

THE IAU/WGPSN LUNAR TASK GROUP AND THE STATUS OF LUNAR NOMENCLATURE. V. Shevchenko¹, F. El-Baz², L. Gaddis³, H. Hiesinger⁴, Yu. Shkuratov⁵, E. Whitaker⁶, L. Wilson⁷, and J. Blue³, ¹Dept. Lunar & Planetary Research, Sternberg State Astron. Inst., Moscow State Univ., Moscow, Russia; ²Center for Rem. Sensing, Boston Univ., Boston, MA; ³USGS/Astrogeology, Flagstaff, AZ, 86001; ⁴Inst. fuer Planetologie, Westfaelische Wilhelms-Univ. Muenster, Munster, Germany; ⁵Astron. Inst. Kharkiv Nat. Univ., Kharkov, Ukraine; ⁶Tucson, AZ; ⁷Dept. Env. Science, Inst. Environmental and Natural Sciences, Lancaster Univ., Lancaster, UK. [vladislav_shevch@mail.ru].

Introduction: The task of naming features on the Moon is managed initially by the Lunar Task Group (LTG) of the International Astronomical Union (IAU) Working Group for Planetary System Nomenclature (WGPSN). LTG members include Vladislav Shevchenko (Chair) and six lunar scientists who hail from countries across the globe. Given the recent increase in lunar exploration and research, and the fact that many lunar features of likely scientific interest have yet to be named (*Table 1*), it is timely to summarize the status of lunar nomenclature and the name bank, as well as the process for submitting requests for naming features on the Moon.

Table 1. Status of nomenclature for lunar craters.

Crater Diameter (km)	Named Craters	Unnamed Craters
21 – 40	296	3750
41 - 80	548	1550
81-160	308	416
>160	59	74

Nomenclature Purpose and Rules: Planetary nomenclature is a tool used to identify uniquely a feature on the surface of a planet or satellite so it can be readily located, described, and discussed. Approved names are listed in IAU Transactions and the Gazetteer of Planetary Nomenclature [1; see <http://planetarynames.wr.usgs.gov/>] and must follow established rules and conventions (see <http://planetarynames.wr.usgs.gov/rules.html>). The online edition of the Gazetteer supersedes earlier volumes [2, 3].

Planetary names should be simple, clear, and unambiguous. Features (generally >100 m) *should be named only when they have*

special scientific interest, and when the naming is useful to the planetary scientific and cartographic communities. The number of names chosen for each body should be kept to a minimum. Names should be international in origin, with equitable selection from different ethnic groups and/or countries on each map. Names with political, military, or religious significance are not allowed. Commemoration of persons (who must be deceased for more than 3 years) is not a goal in itself, but may be approved in special circumstances and is reserved for persons of high and enduring international standing. Names for lunar features must include appropriate descriptor terms and must be chosen from approved categories. For example, lunar mountains (descriptor=mons, montes) are named for terrestrial mountain ranges or nearby craters (see <http://planetarynames.wr.usgs.gov/append6.html>).

Status of Lunar Nomenclature: All lunar features with IAU-approved names can be viewed on 1:1 million maps in the online Gazetteer of Planetary Nomenclature (<http://planetarynames.wr.usgs.gov/dAtlas.html>). There are now almost 9000 IAU-approved names in use on the Moon [1, 4], including 1521 named craters and 7056 lettered craters (roughly one named crater for every 61 km² area). Lunar names describe 18 feature types: catenae, craters, dorsa, fossae, lacūs, landing site names, maria, montes, oceanus, paludes, planitiae, promontoria, rimae, rupēs, lettered craters (so-called "satellite features"; [5]), sinūs, and valles. As new names are approved by the IAU, they will immediately be added to the online maps. In very special cases,

such as for features of high scientific interest such as ‘cold-trap’ craters at the lunar South Pole, lettered craters can be renamed with formal names from the lunar name bank.

The Lunar Name Bank: The LTG Chair maintains a list or ‘bank’ of names that meet naming rules and have been approved for use on the Moon. Requests for feature names are drawn directly from this name bank by the LTG Chair. The lunar name bank currently includes more than 250 names of prominent individuals, including 45 names of Nobel prize winners. Additional names that meet IAU naming criteria for the Moon can be suggested by investigators for features that require names. It is likely that additional names will be needed in the near future, and investigators are encouraged to submit appropriate names for consideration by the LTG.

Approval of Names: The major task of the LTG is to respond to and review name requests from the international lunar science community. Official requests are commonly submitted (using the required form, see below) to support ongoing scientific research, mapping and cartography, and (on rare occasions) to commemorate significant contributors to lunar science. Names successfully reviewed by the LTG are submitted to the WGPSN for review. If this review is passed successfully, names are considered approved and they are immediately entered into the Gazetteer of Planetary Nomenclature and posted on its web site. Objections to approved names based on significant, substantive problems must be forwarded in writing or email to the IAU Division III President within three months from the time the name was placed on the web site.

Submitting a Name Request: If you are a professional planetary scientist doing lunar research or mapping and you wish to submit a formal name request, you should first review the online database [1] and maps of lunar nomenclature (see

<http://planetarynames.wr.usgs.gov/dAtlasPreface.html>). Requests must be submitted on the Name Request Form at <http://planetarynames.wr.usgs.gov/jsp/request.jsp>. Allow at least 6 to 8 weeks for the review and approval process, but more time may be necessary if the proposal is complicated or if questions are raised during the review process. Upon successful review by the WGPSN, approved names can be used on maps and in publications. *You are encouraged to submit name requests well in advance of your publication deadlines.*

Summary: The members of the IAU Working Group for Planetary System Nomenclature and its Task Groups have worked since the early 1970s to provide a clear system of planetary nomenclature that represents cultures and countries from all regions of Earth. This activity supports ongoing planetary research and exploration, and the participation of knowledgeable scientists and experts in this process is vital to its success. Questions about the nomenclature database and naming process should be sent to Jennifer Blue, USGS Astrogeology Program, 2255 N. Gemini Drive, Flagstaff, Arizona 86001, or by e-mail at jblue@usgs.gov.

References: [1] International Astronomical Union Working Group for Planetary System Nomenclature, Gazetteer of Planetary Nomenclature, December 19, 2008, <http://planetarynames.wr.usgs.gov/>. [2] Masursky, H. et al., 1986, Ann. Gazetteer of Planetary System Nomenclature, USGS Open-File Report 84-692. [3] Batson, R.M. and J.F. Russell, editors, 1995, Gazetteer of Planetary Nomenclature 1994, USGS Bulletin 2129. [4] Whitaker, E.A., 1999, Mapping and Naming the Moon, Cambridge University Press, Cambridge. [5] Andersson, L.E. and E.A. Whitaker, 1982, NASA Catalogue of Lunar Nomenclature, NASA Reference Publication 1097.