corrected monolithic mirror would be a reasonable choice for the VLT. At the time of the NTT completion which might also correspond to the start of the construction of the VLT, enough experience will have been acquired (including tests on a real telescope) so that the extrapolation of the NTT technology up to a diameter of about 8–10 m will be possible. The corresponding blank will not necessarily be a solid meniscus but will more likely be a hollow honeycomb structure either made out of glass or metal. There too, the important investigation on metal mirrors carried out in the framework of the NTT project may have an important impact on the VLT.

As a result of these various considerations, option (c) seems at the moment the most attractive. A similar conclusion was also reached by ESO's Scientific and Technical Committee at its meeting on 8 November, 1983, where it was clearly recommended that ESO should consider its VLT as a limited array of large telescopes, and start as soon as possible on the definition of the first of its 8–10 metre elements.

Interferometry is only meaningful if some of the telescopes are mobile. Again, the cost aspects of making a telescope mobile but at the same time stable to high accuracy, need be studied. Alternatively, at least in the IR it may be profitable to do interferometry with a combination of fixed 8 m and mobile smaller telescopes. This point also needs further study.

Another set of studies which started a few months ago is that related to the choice of a site for the VLT. The absolute requirement for the site for an expensive telescope to be operated at its highest efficiency is excellent seeing. This is already the case when only standard applications like various types of spectroscopy, or faint object observation, or infrared photometry are considered. It is still more strongly the case in interferometric applications where the signal-to-noise ratio may vary with as much as the 3rd or 4th power of the seeing parameter. A second and important requirement is very low humidity for IR studies; regions with strong winds are also to be avoided.

One should also note that the selection of a site is not without consequence for the definition of the concept. For instance it may not be obvious to find an excellent site on which both a coherent long baseline array and the large telescopes can fit together without affecting the performance of one or the other.

A workshop on "Site Testing for Future Large Telescopes" was held very recently (Oct. 4–6) at ESO in Chile in order to "review what is being done to test and compare the very best sites in the world and what more should be done in the coming few years". Meteorological observations and measurements of total precipitable water content have already been started in a few very dry sites in northern Chile. Seeing studies should be taken up next year if these first measurements are satisfactory.

Together with the measurements for site selection, technical studies are being initiated, as well as a detailed discussion of the implications on the scientific objectives. Suggestions and research proposals from institutes in the ESO countries on subjects related to the VLT (either on concepts, technology, instrumentation, or in more specific areas such as wide band high efficiency coatings, image slicers, fiber optics . . .) will be sollicited.

The Proceedings of the Workshop on "ESO's Very Large Telescope" are available from ESO-Garching. The price for the 270-page volume is DM 40.— and has to be prepaid (preferably by cheque).

Orders should be sent to

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A New Class of Cataclysmic Variables: the Intermediate Polars

M. Mouchet, Observatoire de Meudon

Introduction

Several newly discovered hard X-ray sources (kT > 2 keV) were identified with binary systems, characterized by an orbital period of 3 to 4 hours and by strong emission lines in the optical and ultraviolet superimposed on a blue continuum. (Fig. 1, 2).

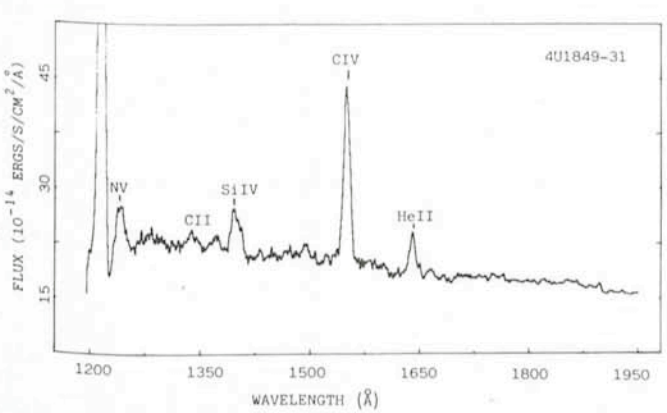

Fig. 1: *Average IUE spectrum of 4U1849–31.*

Moreover, these systems exhibit strong periodic and coherent variations on a time scale of ten minutes, the so-called "pulsations", with a full amplitude from 10 to 40%. (Fig. 3). These

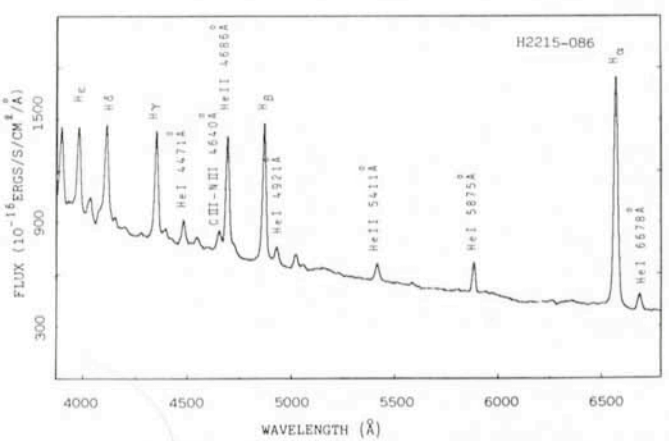

Fig. 2: *Average optical spectrum of H2215–086 obtained at the 3.6 m telescope using the IDS attached at the Boller and Chivens spectrograph. Note the strong He II 4686 Å line.*