CENTRALIZATION OF EXTRAGALACTIC DATA

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Abstract - We present a project of centralization of extragalactic data concerning normal galaxies.

The project of creating a data bank about galaxies is an old dream. Knut Lundmark had already thought of such a project, but the work never came to anything. The use of computers has made this work possible.
We shall try to answer four questions :

I) Why centralize data ?
Three reasons to support this project :
1) Any statistical study begins with the tedious work of constructing sample. It is better to record this information at the start so that it is available to everyone.
2) The centralization makes it possible to compare the different sources of data. It is then possible to judge the samples better and to improve them by "homogeneization" methods (ex. : reduction of isophote diameters to a given system).
3) New statistical methods for data analysis permet studies which were impossible before (Taxonomy or principal component analysis). These studies require large samples containing numerous parameters.

II) How to do such a centralization ?
It could be difficult to create a specialized center with enough staff to permet at the same time the collecting of new data, its treatment for homogeneization and diffusion.
It now seems easier to group from time to time the compilations made by different astronomers. We already have working collaboration between different groups.
This could lead to the periodical publication of an up to date catalog containing parameters as homogeneous as possible.
At the moment only the centralization of numerical data and associated references is possible (for example the collection of isophote charts can not be considered).

TABLE 1

Principal new general catalogs and compilations about normal galaxies.

Short designation	Reference	Nbr of galaxies	criteria	parameters
UGC	Nilson (1973)	12921	$\delta > -2°30'$ $D > 1'$	α, δ, D, D, T, m (V), β
EUS	Holmberg et al. (1981)	18500	$\delta < -18°$ $D > 1'$	α, δ, D, T, β
CGCG	Zwicky et al. (1968)	31350	$\delta > -3°$ $m < 15.7$	α, δ, m, (V)
MCG	Vorontsov-Veljaminov (1974)	34000	$\delta > -45°$	α, δ, T, m
SGC	Corwin (198?)		$\delta < -18°$ later $\delta < +3°$ $D > 1.5'$	α, δ, D, T ...
RC2 (★)	Vaucouleurs et al. (1976)	4364	No	(α, δ, T, L, D, D, m, C, SH, V)
HICG (★)	Bottinelli et al. (1981)	1200	No	W, SH, V
IGS (★)	Gisler et al. (1979)	2004	$\delta > 3°$	V
(★)	Rood (198?)		No	V

(★) Compilation

α, δ, coordinates   m, magnitude
β, position angle   V, radial velocity
D, major and minor axes   C, colors
T, morphological type   SH, neutral hydrogen flux
L, luminosity class   W, 21-cm line width

III) Where to find available data ?

   1) The general catalogs group all known objects relating to certain criteria (coordinates, magnitudes, diameters ...). We give in table 1 a list of principal general catalogs about normal galaxies.

   2) Compilations. These are the collection of all existing data for the largest possible number of galaxies. We give in table 1 the principal compilations.

   3) Papers about new measurements. There are a large number of such lists. The information can concern one or many galaxies.

IV) What can be the role of the IAU ?

   IAU can play an important role by publishing some recommendations about the following points :

   1) Nomenclature. (ex. : NGC, IC and Anonymus; the anonymus number being followed by nine digits).

   2) Publication of raw data without corrections.

   3) Publication of astronomical and technical characteristics such as the coordinates as accuratly as possible, the name of the telescope, the velocity resolution and spatial resolution ...)

   4) Use of units and notations as homogeneous as possible.

   Even within the proposed solution it is necessary to get technical assistance and IAU can support the application to directors for financial assistance to continue the project.

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