

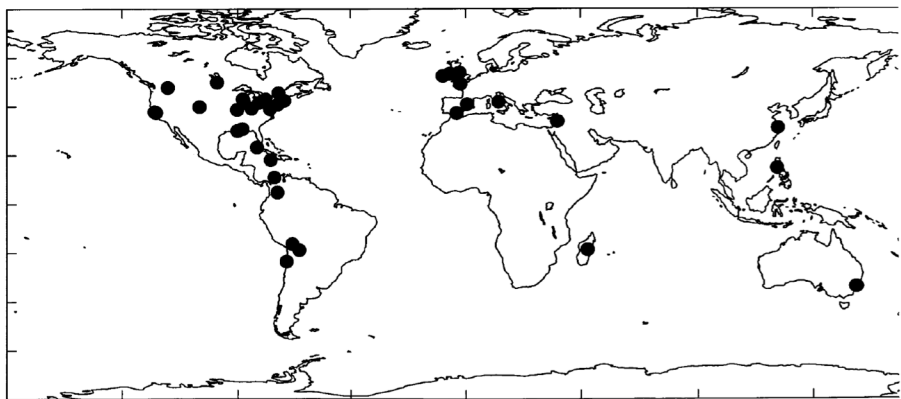
# The Jesuit Contribution to Seismology

*“The contribution to seismology of the Society of Jesus as an institution through its colleges and universities, and its members as individual scientists, forms an important chapter in the history of this science.”<sup>1</sup>*

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**Jesuits have been known for hundreds of years for their dedication to the natural sciences.**

Priests of the Society of Jesus pioneered much of our early study of earthquakes, both in the field and in scientific theory, starting as early as the 1500s. But seismology was more than a fascination with the natural world for these Catholic priests—studying earthquakes also presented the opportunity to serve the public, addressing the devastating effects that earthquakes have on communities around the world. Jesuits, called to serve the world as “people for others,” thus found an earthly calling in the task of tackling our planet’s rumblings.



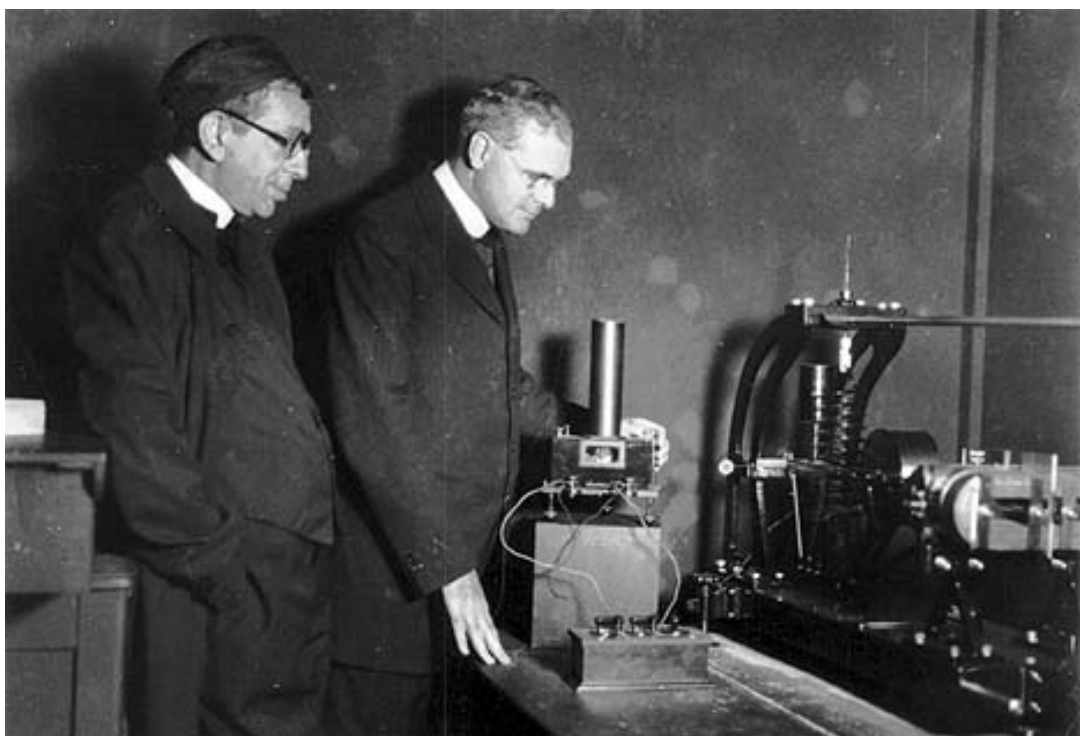
**Map of Jesuit seismic stations around the world<sup>1</sup>.**

The history of Jesuit seismology can be divided into two periods.

- ❖ From the 16th to the 18th century, Jesuits studied single earthquakes, concentrated in Europe and the Americas, and theorized about the causes behind these geophysical phenomena.
- ❖ Beginning in the 19th century, Jesuits established a great number of seismographic stations around the world—from a seismograph in Madagascar in 1899 to a station in Lebanon in 1910. **Jesuit seismographic stations in Africa, Asia and South America were commonly the first installed and oftentimes were the only instruments there for years.** The Jesuit Seismological Association (JSA) was founded in North America in 1909, through which the **first seismographic network of continental scale with uniform instrumentation** was coordinated<sup>2</sup>.

**Fr. James B. Macelwane, S.J.** (1883-1956), the “best-known Jesuit seismologist,” was a pioneer of American seismology. He revitalized the JSA in 1925, was a professor of physics and geology, established the geophysics department at St. Louis University, advised many doctoral students, served as president of the American Geophysical Union, and established the first chain of seismographs in northern California.

Fr. Macelwane sought to bring seismology beyond the purely academic world. In 1936, he published **the first textbook on seismology in the US**, *Introduction to Theoretical Seismology Part I: Geodynamics*. It was the first widely read textbook to cover seismic wave theory in detail while remaining graspable by the average student. In 1947, he published *When the Earth Quakes*. Through this popular book, he sought to bring a scientific but accessible understanding of earthquakes to the general public<sup>3</sup>.



**Fr. Macelwane (right) and a fellow professor examine an electromagnetic seismograph in 1923 at Georgetown University<sup>4</sup>.**

1. Udías, A., and Stauder, W., 1996, The Jesuit Contribution to Seismology: Seismological Research Letters, v. 67, no. 3, p. 10-19.  
2. Udías, A., 2009, Jesuits' studies of earthquakes and seismological stations: Geological Society of London, v. 310, p. 135-143.  
3. American Geophysical Union, [www.agu.org](http://www.agu.org).  
4 St. Louis University Archives, [www.slu.edu](http://www.slu.edu)