

Observations with the Coudé Spectrograph

The first coudé run of the semester saw a gaggle of astronomers (Tom Bolton, Doug Gies, Gordon Walker and Stevenson Yang) working with the spectrograph on two projects simultaneously. The first, a study of X-ray binaries, had limited success due to slower than expected speed of the instrument. Better results were obtained for the second project, precision radial velocities of Delta Scuti stars. Alan Batten followed, continuing his program of photographic radial velocities.

In August M. and F. Spite continued their project of Reticon spectroscopy of extreme Population II stars. One exciting result already realized from this program is the determination of the primordial lithium abundance. The derived abundance suggests the universe is open, and this result is not subject to as many uncertainties as similar analyses of deuterium.

Ann Boesgaard then came to try using the spectrograph in the ultraviolet. It proved to be somewhat slower than hoped, but she nevertheless obtained some useful data in her search for lines of interstellar beryllium at 3130 Å. Equivalent speed was one hour for signal-to-noise ratio 100 for a star with $U=2.25$ at 1.8 Å/mm. It should be noted that atmospheric extinction and dispersion can significantly affect exposure times at these short wavelengths.

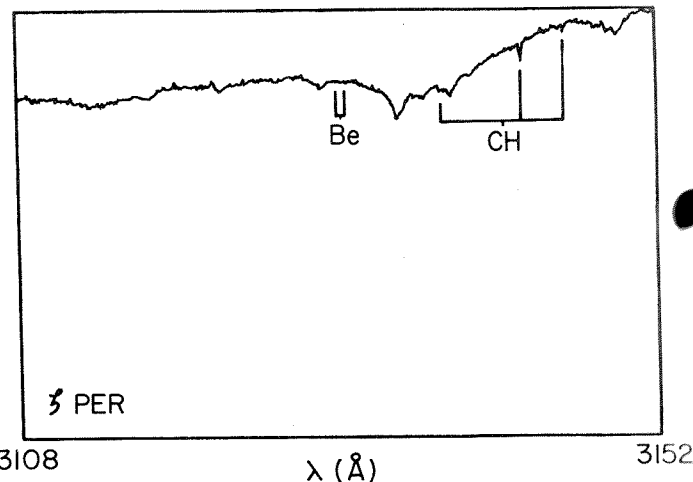
Bruce Campbell continued his program of precision radial velocities of solar-like stars in four runs through the semester. Some progress has been made in the reduction of this data with the discovery, and successful monitoring of high frequency components to dispersion curves from the spectrograph.

Roger and Guisa Cayrel returned for another coudé run in November. They obtained more good spectra for their study of extreme halo population stars. The

Cayrels, Chris Pritchett and Alan Irwin were collaborators with Bruce Campbell, who observed in December for another program of abundance analyses of field dwarfs and giants.

The electronographic camera was emplaced at the coudé for the first time in December. This was alternated with the Reticon for joint runs by P. Felenbok and F. Praderie. The C.E. was found to be substantially faster than the Reticon in a search for interstellar OH lines in the ultraviolet, while both instruments were used in a study of emission lines in Ae stars.

Sidney Wolfe and Jim Heasley tried using the Reticon to observe He I 10830 Å. Not surprisingly, the system proved much too slow to be useful at this wavelength. They switched to observation in the visible, but were unfortunately plagued by weather and telescope problems.



Spectrum of Zeta Persei in the ultraviolet obtained by Ann Boesgaard. The signal-to-noise ratio is about 450:1, and the resolution is about 0.08 Å. Known interstellar lines of CH are indicated, and the predicted positions of interstellar beryllium lines are shown. The Be lines are not detected, with an upper limit equivalent width of 0.3 m Å.

This & That

A new CFHT Observers Manual is currently in production. Our mailing list for this much expanded version is initially all major astronomical institutions in Canada and France, and some in the U.S.A. Individuals wishing to have a copy of the new manual, please send a request to CFHT headquarters (address at the end of this Bulletin).

New Observing Time Request Forms are now available. These have been

streamlined to help the reviewers and to give more data on observer requirements to CFHT staff. These new forms are available from the national agencies (see "Requests for Observing Time" in this Bulletin).

JOB OPENINGS: Two positions are currently open at CFHT, one for a mechanical technician, the other for an electronics technician. Both positions are with the summit crew. Interested persons should send a resumé to CFHT headquarters.

There was a wedding of two CFHT staff members on October 17, 1981 - resident astronomer Carol Christian and electronic engineer Patrick Waddell were married in Cincinnati, Ohio. Our congratulations and best wishes to them both.

Users manuals are now available for most of the fully commissioned instruments. Copies are normally provided to observers with assigned time on the instrument. Currently available manuals are:

- Prime Focus Camera
- Users Guide for ITT 90mm Image Tube
- CFHT Wide Field Corrector Objective Gratings
- CFHT Photographic and Darkroom Facilities
- Plate Baking Procedures
- 1872 Reticon at Coudé
- Coudé Spectrograph f/7.4
- RETICENT User's Instructions
- RTE FORTH User's Manual

Prime focus observers should note that two 10x10 inch filters have recently been broken - the OG 570 and the RG 610. Replacements are not expected before April 1982.

The National Research Council of Canada and Centre National de la Recherche Scientifique of France have provided funds for the construction of our new base facilities to be built in Waimea. Construction is to start early January and should be completed in October of this year.

Staff changes

Edward TYLER, software technician, now has a permanent position with CFHT. Ed will continue to help with instrumentation software development.

Ken BARTON has been recruited as a telescope operator, replacing Meg Whittle at the controle console.

Charles POMASKI has been hired as observatory electrician. Charles has joined the crew at the summit.

Lori FICKES joined CFHT last July as a secretary. Lori has replaced Hannah Thornton in the front office.

Patrick WADDELL, electronic engineer, has come to CFHT from Kitt Peak National Observatory. Pat is responsible for testing and repairing instrumentation and telescope electronics.

Philippe BOURLON left CFHT on July 31, 1981 after six years of service to the Corporation. Philippe was in charge of the Instrumentation Program, and was closely involved with the early definition of most CFHT instruments. He has now taken a position with the new Franco-German Institut de Recherche en Astronomie Millimétrique.

Telescope Progress

The main features of this past semester were the commissioning of the Cassegrain bonnette and of the infra-red upper end.

The cassegrain bonnette arrived as scheduled and was tested on the telescope with the assistance of the Haute Provence observatory team during the month of July. Tests were very satisfactory except for flexure in use of the guiding mirror arms. This has been solved since but sky tests are required to confirm it.

The infrared upper end was modified during the summer months. First light was obtained on October 21, and the upper end worked perfectly. During the following days the Cassegrain upper end was also put on the telescope to check the mechanical and electrical parts. It is now ready for tests with the F/8 mirror in early 1982.

The polishing of the 1.8m cassegrain mirror itself has been completed by DAO, Victoria, Canada, and the mirror accepted in the shop in September. It is excellent except for two narrow inner grooves and a turned down edge which are probably acceptable. The mirror was delivered to CFHT in December and will be tested on the sky in April.

The telescope polar axis has been realigned both in azimuth and elevation. Drifts are now minimal except for tracking speed which still needs to be improved for manual operation (This effect is automatically corrected for under computer control).

The installation of the new prime focus module has been delayed due to a wrong process used during manufacturing. The faulty parts have had to be redone and installation on the telescope is scheduled for May 1982.

The primary mirror was realuminized in September. An excellent coating about 700A thick was obtained.

Following serious breakdowns and leaks in the dome, the dome has been completely overhauled during the summer and is now working smoothly. The rotation speed has also been increased by a factor of two thus reducing the setting time and shortening the time lost in accessing to and from the prime focus cage.

Finally an extensive remodeling of the observatory labs and rooms is underway as a result of the experience acquired during the first two years of operation. This will result in better efficiency and convenience for both the support staff and the visiting astronomers.