

REMEMBERING CHARLES J. ROBINOVE OCTOBER 31, 1931 - MARCH 25, 2022

A TRIBUTE TO CHUCK ROBINOVE by Ellie Leydsman McGinty

Charles (Chuck) Joseph Robinove was born in Detroit, Michigan, on October 31, 1931. His parents, Muriel Netzorg and Joseph Jacob Robinove, were both high school teachers. Muriel, known as Madame Robinove to her students, was an accomplished French teacher at Mackenzie High School. Joseph, an immigrant from Russia, taught biology at Hamtramck High School and served as an educator in the Temple Beth El Religious and Hebrew School. As a child, Chuck attended the Temple Beth El Religious and Hebrew School. He then went to college at Wayne State University in Detroit where he graduated with a BS in Geology in 1953. In 1954, Chuck was hired by the USGS to serve as a Hydrologist in the Ground Water Branch of the Water Resources Division. He lived in Grand Forks, North Dakota, where he conducted a detailed hydrologic study on the saline water resources in the state. In 1956, Chuck joined the USGS District Headquarters in Cheyenne, Wyoming. He became a regional reports specialist and published a number of USGS reports on the availability and quality of groundwater resources in the state of Wyoming.

In 1961, Chuck moved to Virginia to work out of the Water Resources Division Headquarters. There, he began working with William (Bill) Fischer in the Geologic Division of the USGS on some remote sensing studies. The two scientists were interested in using airborne thermal infrared imagery to measure surface-water temperature and ground water discharge. Their research inquiries were a natural response since they were both familiar with the emerging field of remote sensing. In fact, Chuck had been aware that the Water Resources Division had been using airborne remote sensing methods since 1949 to support hydrologic investigations. Additionally, Bill, a renowned photogeologist and photogrammetrist, was soon to represent the USGS at the First Symposium on Remote Sensing of Environment in February of 1962.

In 1963, Chuck's research partnership with Bill was temporarily interrupted when he was reassigned to the Water Resources Division Mid-Continent Area in the St. Louis, Missouri, Regional Office. In St. Louis, Chuck served as the Acting Chief of the Research Section of the Ground Water Branch. In 1965, NASA initiated the Natural Resources Program (later renamed the Earth Resources Survey Program). As a result of the negotiations between NASA and other agencies, the USGS was given the responsibility of remote sensing and space flight research in four areas: geology, hydrology, cartography, and geography. The hydrology responsibilities were largely assigned to the Water Resources Division. Due to the demands of the program, Chuck was asked to return to Virginia to serve as the first Chief of the Office of Remote Sensing in the Water Resources Division. In this position, he collaborated with Bill and he organized a large number of empirical studies that implemented the use of aerial photographs, infrared images, radar images, and space photographs from the Gemini and Apollo missions.

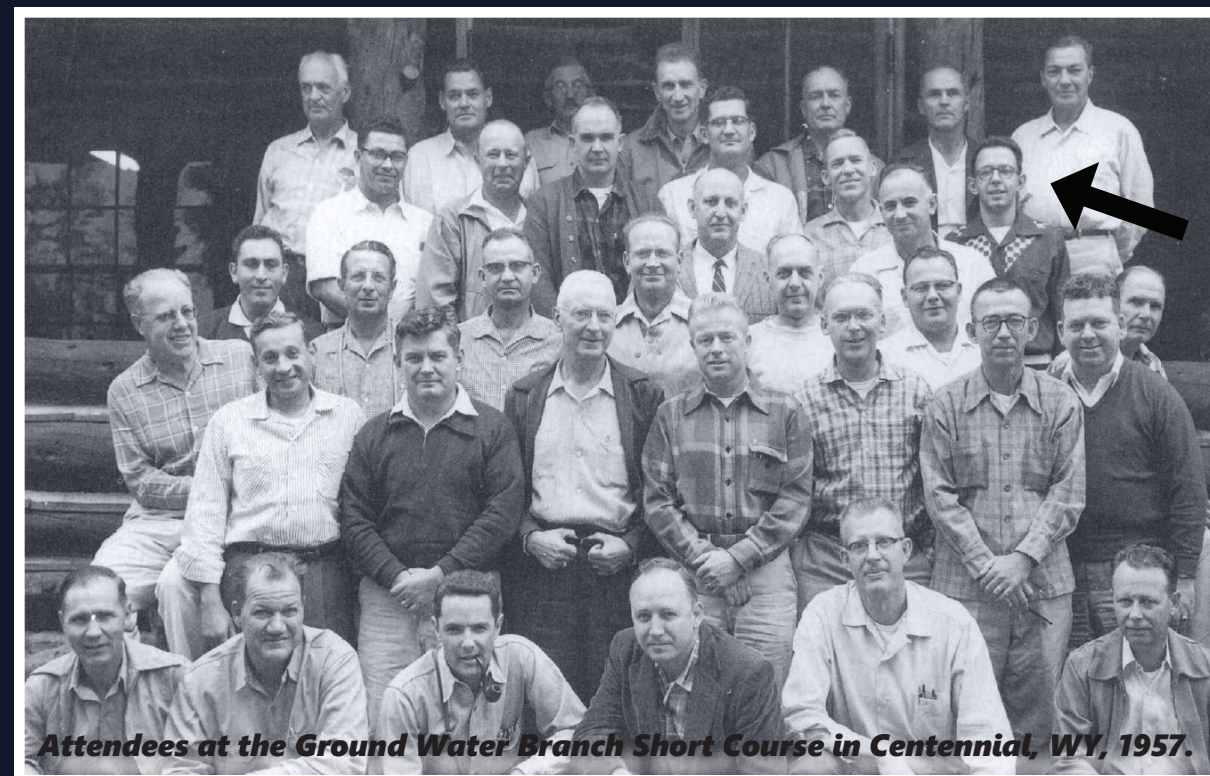
By May of 1966, Chuck had conducted, reviewed, and orchestrated several remote sensing projects in the Water Resources Division. There was mounting evidence that a common source of remotely sensed imagery could benefit society and support natural resources management. Therefore, Bill and Chuck developed a proposal that would ultimately change the way that the Earth was viewed and the way that natural resources were managed. Bill had long demonstrated the value of using color aerial photographs and infrared images to support geologic investigations, and the studies coordinated by Chuck and the Water Resources Division confirmed the value of using remotely sensed images to support hydrogeographic and hydrogeologic studies. Bill and Chuck presented their findings to Dr. William Pecora, then Director of the USGS, and suggested that the USGS begin developing their own remote sensing satellite. Pecora agreed with them and stated that "The course seems clear; we must make and execute bold plans." The bold plans resulted in the Project EROS Press Release on September 21, 1966.

Project EROS was envisioned to be a Department of the Interior program that utilized resources data from aircraft and spacecraft to facilitate the assessment and management of land, mineral, and water resources. The EROS, or Earth Resources Observation Satellite, Program was formally established by Secretarial Order in 1967. Under the EROS Program, Chuck became the Associate Program Manager. In this position, Chuck participated in international remote sensing workshops, facilitated remote sensing research, and coordinated program development. He witnessed his years of hard work and diligence when ERTS-A (Landsat 1) was launched on July 23, 1972. The year 1972 also brought happiness to Chuck in his personal life when he married Elizabeth Anne Schauer on July 9, 1972, just two weeks prior to the launch of ERTS-A.

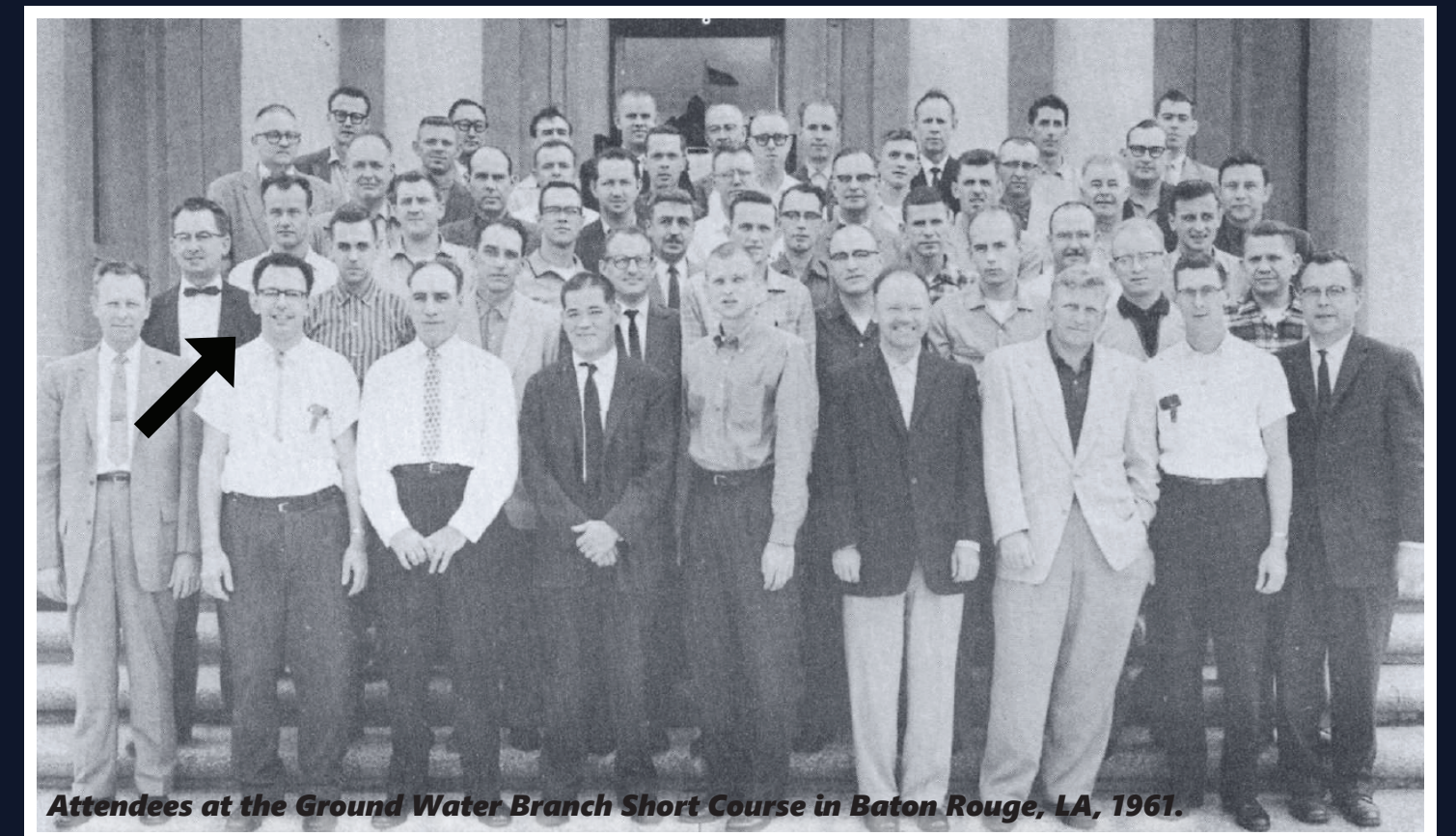
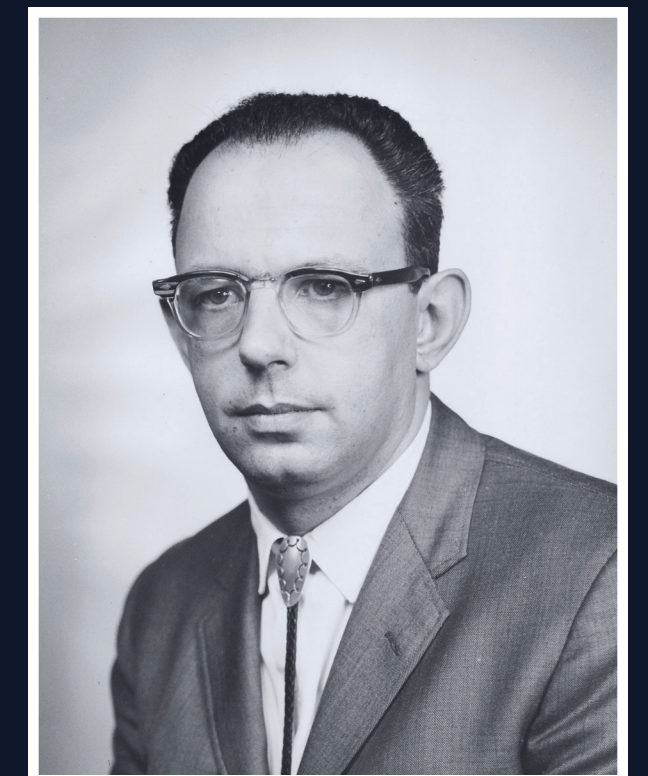
Chuck served as the Associate Manager for the EROS Program until about 1978. At that point, he resumed administrative duties within the USGS and he primarily focused his research on the applications of Landsat data. Through his research, he demonstrated that Landsat imagery proved to be an invaluable resource in assessing and monitoring floods, desertification, fire, and glacier movement. After serving as an extraordinary hydrologist and remote sensing scientist for 32 years at the USGS, Chuck retired on November 1, 1986. During his career, Chuck traveled to every state in United States and to 40 countries throughout the world. He prepared several reports and published numerous journal articles. He discovered a considerable amount about valuable groundwater resources, he impacted science in multiple realms, and he contributed to the vitally important fields of remote sensing and Earth observation.

After retirement, Chuck and Elizabeth moved to Monument, Colorado. Chuck spent his time fostering his diverse interests and talents. In addition to being a recognized authority on water resources, Chuck was a book lover and antiquarian. He was a member of The Friends of the Pikes Peak Library District in Monument and he sold books to help run several library programs. He enjoyed baking bread, collected bread baking books, and contributed to online bread recipes. He enjoyed games, such as Cribbage and Scrabble. He even designed a five player Cribbage board so more than two to three people could play at a time. He ran some statistics on the letter frequency in an electronic Scrabble game and discovered that there was a shortage of vowels. His findings were published in an article titled *Letter-Frequency Bias in an Electronic Scrabble Game*. Lastly, Chuck was a woodworker and he enjoyed turning items on his lathe.

Chuck had an immensely successful career, as is demonstrated by his lasting impact on the Landsat Program. He also had an enthusiasm for living life to the fullest and to making the world a better place. May he rest in peace and inspire us to find our talents and joys that foster positive change.



Attendees at the Ground Water Branch Short Course in Centennial, WY, 1957.



Attendees at the Ground Water Branch Short Course in Baton Rouge, LA, 1961.

Saline-Water Resources of North Dakota
By C. J. ROBINOVE, R. H. LANGFORD, and J. W. BROOKHART

What's Happening to Water?
By CHARLES J. ROBINOVE
U.S. Geological Survey, Washington, D.C.

Infrared Photography and Imagery in Water Resources Research
Charles J. Robinove

TECHNICAL LETTER W-84-10
A PRELIMINARY EVALUATION OF AIRBORNE AND SPACEBORNE REMOTE SENSING DATA FOR HYDROLOGIC USE
By Charles J. Robinove
July 1966

Remote Sensing in Geology, Hydrology, and Geography
Charles J. Robinove
Associate Program Manager
Earth Resources Observation System
U.S. Geological Survey

THE ROLE OF REMOTE SENSING AND SATELLITE MONITORING SYSTEMS IN HYDROLOGIC HAZARD MANAGEMENT
By Charles J. Robinove
U.S. Geological Survey
Reston, Virginia

Computation with Physical Values from Landsat Digital Data
Charles J. Robinove
U.S. Geological Survey
Reston, VA 20192

REMOTE SENSING OF ENVIRONMENT 7, 116-120 (1976)
Interpretation of a Landsat Image of an Unusual Flood Phenomenon in Australia
CHARLES J. ROBINOVE
EROS Program, U.S. Geological Survey, EROS Mail Stop 720, Reston, VA 20192

Remote Sensing Brief
A Radiometric Interpretive Legend for Landsat Digital Thematic Maps
Charles J. Robinove
U.S. Geological Survey
Reston, VA 20192



My Anti-Obituary by Charles Joseph Robinove

This is obviously being written by me while I am alive but I have arranged for it to be published soon after my death. I don't think very many people care about the ordinary details of my life so I will omit those. I am dead so they no longer matter. What matters are those who are left. They are alive so they are infinitely more important than a dead me.

First, and infinitely most important, is **Elizabeth Anne Schauer Robinove**, my wife of almost 50 years as of this writing. She had the good sense (and my luck) to marry me and the endurance to stay with me for the long haul. She is beautiful, loving, smart, capable of doing anything we need, and wonderful at taking care of me in my last years and illnesses. She is irreplaceable.



I have no immediate family, except her, but her family, starting with sisters Paula and Ruthmary, have been a boon to me for almost as long as my marriage. Elizabeth's extended family, mostly in Texas, have been good to know. Our four USAFA cadets, Richard Hansen, Bill Kuykendall, Jeff Smith, and Dylan Baumgartner, whom we sponsored during their years at the Academy, have stuck with us through their Air Force careers and beyond.

Our many friends in the area where we have lived for over 35 years, are too numerous to list them all. I am grateful to all of them for their friendship, generosity, sympathy, and ability to suffer me for as long as they have. But especially, Geoff and Libby Paddle now of Australia and Sherri and Steve Faranda of Colorado Springs who have supported us for such a long time. Of special importance are the people of Elizabeth's Covenant Presbyterian Church who have helped and supported her and therefore me, for 35 years. Many more; friends whom I met at Serranos Coffee Shop, my colleagues in the antiquarian book trade, those who helped and supported me in my scientific career, and so many more. You know who you are and I thank all of you. That is enough; I am gone, you are here and I wish the best good fortune and good health to all of you.