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THIRD UNITED NATIONS CONFERENCE ON THE
STANDARDIZATION OF GEOGRAPHICAL NAMES
Athens, 17 August-7 September 1977
Item 4 (d) of the provisional agenda.

Policies, procedures and co-operative
arrangements for the naming of features
beyond a single sovereignty:

(d) Extraterrestrial features

PROBLEMS OF EXTRATERRESTRIAL TOPOGRAPHIC FEATURE NOMENCLATURE*

Paper presented by the Union of Soviet Socialist Republics

* Material for the report of the Working Group on the names of
extraterrestrial topographic features. Prepared by A. M. Komkov (USSR), Chairman
of the Working Group.

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PROBLEMS OF EXTRATERRESTRIAL TOPOGRAPHIC FEATURE NOMENCLATURE

The period between the second and the third United Nations Conferences on the standardization of geographical names is characterized by intensive development of space research. Space research apparatus were used for investigation of the moon as well as Mars, Mercury, Venus and other planets of the solar system.

Successful execution of space programmes in the USSR, USA and other countries promoted a wide programme of the moon surface mapping at scales 1:1,000,000, 1:500 000, 1:250 000 and larger, Mars - at scales 1:5,000,000, 1:1,000,000; 1:250,000; Mercury - at scale 1:5,000,000. These developments caused the demand, which keeps growing, for naming of a considerable number of surface formations of different type and shape on different celestial bodies. That is why it became evidently necessary to revise the former views on naming of extraterrestrial topographic features based on the moon investigation with telescopes.

To solve the problem of naming of a much greater number of topographic features of diverse types and forms on the surface of different planets and their satellites it became necessary to apply a new, toponymical approach.

Having started investigation of this problem the Working Group on the names of extraterrestrial topographic features 1/ in recent years held five meetings timed to the fourth (1972), fifth (1973) and sixth (1975) sessions of the United Nations Group of Experts on geographical names. Between the sessions the work was conducted by correspondence.

First of all the Working Group communicated with the International Astronomic Union (IAU) - scientific-public organization which practically deals with naming of extraterrestrial bodies and their surface formations. The first steps in this direction were not reassuring. We applied to the IAU President 2/ and Secretary-General with an offer of co-operation, but received a negative in-essence reply. 3/ But afterwards we managed to establish business relations with the IAU.

The IAU XVth General Assembly held in Sidney, 1973, introduced amendments to the structure and procedure of preparation and examination of proposals on nomenclature of planets and their satellites. The Working Group on the Planetary System Nomenclature 4/ was set up as well as a number of task groups on nomenclature of the moon, Mars, Mercury, Venus and outer planets of the solar system. The

1/ Initially the following three experts were elected as members of the Working Group: A. M. Komkov, Chairman (USSR), M. F. Burrill (USA), H. G. Lewis (UK). In 1973-1975 they were joined by S. Radó (Hungary), R. Randall (USA), D. Sharma (India), D. Vayacacos (Greece).

2/ Letter to the IAU President B. Stressberg and Secretary-General S. Jager, of 14 August 1973.

3/ Reply letter to Mr. Burrill, Chairman of the United Nations Group of Experts, of 21 August 1973.

4/ The IAU Working Group is composed of P. Millman, Chairman (Canada), B. Levin (USSR), D. Morrison (USA), A. Dollfus (France), C. Mayer (USA), T. Owen (USA) G. Pettengill (USA), B. Smith (USA), S. Runcorn (UK).

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Chairmen of the Task Groups became members of the Working Group. The proposals prepared by each of the task groups are discussed at the Working Group sessions and after approval by simple majority of votes are handed over to the IAU Executive Committee which accepts them without consideration and subsequently also without consideration the proposals are approved by the next IAU General Assembly. The updated structure permits to broaden the scale of activities (to cover all planet bodies with naming) and to increase its rapidness. At the same time it is necessary to mention that under the new structure the preparation and consideration of the proposals is conducted by a comparatively narrow group of specialists and approval of proposals by the IAU Executive Committee and the IAU General Assembly is of a formal character.

Exchange of information between the United Nations and the IAU Working Groups was established. Mr. P. Millman, Chairman of the IAU Working Group (IAUWG) was invited to participate at the United Nations Working Group (UNWG) meeting held in New York on 14 March 1975. He delivered a report on the activities of the IAUWG and got acquainted with remarks and proposals of the UNWG members. A. Komkov, the UNWG Chairman, took part in the IAUWG session held in July 1976 in Moscow, where he delivered a paper "Concerning the Normalization of the Nomenclature of Extraterrestrial Topographic Features". On proposal of the IAUWG Chairman the Chairman of UNWG was included in the IAUWG as a consultant.

Thus, at present favourable conditions for business and fruitful co-operation between the two Working Groups have been established.

The state of affairs in naming of extraterrestrial topographic features is now as follows: the IAUWG at its first session (1974) approved the elaborated earlier "Basic Principles for Planetary System Nomenclature", compiled a list of Latin terms for different types of features and a list of over 20 possible name categories for use in nomenclature of extraterrestrial topographic features (without any indication on what name categories were recommended for certain types of topographic features on different planets). Along with commemorative names after distinguished deceased men of science and engineering, workers in culture and art, the list incorporated such name categories as animals, birds, minerals, islands, lakes, rivers, mountains, deserts, etc., thus causing a torrent of contradictive and unacceptable proposals.

As a result of scrutinizing and selection of proposals definite name categories already in use or recommended for different types of surface formations on different celestial bodies were determined at the IAUWG meetings in 1975 and 1976 (vide table 1).

Gradually the outline of the general system of nomenclature of extraterrestrial topographic features was elaborated. The system stipulates fixation of specified name categories for each group of topographic features on different celestial bodies. This allows to more effectively control the procedure of name assignment and to escape duplicating names on different planets as it happened, for example, in 1973 when the XVth IAU General Assembly approved about 90 commemorative names for Martian craters though these names had been already assigned to the Lunar craters.

In order to escape possible duplicating of names the IAUNG in 1974 passed the recommendation not to assign the names of outstanding workers in art and culture to the Lunar craters and to save this name category for Mercury craters only.

By now, in compliance with the name categories presented in table 1 lists of names of a large number of specific topographic features of the moon, Mars and Mercury are compiled and approved by the IAU. Lists of a certain number of spare names that form a kind of a bank of names to be used in case of emergency are also prepared. Selection of names was made on international basis. A considerable and complicated work has been carried out but it does not mean that all the problems of extraterrestrial topographic feature nomenclature are already solved.

Foreseeing further development of space research and growing demand for extraterrestrial feature names it is necessary to specify and concretize the existing system of naming in order to fix firmly for each group of surface formations on each planet a more definite and sufficiently productive category of names. From the toponymical point of view it seems questionable to use names of research spacecraft or observatories for valleys and precipices on Mercury's surface. These names rather match the features of discrete character than running ones. We think also that such a category as names of large orographic features of the earth is fit for a wider application. Out of the great number of possible names of this kind only 14 names were used up to now and only for the Lunar features.

We doubt the expediency of the application of a large number of Latin terms for designation of different types of extraterrestrial topographic features. The terms being operated in geography and geomorphology at investigation of terrestrial features fully meet the requirements of science and practice. Translation of the terms into Latin by no means increases their scientific significance. The problem of Latin terms was discussed at the last meeting of our Working Group in 1975. It should be noted that almost all members of the United Nations Group of Experts on Geographical Names actively participated in this meeting. The majority of experts expressed the opinion that the generic terms designating different types of extraterrestrial topographic features should be selected from the terrestrial terms and that the terms should be English in English publications, Russian in Russian ones, etc.

As a result of the above-mentioned Working Group meeting we came to the conclusion that at present stage of the investigation of extraterrestrial topographic feature nomenclature the complicated legal aspects should not be touched. But the questions of this kind remain. And now that the general system of planetary system nomenclature is outlined it is expedient to define on broad international basis the procedure of introducing, considering and approving of proposals on names for the extraterrestrial topographic features as well as that of informing all the world scientific circles concerned. The IAU and United Nations co-operation will facilitate the effective solution of this problem.

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Table I

CATEGORIES OF NAMES
 of different types of topographic features being used or recommended for application

Topographic features	MOON		MARS	MERCURY	VENUS
	near side	far side			
Albedo features	-	-	Names from antique world for marking map sheets at scale 1:5000000	-	-
Plains, plateaus, "seas", "bays", "swamps", mountains, valleys, canyons, faults, fissures, and other features of non-crater formation.	Symbolic names. Names transferred from orographic terrestrial features	Symbolic names. Commemorative names. Names transferred from orographic terrestrial features	Names from antique world. Names of terrestrial rivers for valleys and dry riverbeds	Names from antique world for plains and mountains. Names of research spacecraft and observatories for valleys and precipices	Names of Goddesses from antique world for vast plains. Commemorative names (for specialists in the field of radioelectronics and automation) for other topographic features.
LARGE	Commemorative names (for outstanding astronomers, mathematicians, physicists, biologists)	Commemorative names (for outstanding figures in science, art and culture)	Commemorative names (for outstanding astronomers, mathematicians, physicists and others) for craters with a diameter >100 km	Commemorative names (for outstanding writers, poets, composers, painters)	Mythological female names for craters with a diameter >100km
SMALL	Letter indexes attached to names of nearby craters (Mer- dler's system). Male and female names on large scale maps.	Designation system is not elaborated yet	Letter indexes connected with the layout of map sheets at scale 1:5000000. Names of small towns and villages on maps of 1:1000000 and larger.		Modern female names

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