

# Rara Magnetica

## A Repository of Historical Sources Related to the Premodern Research on Magnetism

Created by Christoph Sander ([ORCID](#) | [private website](#))

[raramagnetica.de](http://raramagnetica.de) | [doi.org/10.48431/res/qk19-bj96](https://doi.org/10.48431/res/qk19-bj96)

*Rara Magnetica* (1269-1599) is the name of Gustav Hellmann's well known anthology published in 1898 ([PDF](#)). With this collection, he sought to provide access to some of the earliest, yet rare publications in the field of geomagnetism that predated William Gilbert's landmark publication *De Magnete* of 1600. The digital project and platform *Rara Magnetica* translates these efforts into the digital domain, going far beyond digital editions. The need to publish important but understudied sources is most efficiently achieved by providing curated digital structured and linked data.

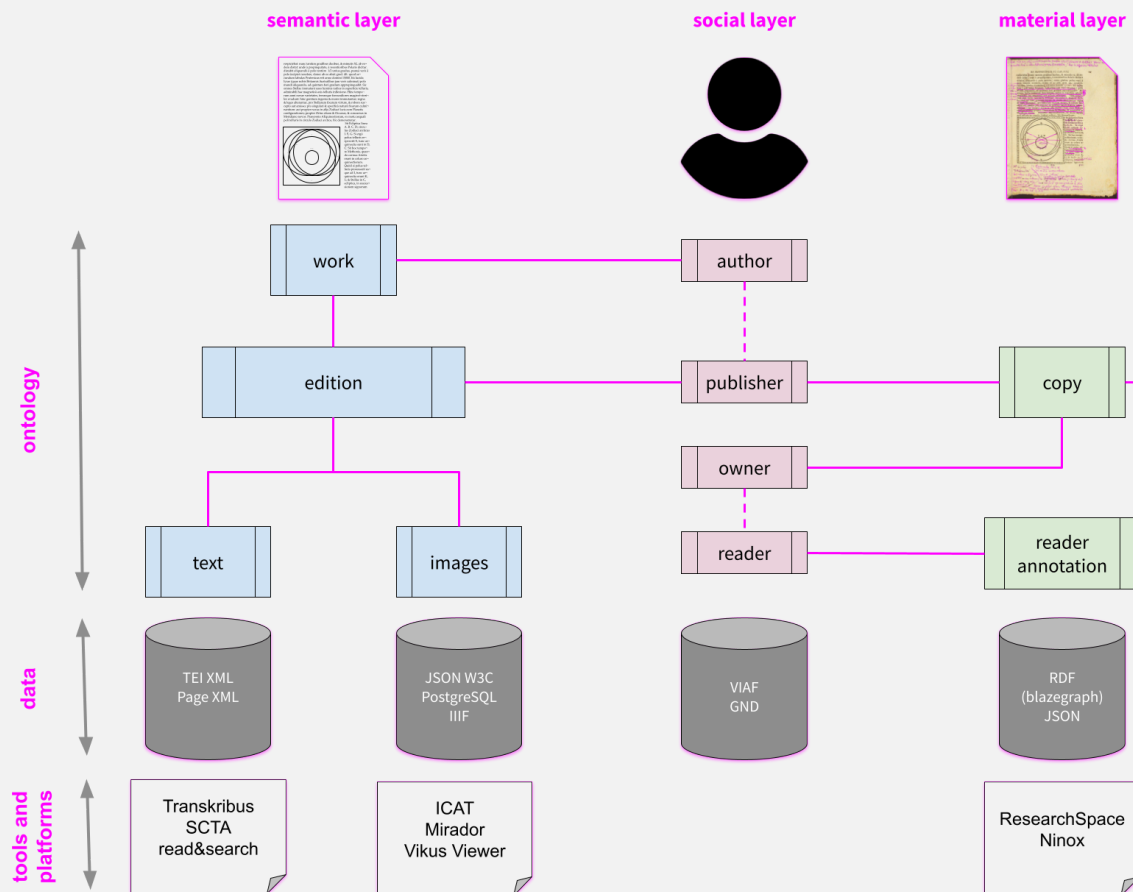
*Rara Magnetica* hence – as an ongoing project – is both a repository and an interactive research platform. It publishes scans and transcriptions of (many hitherto unpublished) sources, data visualizations, and databases, all related to the premodern study of magnetism. Moreover, it provides various tools to investigate each of these resources independently and in combination. A major aim in fact is to enhance multimodal analyses that transcend media barriers by allowing to research imagery along with full texts, material sources along with their conceptual content. This is achieved by various but interlinked tools providing different ways of looking at the same sources.

*Rara Magnetica*'s underlying data comprise three layers (see [fig. 1](#)). A semantic layer relates to works as carriers of ideas, consisting of text and images. A material layer related to the concrete manifestations of works, i.e. the unique copies of printed editions that may carry readers' annotations (see [fig. 2](#)). The social layer connects the two layers: Persons in different roles and capacities created these conceptual and physical objects. The data underlying the three layers are stored in different formats and with different metadata. While drawing on established standards where possible, the repository also created novel vocabularies and ontologies to neatly translate historical phenomena into structured data. The user perspective is reflected by the integration of different tools and platforms to visualize and explore the data.

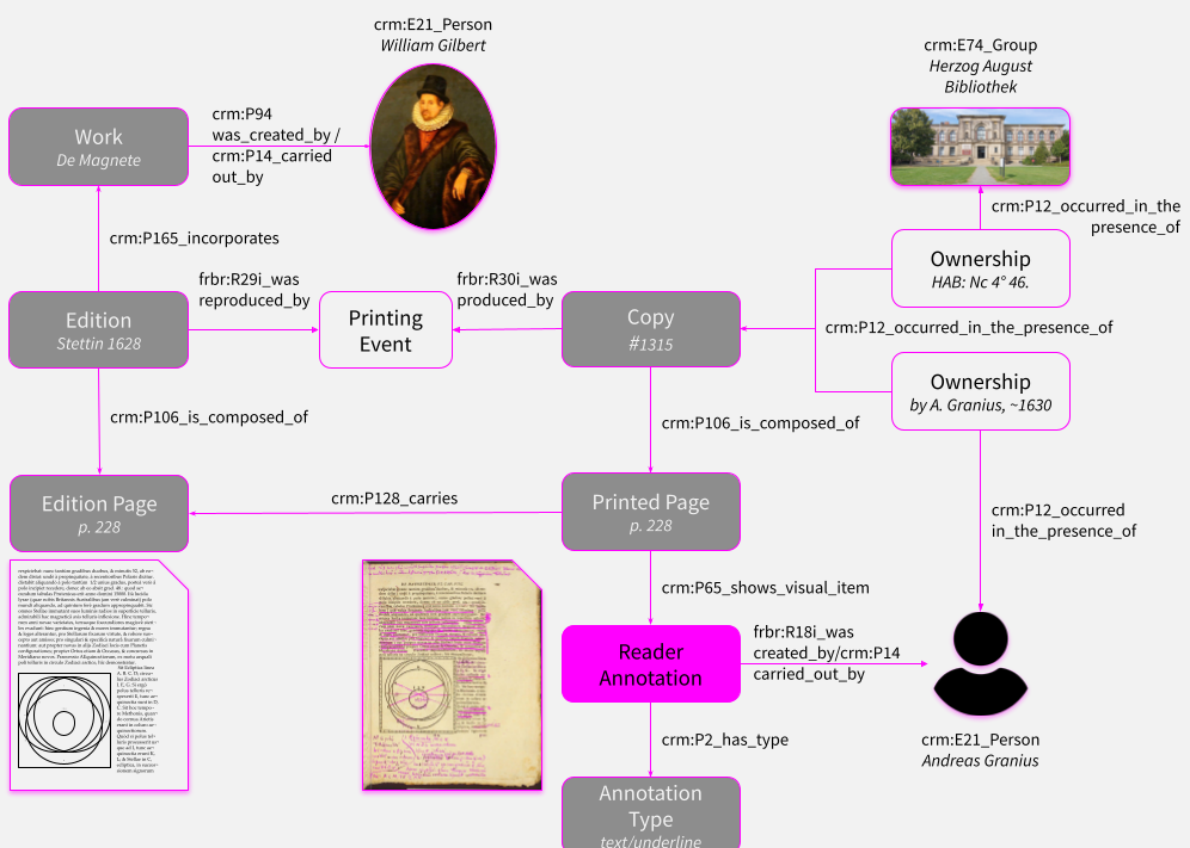
*Rara Magnetica* will appeal to historians of the book exploring its census and annotation database (see [Magnetic Margins](#)), art historians tracing the evolution of scientific imagery, philologists seeking additional textual resources in premodern languages, historians of science reconstructing early understandings of magnetism, and digital humanists seeking a framework to organize interlinked textual and visual data drawn from a wide range of sources. However, its most important users are those aiming to discover and investigate historical sources across disciplines and media. This use of the platform has already been successfully put into practice in my teaching and publications.

*Rara Magnetica* was developed in an individual effort and as a side project, but with great support from institutions in Rome, Boston, Berlin, and Kansas City, and many helping hands and great colleagues (see [credits](#)). Its data and code is published under CC BY-NC-SA 4.0 in OpenAccess and committed to Open Linked Data (see [Github](#)). It is richly documented (see [documentation](#)), ongoing and continuously updated.

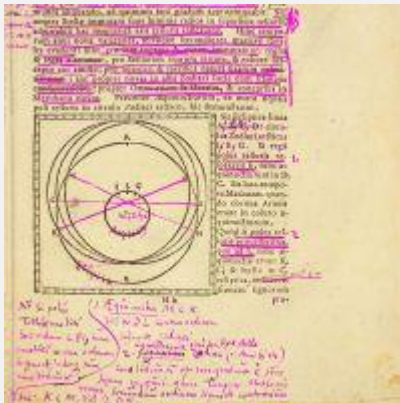
**Figure 1: Conceptual Map of Rara Magnetica**



**Figure 2: Simplified Ontology of Magnetic Margins**



## Highlights on Rara Magnetica



Magnetic Margins provides a census of major early-modern publications on magnetism and maps readers' annotations in the individual copies of these editions

- [Magnetic Margins](#) (updated frequently)
  - [conceptual explanation of the data](#)
  - [credits](#)



Images related to magnetism in early-modern science (1500-1650)

- [Vikus viewer for all images](#)
  - [list of all sources included](#)
  - [statistics for all tags](#)
  - [explanation of tagging vocabulary](#)

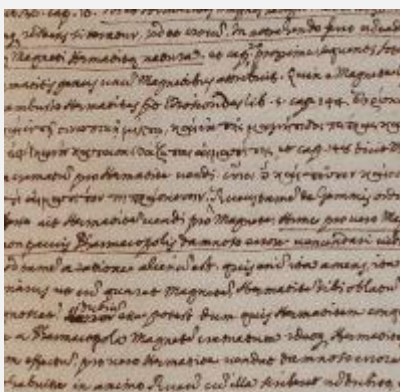
All of the c. 175 images found in manuscript and printed copies of Peregrinus' *Epistola de magnete* (1269)

- [Vikus viewer for all images](#)
  - [list of all sources used](#)



Leonardo Garzoni: *Trattato delli maravigliosi effetti della calamita et delle cause loro* (c. 1590), following the manuscript in Madrid, National Library of Spain, Mss/2020

- See full transcription on [read&search](#) and as plain scan (structured IIIF)



Leone Allacci: *De magnete libri tres* (1625), following the manuscript in Rome, Biblioteca Vallicelliana, Allacci LXXVII

- See [scan \(structured IIIF\)](#), digitized by Enrico Fontolan and Christoph Sander

...  or watch a video demonstration at [raramagnetica.de/video.html](http://raramagnetica.de/video.html)

## Bibliography

- Sander, Christoph. *Magnes: der Magnetstein und der Magnetismus in den Wissenschaften der Frühen Neuzeit*. Mittellateinische Studien und Texte 53. Leiden; Boston: Brill, 2020. <https://doi.org/10.1163/9789004419414>.
- Sander, Christoph. "Der Magnetstein in geologischen Theorien der Vormoderne." *Der Anschnitt* 74, no. 2–3 (2022): 98–108.
- Sander, Christoph. "Early-Modern Magnetism: Uncovering New Textual Links between Leonardo Garzoni SJ (1543–1592), Paolo Sarpi OSM (1552–1623), Giambattista Della Porta (1535–1615), and the Accademia Dei Lincei." *Archivum Historicum Societatis Iesu* 85, no. 2 (2016): 303–63.
- Sander, Christoph. "How to Send a Secret Message from Rome to Paris in the Early Modern Period: Telegraphy between Magnetism, Sympathy, and Charlatanry." *Early Science and Medicine* 27, no. 5 (2022): 426–59. <https://doi.org/10.1163/15733823-20220056>.
- Sander, Christoph. "Images in Petrus Peregrinus' Epistola de Magnete (1269-1650)," 2021. <https://doi.org/10.48431/res/qk19-bj96/peregrinus/vikus/>.
- Sander, Christoph. "Magnetic Margins. A Census and Annotations Database," 2022. <https://doi.org/10.48431/res/qk19-bj96/magmar>.
- Sander, Christoph. "Magnetism for Librarians. Leone Allacci's *De Magnete* (1625) and Its Relation to Giulio Cesare LaGalla's *Disputatio de Sympathia et Antipathia* (1623)." *Erudition and the Republic of Letters* 5, no. 3 (2020): 274–307. <https://doi.org/10.1163/24055069-00503002>.
- Sander, Christoph. "Magnetism in an Aristotelian World (1550-1700)." In *Alte und neue Philosophie - Aristotelismus und protestantische Gelehrsamkeit in Helmstedt und Europa (1600-1700)*, edited by Bernd Roling, Sinem Kılıç, and Benjamin Wallura. Wolfenbütteler Forschungen. Wiesbaden: Harrassowitz Verlag, 2022, forthcoming.
- Sander, Christoph. "Magnetism in Renaissance Science." In *Encyclopedia of Renaissance Philosophy*, edited by Marco Sgarbi, 1–6. Dordrecht: Springer International Publishing, 2018. [https://doi.org/10.1007/978-3-319-02848-4\\_944-1](https://doi.org/10.1007/978-3-319-02848-4_944-1).
- Sander, Christoph. "Magnetismus und Theamedismus. Eine Fallstudie zur Kenntnis der magnetischen Abstoßung in der Naturkunde der Frühen Neuzeit." *Sudhoffs Archiv* 101, no. 1 (2017): 42–72.
- Sander, Christoph. "Magnets and Garlic: An Enduring Antipathy in Early-Modern Science." *Intellectual History Review* 30, no. 4 (2020): 523–60. <https://doi.org/10.1080/17496977.2019.1648924>.
- Sander, Christoph. "Nutrition and Magnetism. An Ancient Idea Fleshed out in Early Modern Natural Philosophy, Medicine and Alchemy." In *Nutrition and Nutritive Soul in Aristotle and Aristotelianism*, edited by Roberto Lo Presti and Giouli Korobili, 285–318. Topics in Ancient Philosophy. Berlin: De Gruyter, 2021. <https://doi.org/10.1515/9783110690552-015>.
- Sander, Christoph. "Rara Magnetica. A Repository of Texts and Images Related to the Premodern Research on Magnetism," 2022. <https://doi.org/10.48431/res/qk19-bj96>.
- Sander, Christoph. "Rendering Magnetism Visible. Diagrams and Experiments between 1300 and 1700." *Centaureus* 64, no. 2 (2022): 315–59. <https://dx.doi.org/10.1484/J.CNT.5.131247>.
- Sander, Christoph. "Teaching Magnetism in a Cartesian World, 1650-1700." In *Descartes in the Classroom: Teaching Cartesian Philosophy in the Early Modern Age*, edited by Davide Cellamare and Mattia Mantovani, 313–42. Medieval and Early Modern Philosophy and Science 35. Leiden; Boston: Brill, 2022. [http://doi.org/10.1163/9789004524897\\_016](http://doi.org/10.1163/9789004524897_016).
- Sander, Christoph. "Tempering Occult Qualities. Magnetism and *Complexio* in Early Modern Medical Thought." Edited by Chiara Beneduce and Paul J. J. M. Bakker. *Early Science and Medicine* (2023): forthcoming.
- Sander, Christoph. "Terra AB: Descartes's Imagery on Magnetism and Its Legacy." In *Cartesian Images. Picturing Philosophy in the Early Modern Age*, edited by Davide Cellamare and Mattia Mantovani. Medieval and Early Modern Philosophy and Science. Leiden; Boston: Brill, 2023, forthcoming.