

## ARCHIVING AND DISTRIBUTION OF SPECTROSCOPIC DATA

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Spectroscopy is a fundamental tool for the investigation of physical conditions in astronomical objects. Up to the present a considerable amount of information has been collected, which could be of great help in research in all fields of Astrophysics. There is however the problem of safeguarding such material, to create ad hoc archives of raw and/or reduced spectral data, and to have homogenised means of documentation and of distribution of the material to the Astronomical Community. These problems were discussed by members of the IAU Commission 29, Stellar Spectra, during the 21st IAU General Assembly, and the results are herewith summarized.

Up to fairly recent times, photographic plates have been the most used means for spectral recording. At present, they are almost completely substituted by the electronic detectors. Photographic plates are still the best collecting system for wide field research, such as the objective prism works with Schmidt telescopes. Plates are also used for special spectroscopic work, as they still represent a far more uniform set of data, than do digital data from electronic detectors. It should anyhow be considered that so far a considerable amount of spectroscopic plates has been collected over almost one century of observations. Actually, the very rich spectroscopic plate vaults of old Observatories represent a precious collection of unique information, of which all fields of Modern Astronomy would greatly benefit. However, their use for research is very difficult, in particular because there is no full documentation on them easily available.

Concerning the electronic detectors, their application have generated and will continue to cause an extremely rapid growth in the build-up of raw data files. The information contained in such data could represent an important source for future studies. However, Observatories generally do not permanently preserve the original data files, as they are considered to belong to individual observers, neither are the observatory logbooks easily accessible from outside. In this regard, an important exception is represented by the La Palma Data Archiving System at the Royal Greenwich Observatory, where all the observations collected with the telescopes of the Isaac Newton Group at La Palma are currently archived. Via the computer networks one can have access to the catalogue of the observations, and apply for copies of the original data. Standard computer codes for data reduction are also available. Some other observatories are developing archiving projects. Yet in most cases neither raw nor compressed data from electronic detectors are archived. In addition, the tapes with the recordings are recycled after 6 months-one year. On the other hand, individual observers generally do not take care to preserve their material, so

other hand, individual observers generally do not take care to preserve their material, so that it is reasonable to conclude that a large amount of precious material has already been irretrievably lost.

Thirteen years of IUE observations of ultraviolet spectra have produced such a large quantity of data to presently represent the most complete and wide database in Astrophysics. The IUE Archive is largely used through the world for research on individual objects, as well as for statistical studies.

During the 21st IAU General Assembly a Meeting was organised by IAU Commission 29, Stellar Spectra, to discuss the problem of archiving spectroscopic data. During the Meeting the results of a Questionnaire circulated among the Astronomical Community were presented. Most persons recognised the need for extensive archives of reduced spectrograms, and suggested the essential information for each file. It was especially considered imperative to have a full documentation about the accomplished spectroscopic observations.

It was in particular recognized that it was important to carefully safeguard old spectroscopic plates, which represent the only existing documentation of past events, to create an accessible catalogue of such data, and to maintain a continued capability to reduce previously unanalysed plates.

Concerning spectroscopic data collected with electronic detectors, it was recognised that the dynamical nature of these data requires a well-organised maintenance, storage and reduction capability, difficult to keep up for extended periods without firm justification. Indeed, the usefulness of any archival facility is closely related to its data access response speed. Therefore it would be fundamental to stimulate and guide the Astronomical Observatories and Space Agencies in all domains of the e.m. spectrum to generate concise logbooks of the observations made, and to maintain these in a remotely accessible mode. A useful possibility might be to deposit these for integration in SIMBAD and CDROMs for distribution.

It was finally recommended to create an ad hoc Working Group in order to establish agreed means of archiving and distributing the spectroscopic data.

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