

Multilingual Maps of the Terrestrial Planets and their Moons: the East and Central European Edition

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A series of Multilingual planetary maps has been published by the Cosmic Materials Space Research Group of the Eötvös Loránd University (Budapest, Hungary) with consultations by Russian and German colleagues. The maps are a result of a cooperation of MIIGAiK (which offered the base maps), ELTE, the Copernicus Observatory and Planetarium in Brno, the Zagreb Astronomical Observatory, the Jagellonian University Observatory, the Tectonics and Geological Cartography Section of the Faculty of Geology at Warsaw University and the University of Architecture, Civil Engineering and Geodesy in Sofia. The series has been initiated by the International Cartographic Association (ICA), Commission on Planetary Cartography (Shingareva et al. 2006).

The now complete series has been published from 2001 to 2006: Mars (2001), Venus (2003), Moon (2003), Mercury (2004) and Phobos and Deimos (2006). (Hargitai et al 2001-2006)

These maps are more than outreach posters but less than maps for scientific purposes. These give a good overview of the topography and geology of the planets in a global to regional scale.

They contain multilingual information concerning planetary science results and specific characteristics of the planetary body relief, placed on the lower margins of the front sides of the maps and the whole back side (geography, geology, stratigraphy, history of discovery and full index of names).

These texts appear in Czech, Bulgarian, Hungarian, Croatian, Polish and English. In some cases it was the first time that a particular term (and its definition) was translated into one of these Central European languages. After compiling the first four maps it can be concluded that such work can effectively draw the attention of earth scientists to the specific features - and the mere existence - of other planetary bodies by simply discussing the translation of their terminology. Apart from circulating the maps in classrooms, this might be the most important scientific result of this edition.

A new, improved edition of the Venus Map was made in Polish and Hungarian for

use in the recent Venus transit events. In this map, the visual appearance has been modified: the original pencil drawing was mixed with actual radar image patches and vector symbols. The new edition uses symbols for features which would otherwise be too small for the representation at the given scale. For the improvement of the overall “3D” appearance, a limb darkening shading method was used. For the impact craters radar images were used instead of the drawing, which represents their actual ejecta characteristics more realistically. Lava channels are shown by yellow lines that follow the meanderings of the channels. The same method was used for *fossae*. Some lava flows that appear in the radar images are also shown. The elevated *terrae* got a darker brownish hue, while lower *planitiae* (plains) are shown in a light orange resulting in a “warm/hot” appearance. The locations of some of the smaller „geologic hot spots” (“ticks”, *farra* etc.) are also shown. We have added several new names to the nomenclature appearing on the map and used different font faces for the different features, taking terrestrial physical geographic maps as samples. Wherever possible, the names appear parallel to the latitude grid.

The legend got more space and contains not only basic (morphologic) features defined with Latin terms by IAU, but also other features or landscape types which are only described and discussed in planetary science publications. In the legend, not only „official” IAU definitions are included, but also the morphologic description and geologic interpretation.

After finishing the series we have started to update the maps and made a survey amongst students about the usability of the maps. As a result, we found that non-professionals expect maps to use Earth map standards and conventions, for example they looked for mountain peak heights and familiar symbols. We have re-designed the maps and added more details. We also look for a new color-code, since the natural terrestrial map colors scheme can not be used here: colors like blue or green can be misinterpreted easily. The colors on a terrestrial topographic map use a color system that reflects general vegetation cover (green) and the hydrologic system (blue). Part of this color system, however, can also be found in nature: in yellowing leaves (green-yellow-brown). On Mars or the Moon we try to find a color system that reflect the general colors of these planets but also allows discretion of the colors that reflect height or/and terrain type. The maps are available via internet for free pdf download at <http://planetologia.elte.hu>.

References: Hargitai H. I., Rükl A., Gabzdyl P., Roša D., Kundera T., Marjanac T., Ozimkowsky W., Peneva E., Bandrova T., Oreshina L. S., Baeva L. Y, Krasnopevtseva B. V, Shingareva K. B. (2001-2006) Maps of Mars, Venus, Mercury, Moon, Phobos and Deimos, Central European Edition. Budapest

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