

22*b*. SOUS-COMMISSION POUR NORMALISER LA TERMINOLOGIE
ET LES NOTATIONS CONCERNANT LES METEORS

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The following procedure has been used in compiling this report. After informal discussions with various astronomers working in meteoric astronomy a detailed questionnaire was mailed to all members of Sub-Commission 22*b* and to the President of Commission 22. Replies have been received from V. V. Fedynsky, L. Jacchia, J. Kleczek, and B. J. Levin. The opinions of Z. Ceplecha, V. Guth, G. S. Hawkins, L. Krésak, Z. Kviz, D. W. R. McKinley, and M. Playec have also been considered. An attempt has been made to arrive at the best average opinion of the group while bearing in mind certain fundamental principles. There is a need for a number of basic terms with clear definitions that do not depend on specialized knowledge for their understanding. In choosing these, consideration should be given to the four languages in which most of the meteoric literature has been published, English, French, Russian and German. For example, the two English words 'train' and 'trail' should not be assigned different meanings, since in Russian they are represented by one word only 'след'. Any system of basic words should be kept consistent and simple, and should not include words used commonly with different meanings in other scientific disciplines. The first list, given below, has been restricted to terms concerning which there seems to be fairly general agreement at the present time.

Table 1. Basic Definitions in Meteoric Astronomy

- A.—*meteor*—in particular, the light phenomenon which results from the entry into the Earth's atmosphere of a solid particle from space; more generally, as a noun or an adjective, any physical object or phenomenon associated with such an event.
- B.—*meteoroid*—a solid object moving in interplanetary space, of a size considerably smaller than an asteroid and considerably larger than an atom or molecule.
- C.—*meteorite*—any object defined under B which has reached the surface of the Earth without being completely vaporized.
- D.—*meteoric*—the adjectival form pertaining to definitions A and B.
- E.—*meteoritic*—the adjectival form pertaining to definition C.
- F.—*fireball*—a bright meteor with luminosity which equals or exceeds that of the brightest planets.
- G.—*micrometeorite*—a very small meteorite or meteoritic particle with a diameter in general less than a millimeter.
- H.—*dust*—when used with D or E—finely divided solid matter, with particle sizes in general smaller than micrometeorites.
- J.—*absolute magnitude*—the stellar magnitude any meteor would have if placed in the observer's zenith at a height of 100 km.
- K.—*trajectory*—the line of motion of the meteor relative to the Earth, considered in three dimensions.
- L.—*path*—the projection of the trajectory on the celestial sphere, as seen by the observer.
- M.—*train*—anything (such as light or ionization) left along the trajectory of the meteor after the head of the meteor has passed.

- N.—*persistent*—an adjectival form for use with M indicating durations of some appreciable length.
 O.—*wake*—train phenomena of very short duration, in general much less than a second.
 P.—*radiant*—the point where the backward projection of the meteor trajectory intersects the celestial sphere.
 Q.—*earth-point*—the point where the forward, straight-line projection of the meteor trajectory intersects the surface of the Earth.
 R.—*zenith attraction*—the effect of the Earth's gravity on a meteoric body increasing the velocity and moving the radiant towards the zenith.
 S.—*orbit*—the line of motion of a meteoric body when plotted with reference to the Sun as origin of co-ordinates.
 T.—*shower*—for use with A or D—a number of meteors with approximately parallel trajectories.
 U.—*stream*—for use with A or D—a group of meteoric bodies with nearly identical orbits.

Table 2. Terms Recommended for use in Connection with the Definitions in Table 1.

<i>English</i>	<i>French</i>	<i>Russian</i>	<i>German</i>
A. meteor shooting star	météore étoile filante	метеор падающая звезда	Meteor Sternschnuppe
B. meteoric body meteoric particle meteoroid	corps météorique particule météorique	метеорное тело метеорная частица	Meteorkörper Meteorteilchen
C. meteorite	météorite	метеорит	Meteorit
D. meteoric	météorique	метеорный	meteorisch Meteor-
E. meteoritic	météoritique	метеоритный	meteoritisch
F. bolide fireball	bolide	болид	Feuerkugel
G. micrometeorite	micrométéorite	микрометеорит	Mikrometeorit
H. dust	poussière	пыль	Staub
J. absolute magnitude	magnitude absolue	абсолютная величина	Absolutgrösse
K. trajectory	trajectoire	траектория	Trajectorie atmosphärische Bahn
L. path	trajectoire apparente	путь	Bahnspur scheinbare Bahn
M. train	traînée	след	Schweif
N. persistent enduring	persistant	длительный долговременный	andauernd

<i>English</i>	<i>French</i>	<i>Russian</i>	<i>German</i>
O. wake	sillage	хвост кратковременный след	Schweifansatz
P. radiant	radiant	радиант	Radiant Ausstrahlungspunkt
Q. earth-point	point terrestre	земная точка	Erdpunkt
R. zenith attraction	attraction zénithale	зенитное притяжение	Zenitverschiebung Zenitattraktion
S. orbit	orbite	орбита	Bahn
T. shower	averse	лоток дождь	Schauer
U. stream	essaim courant	рой	Strom

When the words visual, photographic, telescopic, radio, photo-electric are combined with A they should indicate only the method of observation, and should not be used as an indication of brightness or size. For the latter parameters it is recommended that simple words be used such as bright, faint, large, small, etc.

The question of notations is a difficult subject and it is doubtful if these should be too rigidly defined since, in general, all letters and symbols must be used with several meanings. However, it seems worth while to suggest a standard notation for meteor velocities, since there has been some confusion here in the past. The following are recommended:—

V_o (*instrumental velocity*):— The uncorrected velocity as recorded by an instrument.

V_o (*observed velocity*):— V_o corrected for instrumental errors of all types.

V_∞ (*no-atmosphere velocity*):— V_o corrected for deceleration in the Earth's atmosphere.

V_g (*geocentric velocity*):— V_∞ corrected for rotation of the Earth, and the gravitational force (zenith attraction) of the Earth.

V_h (*heliocentric velocity*):— V_g combined with the vector of the Earth's motion around the Sun to give the motion of the meteoric particle relative to the Sun.

The Sub-Commission will welcome additional suggestions and comments from any member of the IAU.

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President of the Sub-Commission