

Preface to Volume I, Part 1

When *Mariner 10* photographed the surface of Mercury during three flybys on 1974 March 29, 1974 September 21 and 1975 March 16, the scientific study of that planet was effectively handed over from telescopic observers to professional cartographers and planetary scientists. Although Antoniadi's fine pointillist map of the albedo features of Mercury was now replaced by high definition photographic images of crater-strewn and wrinkled terrain, now seen in vivid detail, the albedo features identified in this pre-*Mariner* map still survive in today's maps and nomenclature system for Mercury. Antoniadi's classically inspired Latinized Greek names, all thematically related to the mythical messenger god Hermes, now serve as a grid on which are scattered a profusion of impact craters ridges, scarps, mountains, wrinkles and "weird" terrain (this last found, so far, only on Mercury).

Today, the International Astronomical Union, through the Task Group for Mercury Nomenclature of the Working Group for Planetary System Nomenclature, has widened the scope of Antoniadi's original, purely classical, scheme. In keeping with IAU policy, all the world's cultures are now represented in planetary nomenclature. In the case of Mercury, the most distinctive surface features—the craters—are named after deceased artists, writers and musicians who have deeply influenced their respective fields. Significant works of architecture are represented in the names of long, narrow channels (*fossae*) that criss-cross the planet's surface. The word for 'hot' in various languages is used to label mountains, and the extensive low plains that are just barely discernible in the best terrestrial telescopes are given names equivalent to Hermes in various languages. Other types of distinctive surface features of Mercury (the *dorsa*, *rupēs* and *valles*) commemorate ships of discovery, radio observatories and deceased scientists who have contributed to the study of Mercury.

After its final flyby of Mercury on 2009 September 29, NASA's *MESSENGER* probe completed the preliminary mapping, begun by *Mariner 10*, of almost (97.72%) of the entire surface of Mercury. The combined

Mariner 10 and *MESSENGER* databases were used to produce a near-global map of the planet's surface on the basis of a mosaic of images taken by the two probes. This global mosaic is limited in its cartographical accuracy by such factors as the variable resolution of the on-board cameras as the probes swept past Mercury on their various flybys, and the varying illumination of surface features during the various encounters. On 2011 March 18, *MESSENGER* was successfully inserted into orbit around Mercury in preparation for a definitive in-depth and repeated mapping of the Mercurian surface.

Names continue to be allocated to new surface features as they fall under the scrutiny of planetary scientists presently at work unlocking the jealously guarded secrets of this most perplexing of planets. This gazetteer gives a full conspectus of Mercurian nomenclature that is complete up to the time of writing (May, 2012). Now that *MESSENGER* has successfully begun its task of providing the definitive map of Mercury, many more new names will no doubt be added as the year progresses, and these will feature in future editions of the gazetteer.

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