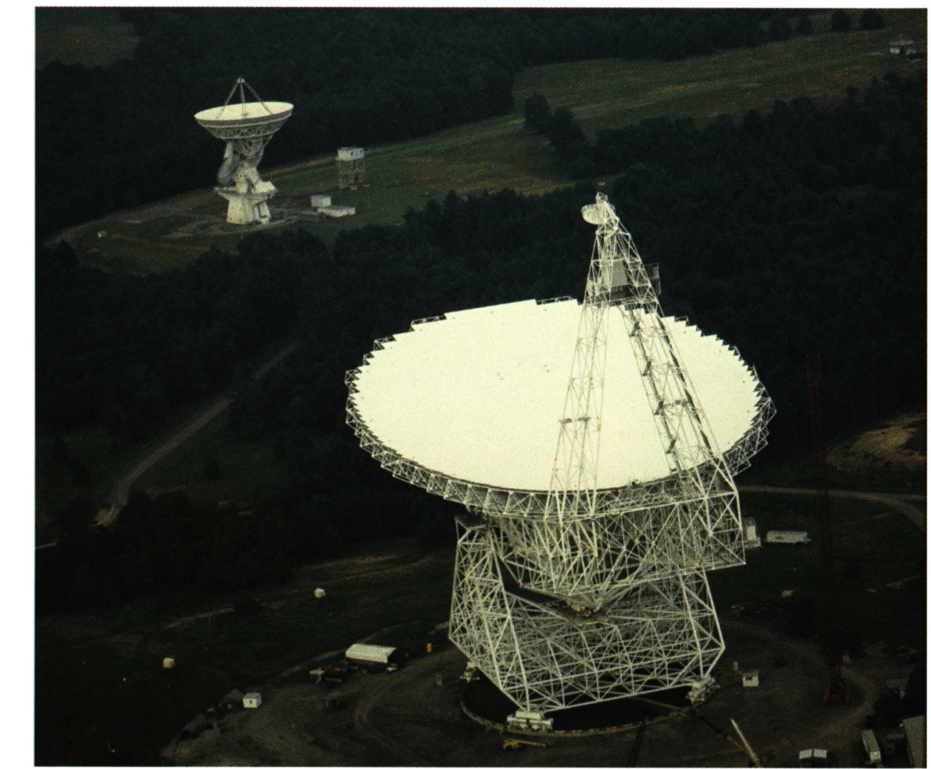
About the NRAO

The National Radio Astronomy Observatory (NRAO) is a research facility of the U.S. National Science Foundation. We provide state-of-the-art radio telescope facilities for use by the scientific community. We conceive, design, build, operate and maintain radio telescopes used by scientists from around the world. Scientists use our facilities to study virtually all types of astronomical objects known, from planets and comets in our own Solar System to quasars and galaxies billions of light-years away.

Since its beginnings in 1932, radio astronomy has profoundly changed our understanding of the universe in which we live. Quasars, pulsars and the remnant radiation of the Big Bang were discovered with radio telescopes. Radio telescopes today give scientists information about important aspects of planets, stars and galaxies that is not provided by other types of telescopes. Of the ten people who have received the Nobel Prize in Physics for astronomical research, six did that work using radio telescopes. It is the mission of NRAO to provide scientists with powerful radio telescopes that allow them to continue this exciting saga of discovery and understanding.

Founded in 1956, the NRAO has its headquarters in Charlottesville, Virginia, and operates major radio telescope facilities at Green Bank, West Virginia; Socorro, New Mexico; and Tucson, Arizona. The NRAO is operated for the National Science Foundation by Associated Universities, Inc., under a cooperative agreement.

The National Radio Astronomy Observatory and Associated Universities, Inc.,
joined by the National Science Foundation, present the



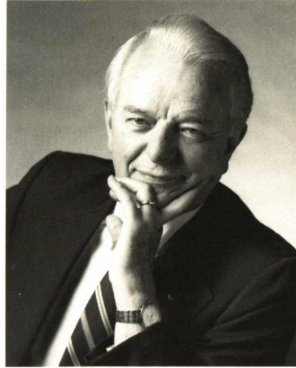
ROBERT C. BYRD GREEN BANK TELESCOPE

AUGUST 25, 2000
GREEN BANK, WEST VIRGINIA

Reception immediately following



An Introduction to Senator Robert C. Byrd



Robert C. Byrd's story is a classic American saga of success and achievement.

Born in 1917 in North Wilkesboro, North Carolina, Robert Byrd was left a virtual orphan by the death of his mother when he was only one year old. Brought to West Virginia by his aunt and uncle to be reared as their own, the future Senator grew up in various communities in the bituminous coal fields, mastering life's early lessons and learning its duties as a miner's son, and graduating as valedictorian of his high school class in the depths of the Great Depression in the 1930's.

Unable at the time to afford college tuition, Byrd sought employment wherever he found an opportunity—pumping gas at a filling station, working as a produce salesman, and then becoming a meat cutter—picking up new skills as he advanced.

One of those skills, welding, was in essential demand after World War II overtook the United States, and he worked during the war years building Liberty and Victory ships in the construction yards of Baltimore, Maryland. He also worked as a welder in the shipyards of Tampa, Florida.

At war's end, he returned to West Virginia with a new vision of what his home state and his country could be. In 1946, he made his first run for political office, and was elected to the West Virginia House of Delegates.

After two terms in the West Virginia House of Delegates, Byrd was elected to the West Virginia Senate; then to the United States House of Representatives for three terms; and finally, in 1958, to the United States Senate, where he has represented West Virginia continuously since, winning re-election again and again by record margins in statewide elections. He has served longer in the United States Senate than has anyone else in West Virginia's history, an indication of the confidence, faith, and trust that the people of his home state have regarding him.

In addition to fulfilling his Senate responsibilities, in 1963, after ten years of study in night classes in law school, he earned his law degree (J.D.), *cum laude*, from American University in Washington, D.C., the first time in history that a sitting member of either House of the Congress had accomplished the feat of beginning and completing the courses of study leading to a law degree while serving in Congress. Byrd was awarded his Bachelor of Arts degree in political science, *summa cum laude*, by Marshall University in 1994.

Continuing his upward trajectory, in 1967, Senator Byrd became a member of the Senate Leadership when he was selected by his party colleagues as Secretary of the Democratic Conference. In 1971, he was chosen Senate Democratic Whip. In 1977, he was elected Democratic Leader by his Democratic colleagues, a position he held for six consecutive terms. For the 12 years he held the position of Democratic Leader—from January 1977 through December 1988—Senator Byrd served as Senate Majority Leader for six years (1977-80, 1987-88) and as Senate Minority Leader for six years (1981-86).

In 1989, for the first time, Senator Byrd had the opportunity to serve as Chairman of the powerful Senate Appropriations Committee, on which he had held membership since the beginning of 1959, and he relinquished his position as Majority Leader to take over the leadership of the committee. Also in 1989, Senator Byrd was unanimously elected President pro tempore of the Senate, a post that placed him third in line of succession to the Presidency and gave him the distinction of having held more leadership positions in the U.S. Senate than any other Senator of any party in Senate history.

In 1994, Senator Byrd was re-elected to a seventh 6-year term in the Senate, making him one of only three U.S. Senators in the history of the Republic to achieve that milestone. Senator Byrd has twice carried all 55 West Virginia counties (1970 and 1994), making him the first person to do so in a contested statewide general election. And in May 1998, Senator Byrd cast his 15,000th roll call vote, giving him the distinction of having cast more roll call votes than any other member in the history of the U.S. Senate.

He is married to the former Erma Ora James, his high school sweetheart and a coal miner's daughter. They are the parents of two daughters, Mrs. Mohammad (Mona Byrd) Fatemi and Mrs. John (Marjorie Byrd) Moore. Senator and Mrs. Byrd were blessed with six grandchildren, Erik, Darius, and Fredrik Fatemi; Michael (deceased), Mona, and Mary Anne Moore; and one great-granddaughter, Caroline Byrd Fatemi.

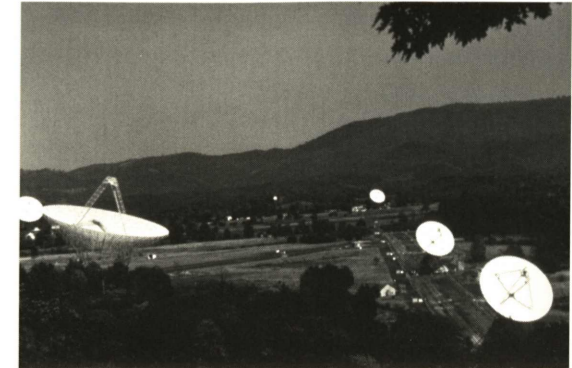
Senator Robert C. Byrd's Contributions to Science and Education in Green Bank

Senator Robert C. Byrd has been a great supporter of the scientific and educational efforts of the National Science Foundation's NRAO Green Bank facility. In 1989, Sen. Byrd obtained \$75 million in a dire emergency supplemental appropriations bill to replace the fallen 300 Foot Telescope with the new Robert C. Byrd Green Bank Telescope. Owing to advances in technology and scientific understanding, the capabilities of the GBT will far exceed those of the original 300 Foot Telescope. Without Sen. Byrd's efforts, there would be no Green Bank Telescope.

In 1992, Sen. Byrd obtained \$5 million to construct the U.S. Naval Observatory's 20 Meter telescope and to procure associated electronic equipment. The USNO has used this facility as part of their global network for precise time-keeping and navigation. Sen. Byrd was also responsible for a \$5.4 million appropriation for construction of the Joint Operations Center, built as an annex to the Jansky Laboratory. This facility will be used as the control center for the Robert C. Byrd Green Bank Telescope and all other telescopes on the site.

In 2000, Sen. Byrd obtained \$4 million for the construction of a new Astronomy Education and Visitor Center for the Green Bank Observatory. This center will serve the dual purpose of a visitor orientation center for the site and an astronomy education center emphasizing programs for school children. The center has set a goal of having each school child in the state of West Virginia participate in an education program at the Observatory at least once before they graduate from high school. Architectural design is underway for this center, which will be completed by the autumn of 2002.

A Brief History of the NRAO at Green Bank, West Virginia



Historic photo of Green Bank showing the 140 Foot Telescope (background far left), the 300 Foot Telescope, (left) and the 3 element interferometer (right).

When the National Science Foundation decided to establish a center for radio astronomy, a search was made for the best location for this new facility. The ideal site for a radio observatory is a valley surrounded by many ranges of high mountains to shield the telescopes from man-made interference. The valley should be isolated and well removed from cities and industrial activity. It should have few local inhabitants, no large power lines or transmitters, and not have extremes of climate. A group of scientists examined more than two dozen sites in the Eastern part of the US and in December 1955 unanimously chose the Deer Creek Valley at Green Bank, West Virginia, as the recommended location. At the founding of the Observatory, the State of West Virginia and the Federal Government drew up regulations designed to protect the site from harmful radio interference, and created the National Radio Quiet Zone. This makes Green Bank a unique location worldwide for radio astronomy.

The National Radio Astronomy Observatory was established to provide unique radio telescopes that would be available for use without charge by qualified scientists from around the U.S., and around the world. Much of the equipment needed for the operation of these telescopes is state-of-the-art and cannot be purchased commercially. The Observatory thus has its own staff of engineers, technicians, mechanics, computer programmers and scientists to develop, maintain, and constantly improve the facilities.

Ground was broken for the Observatory on 17 October 1957, and work soon began on the construction of roads and underground power lines, laboratory and support buildings, and facilities to house visiting scientists. A year after groundbreaking, the first radio telescope, the 85-foot Howard E. Tatel Telescope, was dedicated. By 1965 the Observatory had grown to include the 300 Foot Telescope, the 140 Foot Telescope, and several more 85 Foot Telescopes linked together to make an interferometer. The telescopes were used by hundreds of astronomers each year and made fundamental discoveries in interstellar chemistry, the life-cycle of stars, the structure of galaxies and the structure of the universe. Continual improvements were made to the telescopes and their electronics, and in every case they showed that they could perform far beyond the expectations of their original designers, and make discoveries in areas undreamed of at their inception.

The 300 Foot Telescope had been built in 1962 as a quick, inexpensive, temporary instrument, but so many astronomers wanted to use it that it was strengthened and upgraded and continued in operation. In November 1988, however, while in routine operation, it collapsed suddenly due to subtle and undetectable effects of progressive metal fatigue. The collapse set in motion the events that led to the dedication of the GBT today.