

## Studying the Earth's movements

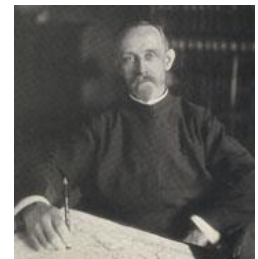
**Two Jesuits, the father of seismology and the “Polar Priest,” brought national prominence to Carroll through their seismology work tracking the world’s movement**

**By John Walsh**



During the 1940s and '50s, John Carroll [University] was known nationally for seismology, the science of earthquakes. That recognition was the result of prominent work done by two Jesuits – Rev. Frederick Odenbach, S.J., and Rev. Henry Birkenhauer, S.J. The former set up shop in Grasselli Tower, and the latter, who also served as the University’s president, was known as the “Polar Priest” because of a trip to Antarctica.

Fr. Odenbach (1857-1933), who was born in Rochester, New York, and graduated from Canisius College in 1881, came to St. Ignatius College, the original name of John Carroll University, in Cleveland in 1893 after completing his training as a Jesuit. Almost immediately after his arrival, he began building a meteorological observatory on the fifth floor of the college building and established seismology as a science option.



*Fr. Odenbach*

Although a biologist, Fr. Odenbach invented his own electrical earthquake detector in 1900, consisting mostly of a glass rod bound with wire that tipped to make contact with an electric circuit when a quake was felt. His next earthquake detector, which was more efficient, used a heavy pendulum hung in a shaft. In 1905, Fr. Odenbach established the John Carroll Seismological Observatory, which was the fourth one in the country to operate seismographs for continuous recording of earthquakes. In 1909, Fr. Odenbach, who had achieved national recognition as a geophysicist and was known as the father of seismology, sent a letter to other Jesuit institutions proposing the development of a network of seismological observatories that became the Jesuit Seismological Association in 1925.

While the John Carroll campus in University Heights, Ohio, was being developed in the early 1930s, Fr. Odenbach proposed a two-story observatory that would include accommodations for seismographical and meteorological apparatuses as well as quarters for a small colony of astronomers. The observatory would be on Washington Ave. (now Blvd.), and from the south

side, a tunnel would lead to an underground vault that would house the seismograph. But the proposed observatory didn't materialize because of lack of funding.

In April 1932, when Grasselli Tower was being built, Fr. Odenbach moved into the tower after construction had been temporarily halted. Accompanied by his dog, Hector, and a canary, he set up his equipment in the tower, which became his newfound workshop. He cooked his food there and slept in an arctic sleeping bag. Fr. Odenbach, eminent in his study of earthquakes, remained in Grasselli Tower until his superiors called him back to the West Side shortly before his death in 1933. Rev. Joseph Joliat, S.J., succeeded him as the director of the observatory.

### **The “Polar Priest”**

In 1947, Fr. Birkenhauer (1914-2003), also a seismologist and geophysicist, was assigned to help Fr. Joliat by installing new photographic recording instruments mounted on concrete piers in a vault sealed off from daylight below Rodman Hall. Later, as director of the observatory, Fr. Birkenhauer began his seismological work by laying out a program with two basic tenets: first, a scientific research program concerned with problems of earthquake seismology, empirical and theoretical; and two, a program of service to the community. Fr. Birkenhauer also worked with Edward Walter, Ph.D., a mathematics professor who was associate director of the observatory under Fr. Birkenhauer and later became its director.



*Fr. Birkenhauer*

Throughout the years, the projects the seismology observatory carried out varied. During the 1950s, the federal government once asked its staff to help find ways to detect secret underground nuclear explosions – a request connected to the announcement that the Russians were going to resume nuclear testing. The observatory also received a research grant from the U.S. Air Force. Fr. Birkenhauer and Walter traveled to Puerto Rico to measure the force of industrial blasts. Fr. Birkenhauer also was called on as a consultant for companies that were subject to civil lawsuits because of their operations that involved explosions near residences.

After a decade of being the director of the observatory (which moved from Rodman Hall to the Bohannon Science Center in 1968 and lasted at Carroll until 1992), Fr. Birkenhauer gained national recognition for his scientific work. He studied the composition of rocks under the polar ice cap and recording seismic waves from earthquakes when he joined a U.S. research team, the Wilkes Station party, in Antarctica as chief seismologist and spiritual adviser. He spent about 15 months there in 1957-58, earning him the nickname the “Polar Priest.” Wilkes Station was one of seven U.S. research stations built for the International Geophysical Year 1957-1958. In addition to his scientific work in Antarctica, Fr. Birkenhauer said Mass for Wilkes Station personnel and baptized 10 crew members (there were 27 on the trip). While at the South Pole, he and other crew members were caught in a whiteout. The mainly ice-free Birkenhauer Island in Antarctica was named after him.



*Fr. Birkenhauer in Antarctica*

Fr. Birkenhauer returned to campus in 1958 – with copper-bearing ore from the polar region – and was named University Heights Citizen of the Year.

### **Back on campus**

After his trip to Antarctica, from 1962 to 1968, Fr. Birkenhauer studied in Rome, served as a delegate to the Jesuit general meeting there, and served as a spiritual director for young Jesuits throughout Cleveland and Michigan. In 1968, he returned to Carroll as assistant to the president, who, at the time, was Rev. Joseph Schell, S.J. Two years later, Fr. Birkenhauer became the University's 19th president, serving until 1980.

While president, Fr. Birkenhauer remained active in the classroom as a physics professor as well as in civic, educational, and professional activities. He aimed to maintain financial stability of the University but increased the personal development of students. He also:

- maintained enrollment levels between 3,600 and 3,900 despite tuition increases and a dwindling market;
- operated without budget deficits;
- gave personal attention to students and their problems;
- inaugurated master's programs in business, religious education, and human services;
- constructed the swimming pool and Sutowski Hall;
- struck a balance between reaction to change and maintaining the school's Jesuit tradition; and
- invited Mother Teresa of Calcutta to campus to receive an honorary doctorate in 1978.

In 1983, Fr. Birkenhauer celebrated 50 years as a Jesuit, and then a few years later, received the Centennial Medal during a special Mass at Rodman Hall. The Centennial Medal was a special medal presented to selected alumni to help celebrate the University's 100th anniversary. When he retired in 1980, he was presented with an honorary degree and the Alumni Medal (with honorary alumni status). After his presidency, he lived at the Jesuit Retreat House of Cleveland in Parma, Ohio, and worked with the Cleveland Catholic Diocese. He died of heart failure on June 13, 2003, at Colombiere Center, Clarkston, Michigan, where he had been a resident for four years. JCU

### ***Birkenhauer background***

*Rev. Henry Birkenhauer, S.J., was born in Toledo, Ohio, and graduated from St. John's High School. He attended Loyola University Chicago for two years before entering the Society of Jesus in 1933 at the novitiate in Milford, Ohio. He was ordained a Jesuit priest in 1945, but not before earning a B.A., M.A. and licentiate in sacred theology from Loyola and an M.S. and Ph.D. in geophysics from Saint Louis University. He came to John Carroll in 1946 as a math instructor after briefly teaching at Xavier University. The following year he was appointed director of the seismological observatory and chairman of the mathematics department. Fr. Birkenhauer also served as dean of the graduate school.*