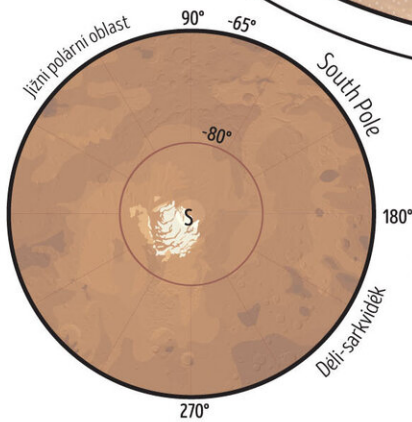
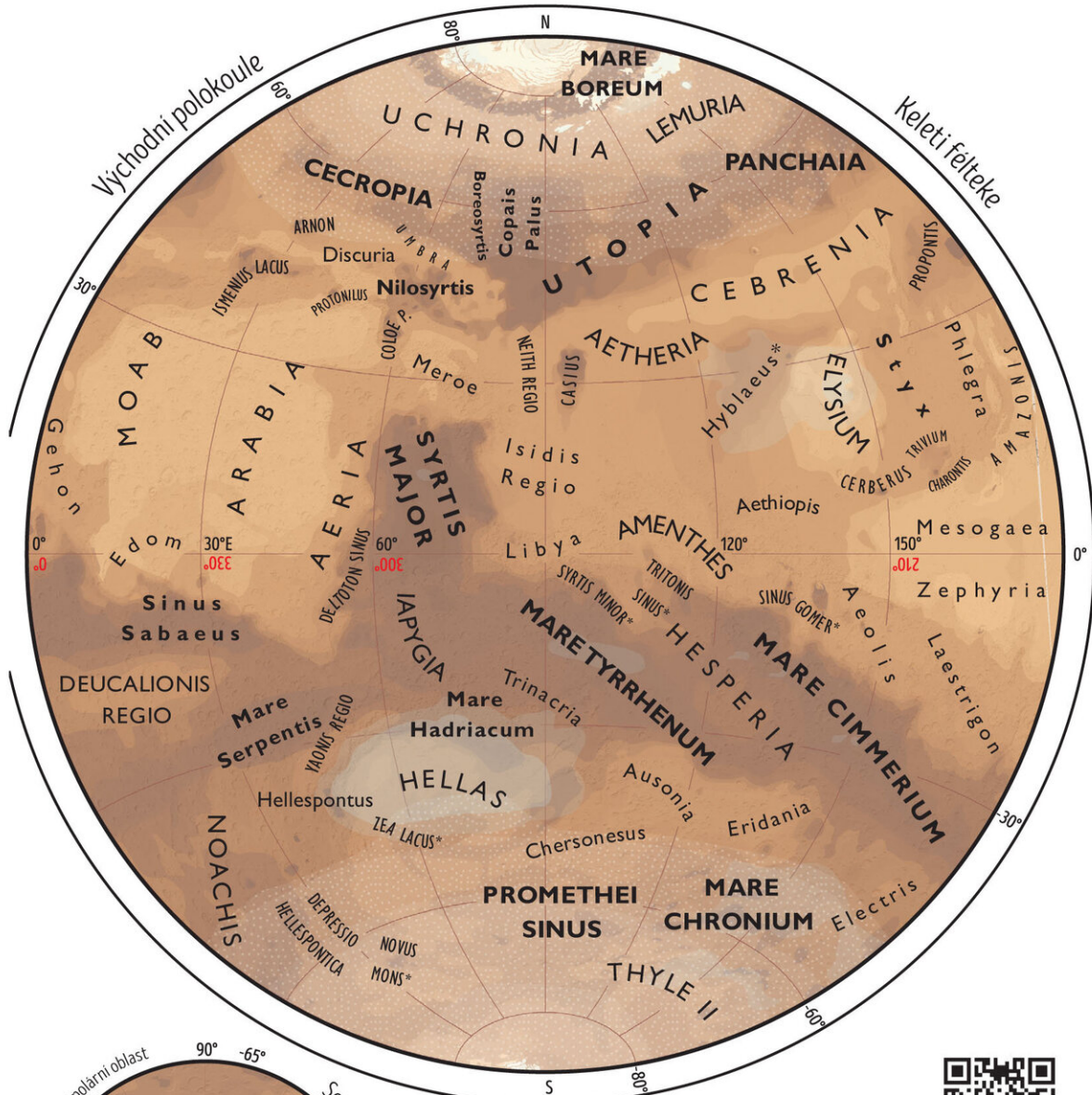


A pocket guide to Mars: Now you can buy an atlas for the Red Planet

March 17 2021



Eastern Hemisphere

Data from MGS TES, MEx OMEGA
Azimuthal Equidistant Projection

1:80.000.000



1997–2012 MY 23–31 ALBEDO

SURFACE MARKINGS, SEASONAL POLAR CAP, CLOUDS

A felszín foltjai, évszakos sarki sapkája és felhői
Povrchové útvary, sezónní polární čepička, mraky

ALBEDO is the amount of sunlight reflected by a surface
Az ALBEDÓ a felszínről visszavert fény aránya
ALBEDO je množství slunečního světla odražené povrchem

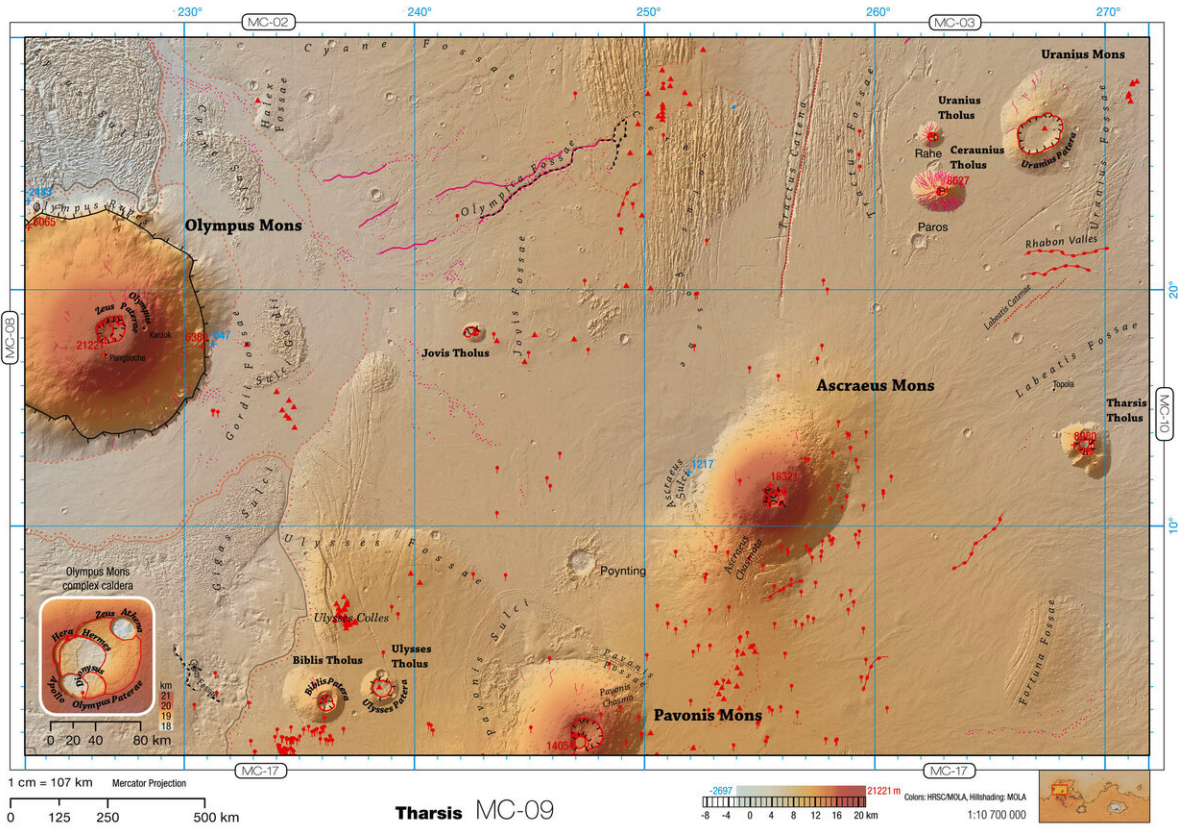
Albedo Map from the Pocket Atlas of Mars 36. Credit:
NASA/JPL/ASU/ESA/H. Hargitai

A pocket atlas of Mars has been published that uses geographic techniques developed for terrestrial maps to reveal a wealth of information about the surface of the Red Planet, as well as its climate and cloud cover. The atlas is being presented this week at the 52nd Lunar and Planetary Science Conference.

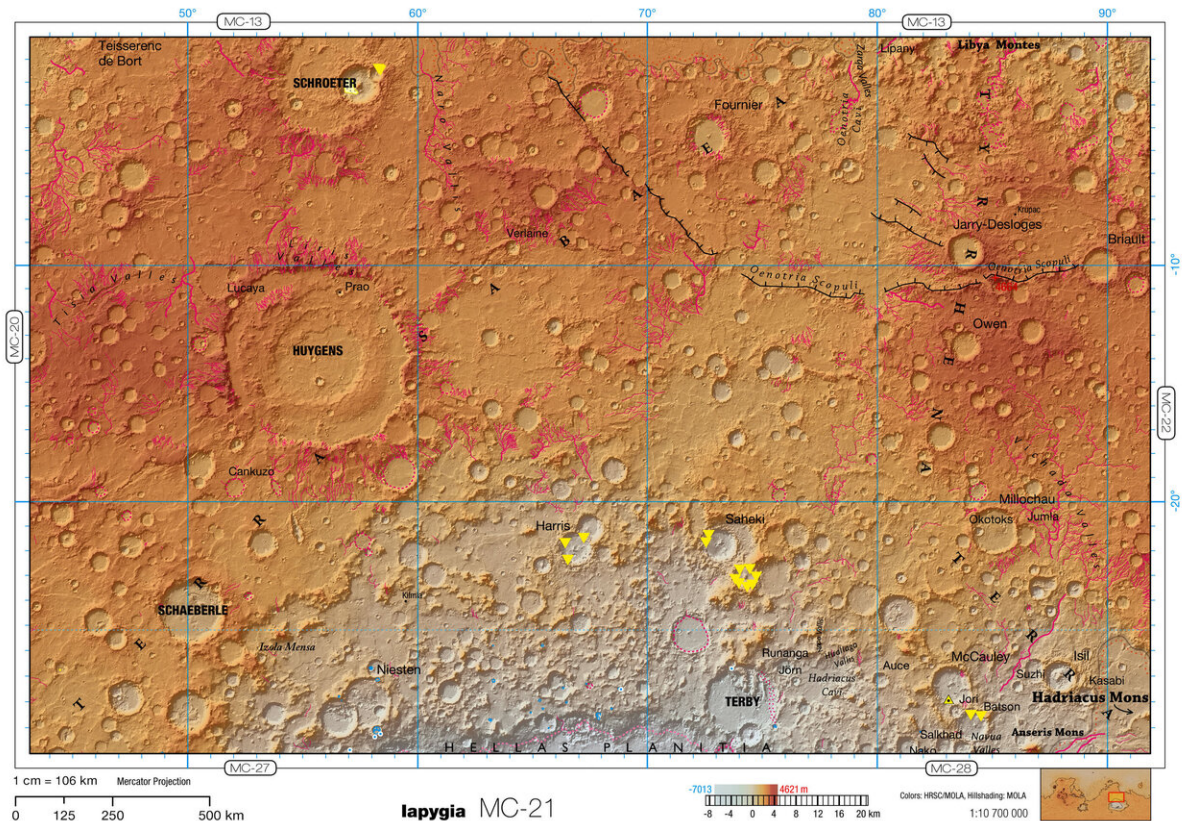
The 84-page atlas is currently available in English, Hungarian and Czech, and will be available in a digital format later this year. The atlas, which has been developed for use in astronomy clubs and schools, was funded by the Europlanet Society through its Central European Hub.

The main part of the atlas consists of a series of double spreads showing each of the 30 cartographic quadrangles into which the surface of Mars has been divided by the US Geological Survey. The landforms created by lava, wind, water, and ice are shown separately on a topographic base map, highlighting features such as dune fields, mountain peaks, volcanic calderas, caves, ancient dried-up lakes and deltas, and fault lines.

For the first time in a published Mars atlas, [climate maps](#) are included, which show 13 climatic zones with boundaries defined by combining seasonal temperature and frost data. A series of climate diagrams show the variation in temperature through the martian year for each of the zones. In addition, a weather map shows the temperature at ground level across the western hemisphere of Mars at the two annual solstices.



Double spread of thematic map of Tharsis region of Mars (Mars Chart 09) from the Pocket Atlas of Mars 36. The scale of the map is 1cm=107 km. Credit: NASA/JPL/GSFC/ESA/DLR/FU/H. Hargitai

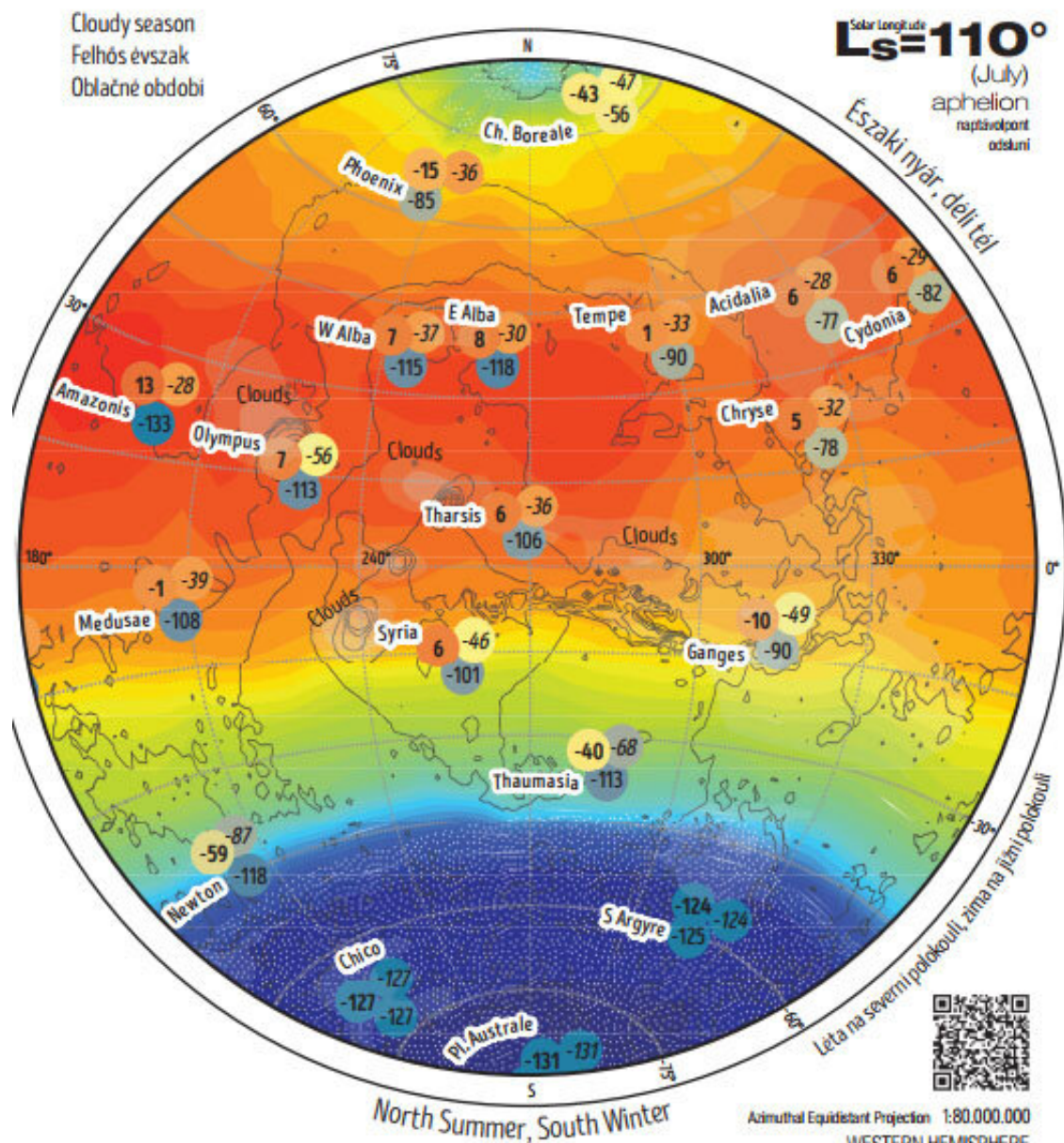


Double spread of thematic map of Iapygia region of Mars (Mars Chart 21) from the Pocket Atlas of Mars 36. The scale of the map is 1cm=106 km. Credit: NASA/JPL/GSFC/ESA/DLR/FU/H. Hargitai

The atlas also includes an albedo map, derived from data from Mars Express and Mars Global Surveyor, which shows the amount of sunlight reflected from the surface, the frequently cloudy regions and the maximum area covered by the seasonal caps of frozen carbon dioxide and water ice at the martian poles.

The map editor, Henrik Hargitai of the Eötvös Loránd University, Budapest and former chair of the Commission on Planetary Cartography of the International Cartographic Association, said: "The maps in the

atlas are manually edited, using accurate data from missions and models. Thematic maps that reveal patterns in physical geography have been used for decades for in terrestrial atlases, but this is the first time that they are available in an atlas for Mars. The publication of this edition is a culmination of mapping efforts over the last two decades. The atlas also includes a one-page calendar for Mars year 36, covering the period from February 2021 to December 2022, which explains the milestones in the seasonal changes on Mars."



Weather map of western hemisphere of Mars from the Pocket Atlas of Mars 36. Credit: Forget et al/Mars Climate Database 5.3

LMD/OU/IAA/ESA/CNES/NASA/JPL/Malin Space Science Systems/H.
Hargitai

Future plans for the atlas include the addition of themed maps that show regions of interest in detail, and atlas-based activities for educators. As well as being a tool for outreach and education, this type of multi-themed map could be valuable for the [scientific community](#) in interpreting the geologic evolution of Mars, estimating whether an area might ever have hosted life, or identifying in-situ resources to support future human exploration missions.

More information: www.europlanet-society.org

Provided by Europlanet Media Centre

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