Geographies of Mars

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WILL the NEW YEAR SOLVE the RIDDLE of MARS?
Positive Assertion by Professor Lowell, Based on His Latest Discoveries, Indicate That Our Nearest Planetary Neighbor Is Peopled by a Race Superior to Mankind.
Maps by E.M. Antoniadi in Knowledge, 1902
Overview

- Transitions in Mars cartography
- 1877-1878 mapping controversy
- Maps and the inhabited Mars hypothesis
- Mars maps after 1909
Pre-cartography

Christian Huygens, 1659

Johann Schroeter 1800
Cartography proper

Mädler and Beer, 1840
Map projections

Stereoscopic projection
Proctor 1869

Mercator projection
Proctor 1868
Transition in naming of surface features
Maps of 1877-78

Nathaniel Green

Giovanni Schiaparelli
Production of Green’s map

- Observed from Madeira
- 2 months of observation
- 41 sketches, 2 hours each
- Map is composite
Production of Schiaparelli’s map

- Observed from Milan
- 7+ months of observation
- 31 drawings, 100+ sketches
- Map not composite
Maps of 1877-78

Nathaniel Green

Giovanni Schiaparelli
Maps of 1877-78

Nathaniel Green

Giovanni Schiaparelli
“The only reason I can see for this attempt to discard the old names is that they were of English application, and so hurt the self-love of all who are not English. At any rate the selection of new names seems to have been made on the principle that no English need apply. … [The names chosen] are a remarkably evil sounding lot.”

Edwin Holmes, in the *Journal of the British Astronomical Association*
The kindness of Monsieur E. M. Antoniadi enables us to meet the wishes of several of our correspondents who have asked for a chart of Mars brought up to date, and embodying the most trustworthy researches. The chart is based chiefly upon the works of Schiaparelli during the oppositions of from 1892 to 1896 inclusive, and upon the successive Reports of the Mars Section of the British Astronomical Association, together with M. Antoniadi's own long-continued observations.

North Polar Region of Mars.

South Polar Region of Mars.

Looking for Lights on Mars.
Percival Lowell, 1905
From Mars and its Mystery, by E. Morse, 1905
Sketches by W. Leonard, 1907
Lowell’s cartographic process
Importance of cartography to the Mars canal episode

- Maps established the authority of the inhabited-Mars hypothesis
- Map-related controversies spurred interest in Mars
- The iconic image of canal-covered Mars was purely an artifact of cartographic projection
Importance of cartography to the Mars canal episode

Did maps influence the post-1909 decline of belief in an inhabited Mars?
Lowell’s photographs of Mars: “The photographic plate cannot lie.”
Lowell expedition to the Andes 1907

9,000 images of Mars recorded on photographic plates
Lowell’s photographs published in *The Century Magazine*, 1907

Before long, cables began to arrive at Flagstaff which showed that the expedition had met with unqualified success—success indeed beyond expectation, and following on their heels as fast as steam could bring them came the actual prints. Even to the expert eyes that scanned them critically they proved little less than astounding. Not only were canals and plates, which, again, are impressed upon the magazine sheet. If the old saying be true that “three moves are as bad as a fire,” it is clear how much has inevitably been lost in these steps made in order that they might be presented to the general reader at all. Later, the original prints will, I trust, be exhibited in the Natural History Museum of New York,

No. 4. SHOWING VARIETY OF INTENSITY OF IMAGE. THE DIFFERENCE IS DUE TO VARIATION IN TIME OF EXPOSURE.

REGION OF THE SOLIS LACUS. LONGITUDE OF THE CENTER OF THE PHOTOGRAPH, 58°, ENLARGEMENTS, AND PROFESSOR LOWELL'S DRAWING.

...
Mars as sketched by Antoniadi 1909

1. 1909, September 20. \( \omega = 279^\circ, \phi = -20^\circ.2. \)

Excellent definition.
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