is used for this configuration. As a result of these changes the WHITE optical configuration is no longer available.

Figure 8 shows spectra for the standard star g1912b. The curve labeled 300 l/mm Blue is from observations made the previous year. The curves labeled 300 l/mm UV and 1200 l/mm UV were obtained during a recent engineering night. The difference in the noise in the data comes from the different integration time on the star (60 seconds for 300 l/mm Blue, 40 seconds for 1200 l/mm UV and 10 seconds for 300 l/mm UV).

The new UV optics + module is ~4 times more efficient than the Blue optics and module at 3200 Å and about 3 and 1.5 times at 3500 Å and 4000 Å respectively. The new 1200 l/mm grating is up to 1.2 times as efficient as the 300 l/mm at 3200 Å but is less efficient than the latter redward of 3400 Å. With the new grating, module and optics we are doing better than about 5 times blueward of 3200 Å and as good at 4000 Å as was previously possible with the best configuration at that time.

The full width at half maximum of most of the lines from the calibration spectrum show no significant degradation of the imaging quality from 3000 Å to 4500 Å.

S. Béland, T. Davidge

IR Secondary Status Report

The existing f/36 IR secondary mirror was fabricated in the early days of CFHT at a time when sub-arcsecond IR imaging was not possible. Although the cores of star images using this mirror have been quite sharp, optical tests of the mirror while in service on the telescope indicated that the mirror suffers from a steeply turned edge which, under ideal conditions, results in light excess in the wings of star images.

On-going efforts to improve telescope image quality led CFHT to award a contract for the fabrication of a new IR secondary mirror to Contraves U.S.A. in June of 1990. The new f/35 mirror will be slightly larger than the current one and will hopefully have a decidedly improved optical figure.

One change between the old and new mirror designs is in the placement of the weight reduction cavities. The mirror currently in use is a glued CERVIT sandwich with the cavities buried internal to the structure. Since it was felt that stresses due to differential expansion of the glue-line were at least partially responsible for print-though of the cavities seen on the optical surface, the new mirror was designed using a single piece of ZERODUR into which cavities were ground from the back side. (Light-weighting is required to reduce the mirror moment of inertia about the chop axis and thus reduce drive forces required for a given chop amplitude and frequency).

We currently plan to mount the new mirror on the same mechanical hardware used with the existing f/36 secondary mirror. Plans for an improved IR secondary mirror mount, drive, and upper-end are now under consideration and will be planned with an imaging adaptive optic system in mind.

Acceptance testing of the completed but uncoated mirror is slated for mid-June while delivery to CFHT is expected in late July. Initial use of the mirror on the sky is scheduled for October of this year.

D. Salmon

Coudé f/4 Spectrograph Status Report

The coudé f/4 spectrograph is progressing well on all fronts. Most mechanical components being fabricated in Canada are ready for final assembly and testing at the DAO. Delivery of most of these subassemblies should begin late in the Summer.

Definition of the electrical control system has been finalized by DAO and CFHT. Some of the necessary electronic hardware is now in hand in Waimea. Details of the cabling system interconnecting the devices in the spectrograph with the external controller are essentially complete, the cables have been purchased, and the connectors will be added soon.

Three different contractors are working on the collimator mirrors, the camera mirrors, and the corrector lenses and prisms. The wedge prisms have already been received in Waimea. All optical components should be in hand by September. The image slicers are being ordered as this issue is being readied to go to press.

At CFHT design work has been completed for several of the components of the slit environment. Fabrication of the crennel frame, the slit plate, and the comparison lamp unit should begin soon. The excellent progress on the detector environment will be detailed in an upcoming article.

If the current timetable is maintained, much of the month of October, 1991, will be required for the rather dirty work in the coudé room to carry out the installation of the support pedestals, the new cable trays, and the new crennel frame for the f/4 spectrograph. Since the installation of the optical-mechanical components can be carried out on the third floor during days without disturbing other operations, it is hoped that the first comparison spectra can be obtained before the end of 1991.

J. Glaspey, D. Salmon

An Astigmatism Corrector for HRCam

A variable astigmatic lens has been added to the HRCam optics in order to remove any astigmatism which might exist or develop in the primary mirror (or in HRcam itself). The power and orientation of this corrector are adjustable from the HRCam control keyboard. Power ranges from 0.0 to 0.8 arcsec (least confusion diameter) which is amply sufficient to correct the typical ~0.3 arcsec of astigmatism observed at prime focus. In use, the corrector is adjusted such that slightly defocussed stellar images appear round rather than elongated as they do when astigmatism is present. Early test during the April 1991 HRCam runs confirmed the good operation of the device which should help break the 0.4 arcsec "floor" below which optical aberrations have prevented sharpening the FWHMs.

The clever optical design (two counter-rotating cylindrical lenses of opposite power) is due to DAO's Harvey Richardson. Allen Moore (DAO) invented the tiny mechanisms needed to hold and drive this new device in the increasingly crowded optical path of HRCam. And Murray Fletcher put it all together, including the very friendly control software.

R. Racine, M. Fletcher, D. Salmon