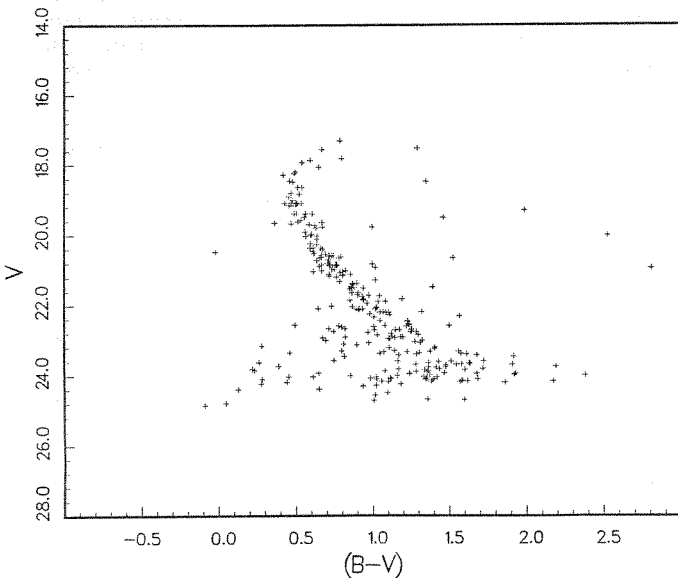


SCIENTIFIC NEWS

GLOBULAR CLUSTER RESEARCH

Greg Fahlman and Harvey Richer (University of British Columbia) are pursuing a project of deep CCD photometry in galactic globular clusters. On an observing run at CFHT in June 1984 they obtained deep frames on M5 and M71. The data for M5 were fully analyzed at CFHT using software written by Peter Stetson (DAO) and Dennis Crabtree (CFHT). The resulting color-magnitude diagram is shown below. Some preliminary results indicate that

- (a) the apparent distance modulus to M5 is about 14.40.
- (b) the luminosity function of the cluster is very flat with no evidence of a turnover, and
- (c) the width of the main sequence is consistent with the errors in photometry only, implying very little true intrinsic width. This latter result can tightly constrain any metallicity or helium abundance variation among the main sequence stars in M5.



PREPPY - CCD Preprocessing Package

PREPPY is a command language reduction package for the preprocessing of CCD images from the CFH telescope. The basic processing which can be accomplished includes bias and dark subtraction, division by flatfields, and bad pixel correction.

Images are stored on disk in floating point format and all operations performed on the images are done with REAL*4 precision. After processing, the images are converted to 16-bit integers before being written to tape in FITS format.

When images are stored on disk the FITS header is also kept and, as various operations are done on the image, the FITS header is updated to reflect these operations. This modified FITS header is then written to tape along with the processed image.

Images can be displayed on the I2S image processing system, and there are several functions for interactive examination of these images. Other features of the system include a session history, command files, image cataloging and an on-line help facility.

By the way, observers are reminded that it is CFHT policy that all CCD data be archived immediately after an observing run. This is done to provide a backup of the observers' data and also to allow us to use the images for engineering purposes. This is currently done in Waimea using a simple procedure on the VAX computer. It is expected that this task will be handled by the observers, although in exceptional circumstances the archiving will be performed by a CFHT staff member in Waimea. However it is still the responsibility of the astronomer to see that his data is properly archived.

VAX FTS DATA REDUCTION

The Fourier Transfer Spectrometer data reduction programs have been transferred from the HP to the VAX computer. Many modifications and additions have been implemented in order to: take advantage of the VAX hardware, create a more integrated set of programs, and allow more flexibility in data reduction. The VAX FTS program, which is written in FORTRAN 77, makes extensive use of the DISSPLA graphics software package and the FPS array processor hardware. Both program execution speed and data storage capability have been greatly enhanced. The VAX program emphasizes disk data storage (while allowing magnetic tape storage), whereas the HP programs are rigidly tied to only magnetic tape data storage.

The major FTS data reduction functions are:

- cataloging all types of FTS data files
- coding primary interferograms
- coding secondary interferograms
- creating secondary interferograms
- creating spectra
- plotting interferograms and spectra.

J.P. Maillard and B. Link used the VAX FTS program to reduce data from the August 1984 FTS run. Most phases of data reduction were tested, with generally successful results. Based on this testing, J.P. Maillard has suggested some improvements and additions to the VAX program. A few other additions are outstanding, e.g., creating spectrum data files in FITS format. The VAX program also needs more evaluation with respect to interfacing with novice users. Thus, while not 100% complete, the VAX FTS data reduction program is available for use.