

HUNGARIAN LOCALIZATION OF THE INTERNATIONAL PLANETARY NOMENCLATURE SYSTEM

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Abstract: The paper describes the Hungarian localization of the official IAU nomenclature system of planetary body surface features and planetary body names. The localized forms are recommended for use in texts published in popular science journals and newspapers and books for the general public.

Keywords: *planetary cartography, Mars, Moon, planetary nomenclature, placenames, toponymy*

INTRODUCTION

The Planetary Nomenclature System is maintained by the Working Group for Planetary System Nomenclature (WGPSN) of the International Astronomical Union, and is published as the Gazetteer of Planetary Nomenclature which is distributed by the U.S. Geological Survey (USGS). Planetary surface feature Place Names consist of two elements: a specific term and a descriptor term. Crater, bright albedo and some other names have no descriptor term. Descriptor terms are in Latin language; for specifics, the original form is retained if the original is using Latin alphabet; if not, a transformation to Latin alphabet is applied. The origin of this system goes back to the 17th century, when the first Lunar maps, especially the Grimaldi-Riccioli map used Latin terms which was a conventional custom of cartographers for terrestrial maps. Over the years, the language of science and cartography changed to the appropriate national language, so now terrestrial maps showed names in the particular national language. Planetary nomenclature also followed this rule in the late 19th-early 20th century in every country, including official English names, however, IAU later decided to re-establish the Latin forms as official forms and adopted this system for the new terms and names of the first topographic maps of Mars (1973) and all later maps (Blagg 1913, Sadler 1962, Hamill 1963,). Official planetary nomenclature now is in Latin, therefore making it truly „international” and „neutral”, since no nation possess any land on other planetary bodies. In this neutralizing process the then-transparent Latin names become opaque for most readers.

Our goal is to localize this international nomenclature to make at least descriptor terms transparent for its readers (*Table 1.*). We think that names are not just random labels, but they have important information about the landform, which should be intelligible for the reader of the place name. It is especially important in the case of extraterrestrial landforms which in many cases are unusual compared to terrestrial geography.

The main practical aim of our work is to make a common form of the terminology and nomenclature used in popular literature, textbooks, news media. These texts are produced usually by non-professionals for non professionals, usually by translating English texts to Hungarian. translation without any guidelines usually is made *ad hoc*, therefore various articles refer to a particular landform by differently translated Hungarian forms (Hargitai and Kereszturi 2002; Kozma 2007).

CASE STUDY: PLANETARY NOMENCLATURE IN HUNGARIAN

Planetary names consist of two elements: a Specific part (e.g. Imbrium) and a descriptor term (e.g. Mare). The international IAU descriptor terms are always in Latin language. Specific parts are in the original language or Latin. Crater names have no descriptor term (e.g. Tycho).

Traditionally both parts of Lunar albedo names are translated (Sea of Rains), but for lesser known features in some languages names are not translated (Latin form is used: Olympus Mons, Hellas Planitia), in other languages only descriptor terms are translated (Hungarian: Olympus-hegy, Hellas-síkság), or both are translated or transliterated or transcribed (in Japanese, Russian, etc.).

Informal names for example in landing sites are usually given in English. Some large features have no official name, but they are used in literature in the particular language (e.g. Tharsis Rise).

RULES IN HUNGARIAN

General Rules

Hungarian language rules state that a binominal geographic name should have a specific part written in capital initial letter, and a second, descriptor part which should be written in lower case, and these two parts should be joined together with a hyphen, i.e. Atlanti-óceán; except for those which have a possessive case which are written separately (AkH. 1984).

In our planetary nomenclature system we follow the above mentioned general orthographic rule. Of course, the original IAU forms can also be used in any Hungarian text.

True Topographic names (e.g. Valles Marineris)

In Hungarian, *specific part* of true topographic names are maintained in the original IAU form. Thus, specifics are viewed as labels, not as meaningful names. It is necessary especially because some meaningful words are present in many languages; translation would make them impossible to differentiate. A major disadvantage of this method is that well known personal names will remain in an opaque form because (Tsiolkovsky instead of Ciolkovszkij, Chekhov instead of Csehov, Copernicus instead of Kopernikusz). From these forms the original names are unfortunately usually not recognizable for the average Hungarian reader. In Hungarian the traditional transcription and transliteration rules from non Latin alphabets considerably differ from international or English transcription and transliteration rules.

Descriptor terms, however, are always translated to Hungarian, if a parallel exists in Hungarian geologic / geographic literature (for example for Mons, Valley, etc.); if such word does not exist, a transcription method is used (tessera: tesszera, facula: fakula).

This use of geographic names is parallel to the use of terrestrial topographic names appearing in Physical Geographic World Maps published in Hungarian. This way planetary names became comparable to terrestrial geographical names, making them intelligible for the readers. A parallel situation is with stratigraphic names which in Hungarian literature should officially be used in their Hungarian form (i.e. Kréta for Cretaceous); we also have developed a Hungarian system for planetary stratigraphic names (Hargitai et al 2008)

False Topographic names (e.g. Mare Imbrium)

False topographic names (i.e. Lunar place names) have been traditionally translated in the 19th century to most European languages. Hungarian is no exception. These names are still in everyday use by amateur astronomers and the general public. Therefore we have chosen not to keep the Latin forms; nor to follow the above described method of keeping the specific part and translating the descriptor term; instead, we keep the fully translated form: Esők tengere for Mare Imbrium. Such names are separately listed. See: Exceptions.

Albedo Names (on Mercury, Mars)

For albedo names on Mercury we follow the general rules. In the case of Mars we fully keep the original forms.

Informal landing site names

Informal names near landing sites are sometimes translated, sometimes not. Our recommendation is to use a bilingual form where space permits: the original form and the full translation (cultural equivalent) of the original: the rock named Yogi should be Maci Laci in Hungarian. This way these informal names which usually have some cultural reference, can be made transparent as for their meaning. This method has many disadvantages, however, therefore we recommend to add the original form in parenthesis: Maci Laci (Yogi).

Informal geologic names

Some regional planetary geographical names are not officially adopted, however, they are used widely in literature (Hellas Basin, Tharsis Rise etc.). Such names should follow the general rules: the specific part kept in the original form, the descriptor term translated using a word that is not included in the list of descriptor terms.

Table 1. Descriptor terms and descriptions

DESCRIPTOR TERMS Latin (singular, plural) and their	Official description in English	Description in Hungarian	Example in the Hungarian

Hungarian equivalent			
arcus, arcūs <i>ív, ívek</i>	Arc-shaped feature	ívelt alakzat	Hotei-ív, Titán
astrum, astra <i>asztrum, asztrumok</i>	Radial-patterned features on Venus	sugárirányú mintázatu terület, Vénusz	not in use
catena, catenae <i>kráterlánc, kráterláncok</i>	Chain of craters	kráterlánc	Gipul-kráterlánc, Ganymedes
cavus, cavi <i>üreg, üregek</i>	Hollows, irregular steep-sided depressions usually in arrays or clusters	üregek, gyakran szabálytalan, meredek mélyedés, többnyire többedmagokkal	Apep-üreg, Triton
chaos, chaos <i>káosz, káoszok</i>	Distinctive area of broken terrain	feltöredezett terület	Conamara-káosz, Europa
chasma, chasmata <i>szurdok, szurdokok</i>	A deep, elongated, steep-sided depression	mély, hosszú, meredek mélyedés	Eos-szurdok, Mars; Tibur-szurdokok, Dione
collis, colles <i>domb, dombság</i>	Small hills or knobs	kisebb dombok	Acidalia-dombság, Mars
corona, coronae <i>korona, koronák</i>	Ovoid-shaped feature	ovális alakzat	Artemis-korona, Vénusz
dorsum, dorsa <i>gerinc, gerincek</i>	Ridge	gerinc	Boszorkány-gerincek, Vénusz
facula, faculae <i>fakula, fakulák</i>	Bright spot	világos folt	Memphis-fakula, Ganymedes
farrum, farra <i>palacsintavulkán, palacsintavulkánok</i>	Pancake-like structure, or a row of such structures	palacsintaszerű alakzat, ill. azok sorozata (pl. Vénusz)	Seoritsu-palacsintavulkánok, Vénusz
flexus, flexūs <i>ívsor, ívsorok</i>	A very low curvilinear ridge with a scalloped pattern	alacsony, körívseggmensekből álló hát (Europa)	Sidon-ívsor, Europa
fluctus, fluctūs <i>lávafolyás, lávafolyások</i>	Flow terrain	folyási terület	Marduk-lávafolyás, Io
flumen, flumina <i>folyó, folyók</i>	Channel on Titan that might carry liquid	esetleg folyadékot szállító csatorna a Titánon	Elivagar-folyóvölgyek, Titán
fossa, fossae <i>árok, árkok</i>	Long, narrow depression	hosszú, keskeny mélyedés	Ceraunius-árkok, Mars
insula, insulae <i>sziget, szigetek</i>	Island (islands), an isolated land area (or group of such areas) surrounded by, or nearly surrounded by, a liquid area (sea or lake).	folyadék által körülvett terület (Titán)	Mayda-sziget, Titán
labes, labēs <i>csuszamlás, csuszamlások</i>	Landslide	csuszamlás	Candor-cuszamlás, Mars
labyrinthus, labyrinthi <i>labirintus, labirintusok</i>	Complex of intersecting valleys or ridges.	keresztződő völgyek vagy hátak	Noctis-labirintus, Mars

lacus, lacūs <i>tó, tavak</i>	"Lake" or small plain; on Titan, a "lake" or small, dark plain with discrete, sharp boundaries	tó (Titán) vagy kisebb síkság (Hold)	Ontario-tó, Titán; Halál tava, Hold
lenticula, lenticulae <i>lentikula, lentikulák</i>	Small dark spots on Europa	sötét folt (Europa)	not in use
linea, lineae <i>vonat, vonalak</i>	A dark or bright elongate marking, may be curved or straight	sötét vagy világos hosszanti, görbe vagy egyenes alakzat	Belus-linea, Europa
lingula, lingulae <i>nyelv, nyelvek</i>	Extension of plateau having rounded lobate or tongue-like boundaries	fennsík lebenyes peremű kiágazása	Promethei-nyelv, Mars
macula, maculae <i>makula, makulák</i>	Dark spot, may be irregular	sötét folt	Zin-makulák, Triton
mare, maria <i>tenger, tengerek</i>	"Sea"; large circular plain; on Titan, large expanses of dark materials thought to be liquid hydrocarbons	tenger (Titán) vagy kerekded síkság	Kraken-tenger, Titán; Válságok tengere, Hold
mensa, mensae <i>táblahegy, táblahegyek</i>	A flat-topped prominence with cliff-like edges	lapos tetejű, meredek falú alakzat	Echo-táblahegy, Io; Deuteronilus-táblahegyek, Mars
mons, montes <i>hegy, hegység</i>	Mountain	hegy	Hadley-hegy, Hold; Ionian-hegy, Io; Olympus-hegy, Mars; Haemus-hegység, Hold; Maxwell-hegység, Vénusz
oceanus, oceani <i>óceán</i>	A very large dark area on the moon	igen nagy, egybefüggő sötét terület (Hold)	Viharok óceánja, Hold
palus, paludes <i>mocsár</i>	"Swamp"; small plain	kisebbs síkság (Hold)	Rothadás mocsara, Hold
patera, paterae <i>patera, paterák</i>	An irregular crater, or a complex one with scalloped edges	szabálytalan peremű / komplex kráter (kaldera)	Alba-patera, Mars
planitia, planitiae <i>síkság)</i>	Low plain	alföld	Tir-síkság, Merkúr; Amazonis-síkság, Mars; Rusalka-síkság, Vénusz
planum, plana <i>fennsík</i>	Plateau or high plain	fennsík / felföld	Danube-fennsík, Io; Meridiani-fennsík, Mars
promontorium, promontoria <i>fok, fokok</i>	"Cape"; headland promontoria	hegyfok	Kelvin-fok, Hold
regio, regiones <i>régió, régiók</i>	A large area marked by reflectivity or color distinctions from adjacent	fényessége vagy színe miatt elkülönülő nagyobb terület	Cassini-régió, Iapetus; Colchis-régió, Io

	areas, or a broad geographic region		
reticulum, reticula <i>retikulum,</i> <i>retikulumok</i>	reticular (netlike) pattern on Venus	hálószerű mintázat a Vénuszon	not in use
rima, rimae (csak a Holdon) <i>rianás, rianások</i>	Fissure	hasadék; a Holdon hagyományos neve rianás	Hadley-rianás, Hold
rupes, rupēs <i>szakadék,</i> <i>szakadékok</i>	Scarp	szakadék	Altai-szakadék, Hold
scopulus, scopuli <i>fal, falak</i>	Lobate or irregular scarp	lebenyes vagy szabálytalan szakadék	Scylla-fal, Mars
sinus, sinūs <i>öböl, öblök</i>	"Bay"; small plain	kisebb síkság	Szivárvány öble, Hold;
sulcus, sulci <i>barázda, barázdák</i>	Subparallel furrows and ridges	párhuzamos árkok és gerincek	Uruk-barázda, Ganymedes
solitudo <i>szolitúdó</i>	IAU: part of Albedo Feature category	sötét albedóalakzat a Merkúron	Neptuni-szolitúdó, Merkúr
terra, terrae <i>felföld (a Marson);</i> <i>egyébként: föld</i>	Extensive land mass	kiterjedt földterület	Ishtar-föld, Vénusz; Noachis-felföld, Mars
tessera, tesserae <i>tesszera, tesszerák</i>	Tile-like, polygonal terrain	parkettaszerűen sokszögmintás terület, Vénusz	Tellus-tesszera, Vénusz
tholus, tholi <i>kúp, kúpok</i>	Small domical mountain or hill	kisebb, kupola alakú dombok	Apis-kúp, Io; Uranius-kúp, Mars
unda, undae <i>dűne, dűnék</i>	Dunes	dűnék	Hyperboreae-dűnevidék, Mars
vallis, valles <i>völgy, völgyek</i>	Valley	völgy	Tisia-völgyek, Mars; Ares-völgy, Mars
vastitas, vastitates <i>síkvidék</i>	Extensive plain	kiterjedt síkság (Mars)	Borealis-síkvidék, Mars
virga, virgae <i>sáv, sávok</i>	A streak or stripe of color	sávszerű rövid albedóalakzat, Titán	Hobai-sáv
No descriptor term			
–	Albedo Feature: Geographic area distinguished by amount of reflected light	albedóalakzat: a környezetétől eltérő fényvisszaverőképességű terület	Pieria, Merkúr
–	Crater: A circular depression	kráter: kerekded mélyedés	Tycho, Hold (folyó szövegben: Tycho kráter, Hold)
–	Satellite crater	kísérőalakzat (kráter)	Abbe H, Hold
–	Plume: Cryo-volcanic features on Triton	kitöréscsúcs	Hili, Triton
–	Eruptive Center: Active volcanic centers on Io	aktív vulkáni kitörési központ	Prometheus, Io
–	Large ringed feature	nagyobb, gyűrű alakú alakzat az Európán	Tyre, Europa

Exceptions

These names have traditionally been translated and used into the local language by amateur astronomers (Hargitai et al 2003). In Hungarian we propose to use these traditional names (both parts translated).

MARS

Valles

Valles Marineris Mariner-völgy (Mariner-völgyrendszer [!])

MOON

Vallis

Vallis Alpes Alpesi völgy (Alpes-völgy) (earlier official name: Alpine Valley)
Vallis Schröteri Schröter-völgy (earlier official name: Schröter's Valley)

Montes

(only those which have a known traditional variant still in use)

Montes Alpes Alpok (Alpes-hegység) (earlier official name: Alps)
Montes Apenninus Appenninek (Apenninus-hegység) (earlier official name: Apennines)
Montes Carpatius Kárpátok (Carpatius-hegység) (earlier official name: Carpathians)
Montes Caucasus Kaukázus (Caucasus-hegység) (earlier official name: the Caucasus)
Montes Cordillera Kordillerák (Cordillera-hegység) (earlier official name: Cordillera Mts.)
Montes Pyrenaeus Pireneusok (Pyrenaeus-hegység) (earlier official name: Pyrenees (Mts.))
Montes Harbinger Hírmondó-hegység (Harbinger-hegység)
Montes Spitzbergen Spitzbergák (Spitzbergen-hegység)

NB Montes Recti has a traditional English translation (Straight Range), but Hungarian not.

Rupes

(only those which have a known traditional variant still in use)

Rupes Recta Egyenes Fal (Recta-szakadék) (rarely: Nagy Fal) (earlier official name: The Straight Wall)

Lacus

Lacus Aestatis Nyár tava
Lacus Autumni Ősz tava
Lacus Bonitatis Jóság tava
Lacus Doloris Fájdalom tava or Kín tava
Lacus Excellentiae Kiválóság tava
Lacus Felicitatis Boldogság tava
Lacus Gaudii Öröm tava
Lacus Hiemalis Tél tava
Lacus Lenitatis Gyengédség tava
Lacus Mortis Halál tava
Lacus Odii Gyűlölet tava
Lacus Perseverantiae Kitartás tava
Lacus Somniorum Álmok tava
Lacus Spei Remény tava
Lacus Temporis Idő tava
Lacus Timoris Félelem tava
Lacus Veris Tavasz tava

Mare

Mare Anguis Kígyó-tenger
Mare Australe Déli-tenger
Mare Cognitum Ismert-tenger
Mare Crisium Válságok tengere or Veszélyek tengere
Mare Fecunditatis Termékenység tengere

Mare Frigoris	Hidegség tengere
Mare Humboldtianum	Humboldt-tenger (for Alexander von Humboldt)
Mare Humorum	Nedvesség tengere
Mare Imbrium	Esők tengere
Mare Insularum	Szigetek tengere
Mare Marginis	Perem-tenger
Mare Nectaris	Méz tengere or Nektár tengere
Mare Nubium	Felhők tengere
Mare Orientale	Keleti-tenger
Mare Serenitatis	Derültség tengere
Mare Smythii	Smyth-tenger (for William Henry Smyth)
Mare Spumans	Habzó-tenger or Tajtékzó-tenger
Mare Tranquillitatis	Nyugalom tengere
Mare Undarum	Hullámok tengere
Mare Vaporum	Párák tengere
(Far side)	
Mare Moscoviense	Moszkva-tenger (Sea of Muscovy)
Mare Ingenii	Tehetség tengere

Oceanus

Oceanus Procellarum Viharok óceánja

Palus

Palus Epidemiarum Járványok mocsara or Betegségek mocsara or Ragályok mocsara
Palus Putredinis Rothadás mocsara
Palus Somni Álom mocsara

Sinus

Sinus Aestuum Hőség öble or Melegség öble or Dagályok öble
Sinus Amoris Szeretem öble or Szeretet öble
Sinus Asperitatis Durvaság öble
Sinus Concordiae Egyetértés öble
Sinus Fidei Remény öble or Bizalom öble
Sinus Honoris Megbecsülés öble
Sinus Iridum Szivárvány öble or Szivárvány-öböl
Sinus Lunicus Luna-öböl
Sinus Medii Közép öble or Központi-öböl
Sinus Roris Harmat öble
Sinus Successus Siker öble

PLANETARY BODY NAMES

The general rule in Hungarian since the 1970s is that names of major planets are using the phonetic form of the name, while all other planetary body names (moons, asteroids) are in Latin form (Dezső and Kálmán 1979). The major exception is Ganymedes which follows its traditional greek form; Titán is sometimes written with an accent (this being the first large satellite which created considerable Hungarian language literature in the 1970-80s, therefore this was „localized” naturally by frequent use), Japetus is traditionally written using an initial J, following modern latin form and German traditions. Some authors have changed the orthography of Pluto after its status had been changed to dwarf planet; now „traditionalists” use the form Plútó, „internationalists” use Pluto. Considering language, the form Pluto is less advanced than Plútó, since Plútó follows the natural rules of the language while Pluto is a foreign, international form. The general linguistic rule nowadays is to keep international Romanized forms of *proper names*, while traditionally nouns will be transliterated after few years of use (examples: szerver, fájl, webszájt). A disadvantage of this is that pronunciation of proper names varies (‘Engeladus’ pronounced as ts or k, ‘*ch*asma’ pronounced as kh or ch), an advantage is that there is no need to re-establish the original form.

Exceptions

IAU	English	German	French	Hungarian
134340 Pluto	Pluto	Pluto	Pluton	134340 Pluto/Plútó
Ganymede	Ganymede	Ganymed	Ganymède	Ganymedes
Titan	Titan	Titan	Titan	Titan/Titán
Iapetus	Iapetus/Japetus	Iapetus/Japetus	Japet	Iapetus/Japetus

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