

# Planetary Maps Designed for Children

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## Abstract

A set of children's maps on the solid-surfaced planetary bodies of the Solar System were developed in the framework of the program Europlanet 2012 [1]. The surfaces of the six bodies resulted from the cooperation of planetary scientists and graphic artists. A specialty of these maps compared to other, "scientific" maps is that while keeping cartographic accuracy, they link arts and science, and visualize features in a way that is easier to interpret for the non-scientists. This is the first project in which such detailed, hand-drawn lunar and planetary maps were created specifically for children, in the most common spoken languages of Europe. The map pages, prepared according to the latest data from space probes, are accompanied by a website where background information and interesting facts can be found in a form understandable for children. The topics covered were compiled with the help of the children's questions that were asked about the maps. The map series was prepared with the support of the ICA Commission on Planetary Cartography.

## 1. Introduction

The map of the Moon, or Mars, can be found on the walls of many children's rooms. However, these maps, either from NASA or commercial map production companies, have been designed for "general audience". Children's books on planet usually contain photographs, and even if they are picture books, planetary surfaces are rarely depicted in a map-like way. Atlases, where maps are hand-drawn and designed for children, also never contain planetary maps. Although raw spatial data is available for free for cartographer companies and graphic designers, it is still considered an "uncharted territory" for both terrestrial cartographers and book illustrators.

## 2. Arts and Science in Maps

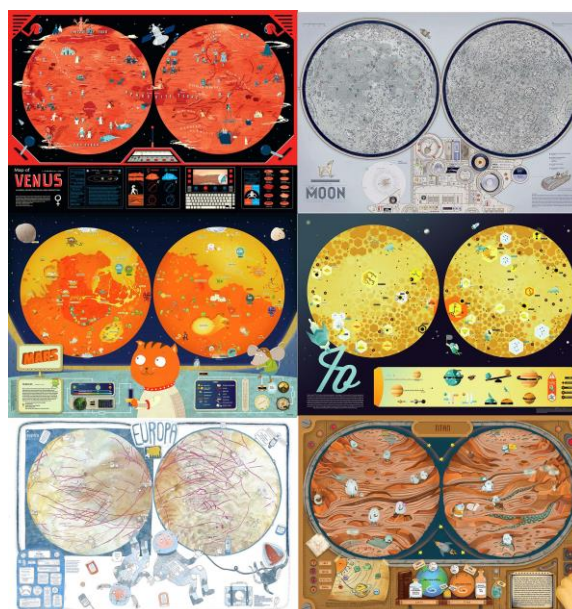


Figure 1: This is the example of an included figure.

As part of the outreach activity of the ICA Commission on Planetary Cartography, we have developed a new series of planetary maps targeting young readers. This is the third map series from the commission: the first was published 2000-2011 and edited in Dresden University and published in major European languages, the second was re-edited in Central European languages [2]. These series were general-theme (topographic), hand-drawn shaded relief maps for a non-professional audience. This time we focused on the 8-12 age group, which already can read and are still interested in a wide range of disciplines. We decided not to use photomosaics or computer generated data in the maps. We selected six planetary bodies: Venus, the Moon, Mars, Io, Europa and Titan and invited six graphic artists – illustrators of children's books – with different visual styles (Fig. 1): András Baranyai (Venus), Csilla Gévai (Europa), László Herbszt (the Moon), Csilla Kőszeghy (Mars), Panka Pásztóhy (Titan) and Dóri Sirály (Io). Although the overall

structure of the maps is similar, the visual approach to each map is fundamentally different. We attempted to create cartographically and scientifically correct maps that are attractive and also understandable for children.

We have published the maps online in printable high resolution pdf files in 11 separate language versions at <https://childrensmaps.wordpress.com/>.

We have added a new map sheet in 2016, following the New Horizons mission [3]. The map shows the geology of the surface together with characters taken from the then-informal nomenclature. The map has the theme of the Halloween, reminding to the mythological Pluto and Charon. The Pluto–Charon map was designed by Adrienn Gyöngyösi.

### 3. Further directions

We linked planetary scientists with graphic artists: their communication often resulted in misunderstandings, and consequently, numerous redraftings. We realized that the designers must interpret the photomosaics when they simplify them to colorful vector (or manual) graphics. To do this correctly, all graphic designers have to have a detailed understanding of the surface geology and some practice in photointerpretation.

The most controversial issue with the maps is the choice of the narrative story. It should be further investigated how the perception of the surface through the map changes depending on the narrative theme used. An experiment should be developed in which children are given the same maps, but with different theme layers added, including for instance a “plain” map, a map with human figures, a map with alien figures or a map series with returning figures as opposed to our current approach of completely different themes with a similar general layout. In a previous survey [4], children developed slightly different mental view of planetary surfaces when they studied maps with a nomenclature in Latin or their home languages. Different labels emphasized different types of features and different characteristics of the body. Similarly, different themes for a narrative could take the map readers in different directions. We hypothesized in this study that maps with a narrative layer are more attractive for the children than maps that display only geological features. It is also a fundamental question how planetary science content will have its share in the children’s attention once they focus on the imaginary or narrative content.

We also considered the map’s information content. Although we limited the number of labeled features, the maps may still remained too rich in data, and less so in stories communicating feelings of the landscape. One of the future plans is to simplify the maps to better catch their planetary profiles and make the drawings better translatable to mental pictures of landscapes and events in that space.

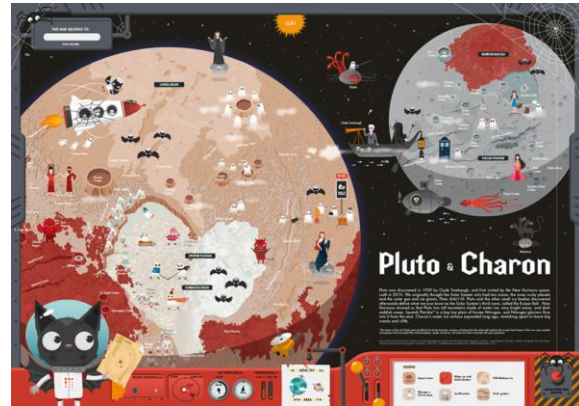


Figure 2: The latest addition to the series depicts the encounter hemispheres of Pluto and Charon.

Illustrator:

### Acknowledgements

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### References

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