

F1 WORKING GROUP WG1

METEOR SHOWER NOMENCLATURE

NOMENCLATURE DES

PLUIES DE METEORS

PRESIDENT MEMBERS

Josep Trigo-Rodriguez
Lubos Nesusan, Regina Rudawska, Masahiro Koseki,
Tadeuz Jopek, Diego Janches, Quanzhi Ye,
Maria Hajdukova, Gulchehra Kokhirova

TRIENNIAL REPORT 2021-2024

1. Introduction

Meteor showers were originally named by their discoverer, often after the constellation in which their radiant appears, but also sometimes after their parent comet. Adding the name of the nearest star, the month, and other modifiers helped increase the number of unique names, but with the explosion of new showers being identified by large networks of cameras and by sensitive radars, finding unique names can be difficult. The situation is complicated by multiple observations, in which more than one observer identifies one shower, but each discovery is given a different name because of observational errors, difference in the timing of the observations, or simply different choices of nearby stars. There are also, among the working list of meteor showers, spurious associations of meteors not representing a real shower and real showers which have only been observed by a single method or on a single occasion. To address this issue, the Meteor Data Centre (MDC) of the IAU maintains a working list of showers, which now contains nearly one thousand entries. Showers which have been well observed are moved to the established shower list.

The challenges are to avoid using up the limited meteor shower names on showers which may not turn out to exist, or be unique; to name showers in a standard way going forward; to avoid duplication of showers; and to have only unique, well observed showers on the established list. These challenges are being addressed by the Meteor Shower Nomenclature Working Group.

2. Developments within the past triennium

2.1. *Naming of newly discovered showers*

Since naming a new shower removes that name from circulation, even if the shower turns out to be spurious or a duplicate, the Working Group proposed (and had a vote of the full Commission supporting) a new system of giving provisional names based on the time of observation of the new shower. Showers are named with the prefix 'M', followed by the year of discovery, a hyphen, a letter indicating the half-month of observation, and a number for the order of shower submission to the MDC during that half month. Showers will receive an official number and traditional constellation/star name (which may be proposed by the discoverer) only when moved to the established shower list. This is similar to the procedure for naming asteroids, where each receives a letter/number designation, and is later given an official number and may be named.

2.2. Criteria for an established shower

The current established shower list may still contain duplicate or spurious showers. To avoid adding more, new criteria have been drawn up. This requires the shower to have been observed by at least two independent author teams, to have a minimum number of meteor observations, and to have statistical significance compared to the background. The parent body may also be identified. Reviewed publications are required as proof. As before, once the WG approves a nominated shower, it is presented to Commission F1 for final approval.

To deal with showers already on the established list, a procedure for removing showers has also been developed. If an established shower has no supporting publications, is based on few meteors, has been found to be unreliable, or has been shown to be a duplicate of an earlier shower, it may be submitted for removal. Reviewed publications are again required for this procedure. Removed showers will be returned to the working list, and may be reinstated if more convincing evidence of their existence is published.

3. Current and future work

The working group is currently working specifically on the problem of showers which have northern and southern branches, and has decided to leave branched showers of this sort listed as separate showers. The issue of how to decide which of duplicate showers to remove, and how to go about acquiring feedback from the community on these issues, are currently under discussion.

The current working group has made great progress, not only in keeping up with naming new meteor showers, but also with altering the procedures to ensure the process remains manageable in the future. In the next triennium, the working group will finish the new adjustments and determine how to apply them to existing data.

Josep Trigo-Rodriguez
President of F1-WG1