BILINGUAL MAP OF MERCURY

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Background: As part of the Multilingual Map Series of the Terrestrial Planets and their Moons, the latest of the series, the Map of Mercury *(fig. 1.)* was published in 2004. This concludes the terrestrial planet part of the series. The series itself was initiated and is based on the work – especially the hand-drawn shade relief base maps – of MIIGAiK, the Moscow State University of Geodesy and Cartography. We publish the Central European edition, while the Western European series is published in Germany.

Using the same shade relief base maps, but a different layout, the first map of the Central European version was published in 2001 [5], by the Eötvös Loránd University, Budapest, in Hungarian, Croatian, Bulgarian, Czech, Polish and English. It contained infomation about the geography, geology, stratigraphy and the discovery of the planetary body (new and historic images and texts). The Hungarian version was reprinted in Croatia, by the Zagreb Observatory. The Mars and the Moon maps won prices on the Hungarian national Lázár Deák Map Contest in the scientific maps category. Until 2004, four sheets of both editions were published: Mars (2001), Venus (2003), the Moon (2003) and Mercury (2004). The maps of Mercury and the Moon appeared in the World Atlas of the Topográf Publishing Co [4], in Hungary, but in Hungarian nomenclature, and we have made a new, improved edition for the Venus map that - as the other ones - is available for free download on the internet [6]. These maps of the Central European edition are used by high school and university students and amateur/hobby astronomers and are distributed in the East-Central European countries, to high school libraries, university bookshops, amateur astronomer observatories and Planetaria.

Map of Mercury All maps in the series use two-hemisphere Lambert Transversal Equivalent Azimuthal projectrion, this way they give a different view from the other, Mercator or Cilindrical maps. The hand-drawing ensures that all important features are made - even if not photorealistic way - clearly visible on the maps. The Map of Mercury is probably amongst the last maps published of this planet displaying it as half-albedo, half-relief map. Its scale is 1: 17 900 000, its size is A/1. Since only about 40% of the surface of the planet is known in detail (from Mariner 10 data), the other 60% is shown only by its albedo features using hand-drawn and photographic observations of several workers. Additional details (bright rayed craters) are shown which originates from terrestrial radar (Arecibo, Goldstone) observations. This way the map is the most up-to-date representation of the known surface of Mercury, except from the latest topographic data derived from stereo, which is not inlcuded. The albedo features are shown in the whole planet, though, in the well-mapped part the topographic details dominate the view. The map itself is bilingual (English, Hungarian), but more language variants are planned for the future.

Nomenclature Three different nomenclature is included in the map. One is the albedo feature nomenclature, which is displayed only for the "unknown" part of the planet, but a full nomelcature is given in a separate global albedo map. The second is the official IAU nomenclature and the third is the Hungarian equivalents of the official IAU names. This was necessary because in many cases the IAU English/Latin usage of famous artists is different from the Hungarian – traditional – transcription of these names. This is the case in almost all Russian, Renaissance Italian and Greek personal names. In several cases the names can not be recognized for a Hungarian reader - to whom the map is made - this is why we included both transcriptions (versions) of the same name (Chekhov and Csehov, Hesiod and Hésziodosz etc.).

Additional data. We have shown the location of the Hot Poles of Mercury, and we have included a detailed explanation of its orbital characteristics. the locations of H1..H15 quadrangles are also shown on the map, for reference and to make scientific work easier. On the verso side *(fig. 2.)*, all crater names are shown in alphabetic order together with the person's image from whom it was named. All other names are also explained. During the work on this section, we have found several factual errors in the IAU explanations of names, that is published on the internet. [7]. These errors were corrected on the map. These additional data are aimed especially for the non-professional audience which is otherwise unlikely to be interested in such a map. [1, 2, 3]

Future plans The next part of the series will be the Map of Phobos and Deimos, expected to be published in 2005.

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References: [1] H. Hargitai, Sz. Bérczi: Planetary science outreach: old methods, new packaging – education via DVD and planetary maps. IAC Conference, Vancouver Oct. 2004. [2] H. Hargitai: Mit mondanak a bolygótérképek? A Hold és a Mars térképolvasási felmérése. HUNGEO2004, Sep. 2004. [3] H. Hargitai: Multilingual planetary maps for non-professional audience: visualization and nomenclature. INTERCARTO 10, Vladivostok, Jul. 2004. [4] H. Hargitai, J. Lazányi, Á. Kereszturi 2003, 2004: Astronomy chapter of the World Atlas in:. *Földrajzi Világatlasz (World Atlas),* Topográf Publishing Co.,

Budapest [5] H. Hargitai et al., 2003.: *Multilingual map of the Moon.* MIIGAiK-Eötvös University, Cosmic Materials Space Research Group [6] http://planetologia.elte.hu [7] *Gazetteer of Planetary Nomenclature* http://planetarynames.wr.usgs.gov/ (accessed 1. Oct. 2003., Last updated: 01/31/2003)

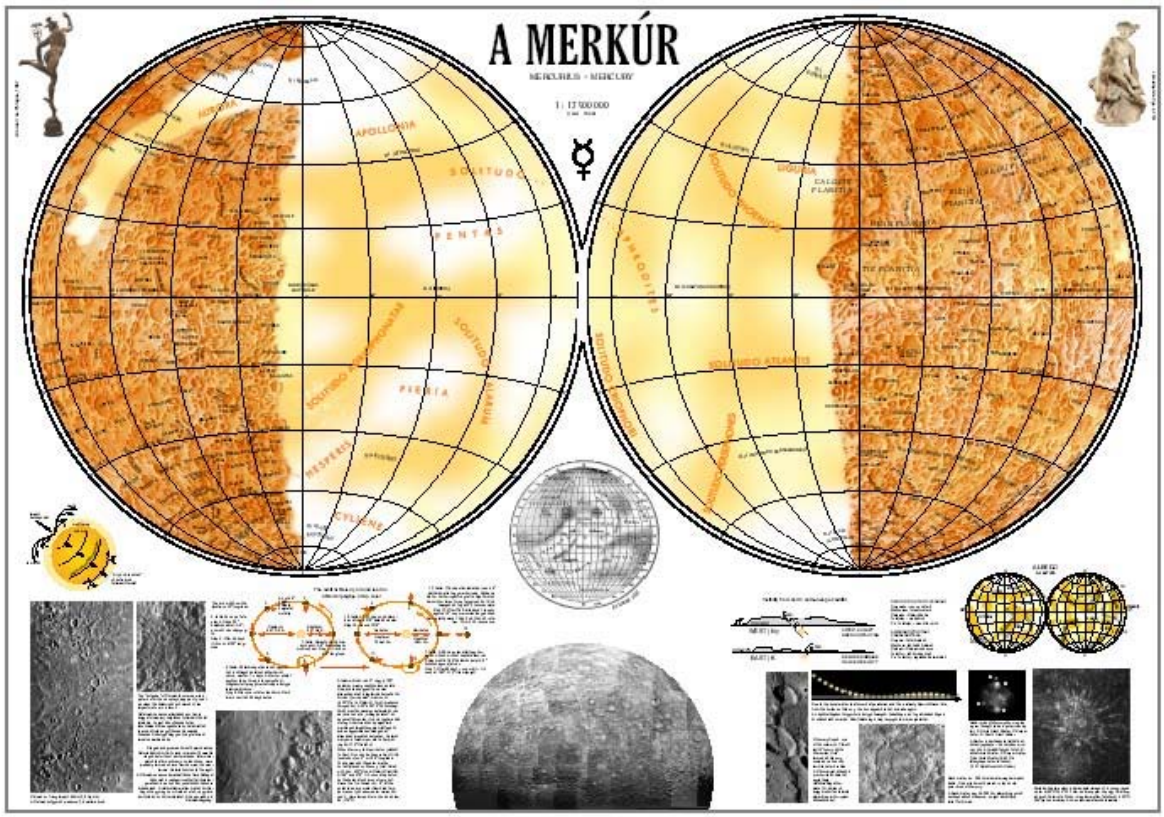

Fig. 1. Map of Merury, front side

Fig. 2. Map of Merury, verso