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**The Ertel Meridian Circle (1858-1912) of the Neuchâtel Observatory: Material Analysis and Culture of Precision****Julien Gressot & Romain Jeanneret**  
**Espace Tilo-Frey 1, 2000 Neuchâtel, Suisse**  
[julien.gressot@unine.ch](mailto:julien.gressot@unine.ch) ; [romain.jeanneret@unine.ch](mailto:romain.jeanneret@unine.ch)**Keywords:** *Material analysis, Meridian circle, measure of time***Abstract (300 words or less)**

When the *Observatoire cantonal de Neuchâtel* was founded in 1858-1859, the director Adolphe Hirsch (1830-1901) was in charge of setting up the entire instrumental system. He contacted well-known manufacturers like Ertel und Sohn to provide a meridian circle in order to determine time with accuracy. For over a year, frequent letter exchanges between Hirsch and Ertel allow today to follow the negotiations between scientific needs, budgetary constraints and manufacturer's possibilities. During the realization of the Meridian circle, Hirsch decided to implement the recording of observation with a chronograph in order to increase the accuracy of time determination. This improvement had a consequence on the construction of the meridian circle and its accessories, leading to a close and fruitful collaboration with Mathäus Hipp (1813-1893).

The Meridian circle was installed in September 1859, and, since then, the Observatory personnel kept on studying it in order to determine its instrumental errors. Once operational, Hirsch used it for his researches on physiological reaction time in order to minimize the observer error. The quest to obtain the most accurate result possible continued until the replacement of the meridian circle in 1912.

Introducing the Ertel Meridian Circle and the richness of related correspondence and documents, will allow us to study the establishment of a culture of precision at the Neuchâtel

Observatory. Which kind of strategies did the Observatory implement for acquiring its reputation of precision over time? What was the role of scientific instruments and of the Ertel & Son Meridian Circle in this process? How could a newly created Observatory manage to occupy a relevant place in the international network of scientific institutions? The aim of this talk is to answer these questions and to show the steps involved in obtaining a highly-accurate scientific instrument and keeping it operational for more than half a century.

**Short biography and research interests (200 words or less)**

**Julien GRESSOT**, PhD student, obtained a Master's degree at the University of Neuchâtel in historical sciences with honours summa cum laude and received the Werner Günter prize for a thesis subject in environmental history on the case of a company treating special waste that caused significant pollution. He then joined the SNF project *L'Observatoire cantonal de Neuchâtel (1858-1948): cultures de la précision, économie de la qualité et « marchandisation » de l'heure* led by Professor Gianenrico Bernasconi. In this context, he is preparing a PhD about the astronomical culture of precision in the Observatory of Neuchâtel through the analysis of technical devices, actors, spatial configuration and scientific activities.

**Romain JEANNERET**, obtained a Master of Arts in Conservation-Restoration at the Haute École Arc (HE-Arc CR) in Neuchâtel, Switzerland. He worked for 4 years as a research assistant at HE-Arc CR. Its activities are shared between several fields, including the "OBS" project on the interdisciplinary study of the collections of the Observatory of Neuchâtel. It is following this last research that he joined the team of the University of Neuchâtel, as a scientific collaborator on the present project.

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