
News From CAFE, the Cassegrain Fiber Environment

Nadine Manset & Greg Barrick - CFHT

The CAFE unit.

CAFE will provide a fiber feed from the Cassegrain to the Coude focus, replacing the mirror trains, and increasing the versatility and performance of the high-resolution spectrograph Gecko. When installed permanently on the Cassegrain Bonnette, rapid switching between the f/8 and the Coude focus will be possible.

CAFE consists of three parts: an optical bench mounted on the Cassegrain Bonnette, a calibration unit (flat field and spectral), a fiber optic cable, and a Bowen-Wallraven slicer for injecting the beam into the Gecko Spectrograph.

The optical bench is mounted on the south port of the Cassegrain bonnette and contains two calibration lamps, the fiber and a Low Light Level TV camera for field acquisition and guiding; see Figure 1 for a view of the inside of the CAFE head. The fiber will be run from the f/8 Cassegrain focus along the telescope's west beam to the south pier and then to the Upper Coude Room. Light coming from the fiber is injected into the spectrograph at f/20 with the use of a Bowen-Wallraven slicer which provides 4 slices with a 200 micron width and 3.2 mm height.

The expected overall efficiency of CAFE will be slightly better than the mirror train down to 450 nm, but in the UV, transmission falls rapidly.

Status of the CAFE project.

CAFE was designed and built for the CFHT between May 1998 and September 1999 at the Observatoire de Paris-Meudon under the supervision of Jacques Baudrand. In September 1999, it was received at CFHT and extensively tested during the last 2 weeks of October by G. Barrick, J. Ward, G. Matsushige, N. Manset, and W. Knight, with the help of J. Baudrand and R. Vitry from Observatoire de Paris-Meudon.

A series of optical tests (slice width and height, f/ratio of the output beam, flux of the calibration lamps, alignment of the optics, focusing of the LLLTV), mechanical tests (stability, flexure), and electronics tests (reliability and robustness of the electronics, behavior under unusual circumstances, adequate control, error messages, etc.) were performed at room temperature on the 3rd floor as well as in the cold on the fifth floor. Mechanically and optically, CAFE has met CFHT's requirements, but was sent back to France to finish the electronics and software. CAFE should be received at CFHT in early Spring 2000 and tested on the sky near the middle of 2000. Only when fully tested and characterized will CAFE be offered to the community; it should be noted that the long slit mode is not available when CAFE is used. The UV mirror train will continue to be offered for observations below 400 nm until MegaPrime becomes a reality and the old PF upper end is decommissioned.

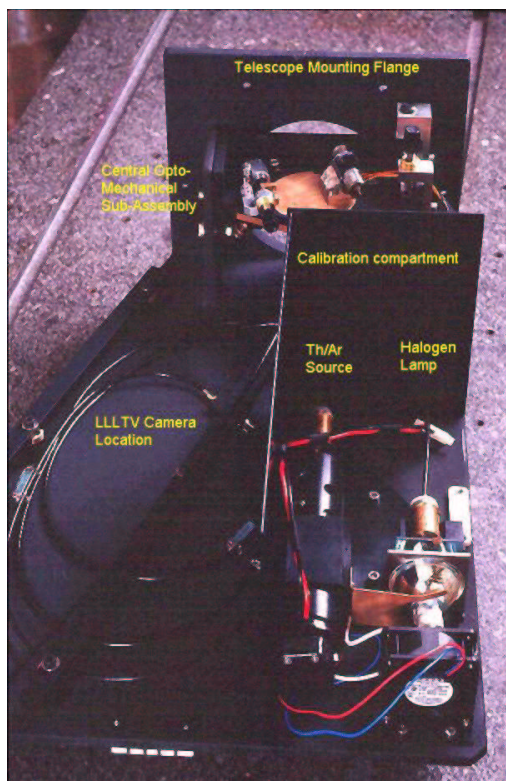


Figure 1: The CAFE head with its cover removed.

Updates on CAFE will be posted on the Web at the following URL: <http://www.cfht.hawaii.edu/Instruments/Spectroscopy/Gecko/Fiber-Feed/>

News from TCS IV

Bill Cruise- CFHT

TCS IV has now completed its first year of operation. And it has been a mostly successful year. The system was an instant success with both the Observing Assistants and the observers alike. While it has not been entirely trouble free, it has done very well in terms of time lost.

Many parts of the system have undergone improvement over the year, and efficiency and reliability have generally improved. The system is still using TCS III to provide services for the bonnettes and the dome, but these are currently being moved to the TCS IV EPICS and vxWorks environment. When done the ancient HP 1000 computers can take the final plunge off the fourth floor catwalk.

TCS IV had a major, unexpected Y2K problem which was identified during early tests, and was fixed. On 1 Jan 2000 we encountered a Y2K bug in the TCS III system. The bug is in the system libraries, and is impossible for us to fix. We were able to work around it for the limited