

# Managing precision and stabilizing local knowledge

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In 1911, a meridian circle manufactured by A. Repsold & Söhne in Hamburg, Germany, was installed at the National Astronomical Observatory of Chile under the watch of Friedrich W. Ristenpart, a German astronomer and the observatory's director. The installation was an essential step in Ristenpart's goal of relocating the observatory to gain better sky visibility on the south side of Santiago. As a precision tool, this new meridian circle would support the observatory's international work of establishing the official time, determining latitudes and longitudes, and cataloguing stars and planets.

Proper installation and calibration were required to ensure the instrument could accurately perform this "detail work." Ristenpart and the manufacturer engaged in extensive correspondence to achieve precision during construction, transportation, and installation. History of science scholar Carlos Sanhueza-Cerda examines this correspondence in "Stabilizing Local Knowledge: The Installation of a Meridian Circle at the National Astronomical Observatory of Chile (1908–1913)," published in the December 2022 issue of *Isis: A Journal of the History of Science Society*.

Before the meridian circle was installed, Ristenpart sent communications to A. Repsold & Söhne to learn how to best calibrate the German instrument in its new home in Chile. This communication was vital—the meridian circle's accuracy depended on both the quality of the instrument and its calibration in the context of installation. The manufacturers intended for the meridian circle to operate in the

Northern Hemisphere, so recalibration was necessary to ensure [accurate measurements](#) in the Southern Hemisphere.

The new [observatory](#) and telescopes were built at the same time, allowing for better coordination and placement of all parts. The building was modified to provide proper light, and the meridian circle was adapted to ensure appropriate height control. Auxiliary parts from Germany, including the observation chair, were recalibrated upon arrival.

Local labor was essential to build the new [observatory](#) and to install and calibrate the meridian circle. Ristenpart developed detailed training material for local workers, but also asked A. Repsold & Söhne to simplify the instrument's parts—a request that underscored his mistrust of local laborers. Eventually, the advice of a Berliner technician hired by the Chilean government convinced Ristenpart that local parts and labor were not insufficient for the project.

Six years after the meridian circle arrived, the German instrument measured the exact geographic latitude of Chile. Its precise performance relied on A. Repsold & Söhne manufacturing, Ristenpart's vision, and the labor of local architects and [construction workers](#), proving that "an object cannot function and fulfill its purpose in isolation."

**More information:** Carlos Sanhueza-Cerda, Stabilizing Local Knowledge: The Installation of a Meridian Circle at the National Astronomical Observatory of Chile (1908–1913), *Isis* (2022). [DOI: 10.1086/722407](#)

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