ARCHIVING FOR FUTURE EXTRAGALACTIC IMAGE-DATABASES

G. Paturel[1]
Observatoire de Lyon
69230 Saint-Genis Laval
France

ABSTRACT. On the experience acquired since 1983 when creating the Lyon-Meudon Extragalactic Database, we discuss the problems of identifying and designating extragalactic objects. We suggest some ways of improvement. The main conclusion is that it is urgent to use images in a standardised format. The IAU could help to organise such a standardisation.

1. INTRODUCTION

In 1983 we created a database for galaxies (hereafter EDB, for extragalacitc database) in Lyons Observatory (Paturel et al. 1986). Several catalogues were published from EDB. The most important one is the Principal Galaxy Catalogue (hereafter PGC) giving more than 131000 cross-identifications for more than 73000 galaxies. This work showed us how difficult the problem of identification and designation of astronomical objects is. This problem is of first importance for creating a proper link between present and forthcoming data (i.e. for archiving).

2. IDENTIFICATION AND DESIGNATION

An important distinction should be made between identification and designation. An IDENTIFICATION is a means to allow the retrieval of an object. Today, this is done generally by publishing coordinates and additional information (diameter, morphological description, magnitude, position angle...). Less frequently, an identification chart is published. A DESIGNATION is a convention allowing us to specify an object. It is in fact a notation used for summarising all the information given for an identification.

3. IMPROVEMENT TO IAU RECOMMENDATIONS

The last IAU recommendations (Proceedings of the 20th General Assembly, 1988, Appendix D) seem very convenient for designation. The two major recommendations already endorsed by the IAU are:

---

[1]With the collaboration of Mme C. Petit

1) An existing name should never be altered (thus the addition of an extension letter should be prohibited).
2) A designation should give at least two names and/or coordinates.

We suggest some new possible recommendations:

1) Any large catalogue giving new data or a new identification should give a clear designation (to avoid creating a galaxy without a name).
2) Designations should be used in a given hierarchy (e.g. to avoid the use of exotic names for a well-known NGC galaxy).
3) A notation should be used to indicate a name designating a multiple object (e.g. UGC 1) or an ambiguous name (NGC4342). The use of names having such a flag would not be recommended.

4. IMAGE-DATABASES

It is remarkable that a chart, even with a poor resolution, is better than coordinates. This is due to the fact that an image contains a considerable amount of information (diameter, position angle, brightness, neighbourhood...). Now, computers are so powerful that they let us handle images very easily. The conclusion is that identification of all galaxies should be made from a large-scale picture. Thus it would be convenient to recommend the use of a standardised format (e.g. North on the top, East on the left, coordinates of the centre and scale just below the frame, minimum of three distinct stars in the field).

Another important point concerns old names like NGC and IC. In many cases the original position and description are so poor that it is impossible to assign the corresponding name to an object. Clearly, a convention is needed from which all existing names would be assigned to an object well identified on a chart. Unassigned names should receive a flag. It would be wise to ask the IAU to organise such a standardisation. The most efficient way would be to centralise all information in such a way that anyone could ask for help in designating and identifying objects. One could imagine something similar to the IAU telegrams collected at the Smithsonian Astrophysical Observatory in Cambridge (USA). Each new individual object would be registered with a proper designation and identification. (The permanently updated dictionary of acronyms by Lortet et al. can be seen as a first step in this way.) It is our opinion that nothing can be done properly without recourse to images. We are engaged now in creating an identification chart for at least the 75000 galaxies contained in our Extragalactic Database.

REFERENCES

Dickel, H.R., Lortet, M.C., de Boer, K.S., 1987, A&AS 68, 75
Fernandez, A., Lortet, M.C., Spite, F., 1983, A&AS 52, 1 (FLS)
Paturel, G., Bottinelli, L., Fouqué, P., Gouguenheim, L., 1988, ESO Conference and Workshop Proceedings No. 28, 435
Paturel, G., Fouqué, P., Bottinelli, L., Gouguenheim, L., 1989a, A&AS 80, 299 (PGC)
Paturel, G., Fouqué, P., Bottinelli, L., Gouguenheim, L., 1989b, Monographies de la Base de Données Extragalactiques, No. 1 (Volumes I, II, III) (PGC)