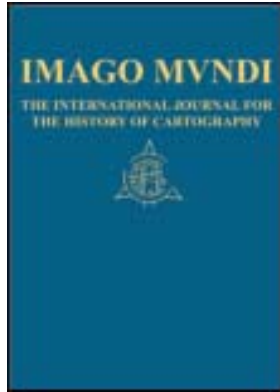


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Geographies of Mars: Seeing and Knowing the Red Planet. By K. Maria D. Lane

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Phrygio, Dürer and others. 'Time Tables' (2) deals with the chronological chart in early modern print-culture. 'Graphic Transitions' (3) takes up baroque charts by a host of artists, including Kepler, Bianchini, Buno and Vico. 'A New Chart of History' (4) examines how refinement in engraving led to Priestley's innovations in the design of the time-map. 'Frontier Lines' (5) looks at the chronography of American historical charts as shaped by the ideologies of manifest destiny and millennialism, one of which is Sebastian Adams's fabulous timeline (17 ft × 2 ft) that resembles an ichnographic view of a giant rail station. 'A Tinkerer's Art' (6) shows how accelerated travel and the telegraph gave rise to scientific and practical timetables. 'Outside and Inside' (7) treats chronological figuration in twentieth- and twenty-first-century art, from Dada to Huang Yong Ping's *Carte du monde* (2007), and from diagrams in journals of atomic science to John Cage. 'Big Time' (8) shows that chronograms are ubiquitous, whether on computer screens, in Google News and Finance or in arrangements of time-sensitive data in internet start-up grids. Today's designers of electronic chronologies, the authors conclude, do well to remember Eusebius and Priestley for models of diagrams that are clear, 'intuitive and mnemonic'.

The book opens new paths of inquiry into the vexing relations of the diagram and cartography. As in early modern mapping, it shows how time resists simple graphic calculation and representation. The 316 (mostly coloured) illustrations, accompanied by informative legends, turn the book into a prismatic object, a variegated text and diagram of the history of chronicle. It is a wondrous point of reference for the study of graphic reason.

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Geographies of Mars: Seeing and Knowing the Red Planet. By K. Maria D. Lane. Chicago and London: The University of Chicago Press, 2011. ISBN 978-0-226-4707-8. Pp. xii, 266. US \$45.00; STD £29.00 (cloth).

In 1877, Mars was unusually close to Earth, and the Italian astronomer Giovanni Schiaparelli made some detailed drawings of his naked-eye observations at the telescope. He sketched light and dark areas, as Galileo had done for the Moon in 1609, but also a series of dark lines connecting various features. The dark areas might be water, so he called the lines emanating from them *canali*. As then and today, Italian-English dictionaries translate *canali* as 'channels'—clearly implying natural waterways. The British press decided the correct translation was 'canals'—clearly implying artificially constructed features, thereby indicative of a highly advanced civilization capable of planet-wide engineering projects far beyond anything possible on Earth. If Percival Lowell (1855–1916) had not decided that his search for a meaningful career had now found its goal, the 'canals of Mars' would have been a minor episode in the history of science. Lowell, however, was the wealthy son of a famous Boston family, and this enabled funding of a private observatory and a few astronomers to work for him. Lowell's enchanting and driving personality created and sustained the 'Mars Furor' for decades.

It was all nonsense. The observations of canals were all wrong, and attempts to use photography as proof

independent from his personal drawings were self-dillusional. Professional astronomers had reactions ranging from embarrassment for the field (as with astrology, then and now) to the presentation in peer reviewed journals of strong scientific evidence for negligible water on Mars. Not only did that not matter, it tapped into the desire of the American popular press to champion the underdog, thereby promoting Lowell's remarkable salesmanship skills. This story has been told many times in books and articles in the history of astronomy literature. As those accounts show, Lowell was a far more complex man, with records of accomplishment in many fields that go beyond my simple account above.

Maria Lane brings to this discussion a new viewpoint, that of a geographer. Lowell essentially ignored the ever-demanding roles of rigorous physical science that were creating the new field of astrophysics during this period. Lane sees the tools and methodologies of geography—also struggling to emerge as a professional discipline—as being lent readily to the popularizers of *Mars as the Abode of Life* (one of Lowell's book titles), without regard for how outlandish their uses might be. Lane finds a way to relate virtually every aspect of the Mars furor to 'the geographer's gaze'—a phrase used so often (four times on page 104 alone) that it has its own entry in the index. It is not clear why any geographer would want to claim credit so vigorously for pseudo-science.

The initial chapters deal with the geography-claimed roles and foundations of site surveys for new observatories, the rigours of mountain life, and the drawing of maps from observations. Astronomers (such as this reviewer) might consider all of this to be a detailed study of the obvious. The book then branches into some far more interesting topics. Cultural and political geography, as well as the sociology of science, finds links to the Mars furor in well-told ways. The role of Alfred Russel Wallace (the 'other Darwin') is a particularly compelling and expertly done account, explaining in part why Britain did not indulge itself in the silliness created by its own press. The discussions of what constitutes an exceptional society—postulated for Mars with analogies pro and con from Earth—are the most interesting aspects of the book for me. The account Lane offers is based on a broad use of primary materials, well-documented secondary accounts, and excellent use of newspaper clippings. There are many interesting figures and illustrations, all in black and white, yet with a distressing number poorly printed.

In summary, Lane offers a most unusual view of a well-known episode in astronomy. It broadens the traditional treatment in a way similar to how Galileo's work was interpreted by art historian Samuel Edgerton. Galileo's impact was so immediate owing to his training in *chiaroscuro*. Galileo thus had an 'artist's gaze'—making the Moon a 'real place' with mountains and shadows that provoked readily available analogies to terrestrial geography. Galileo's lunar maps portrayed reality, Schiaparelli's and Lowell's maps were fantastic errors that led to unfounded speculations. There is a lesson here for artists, astronomers, social scientists and journalists. Lane's 'geographer's gaze' is particularly relevant to the last two categories.

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