sions with E. Swinnen and G. Ihle, we eventually managed to obtain a more accurate picture of the 3.6-m thermal problem.

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CAT/CES NEWS

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During the last week of March, a new CCD was tested on the Coudé Echelle Spectrograph's Long Camera. This CCD, ESO#38, is a LORAL/LESSER 2688 × 512 thinned, backside illuminated device (pixel size 15 × 15 μm) with anti-reflection coating. The quantum efficiency is about 80% throughout the visible wavelength range (350–800 nm) with a peak value of 90% at 700 nm. The values are better by a factor of 5 in the blue to 2 in the red than CCD#34 which is presently in use on the Long Camera (see Table 1). The high QE is obtained after flooding the CCD with intense UV light. In normal operations, it is expected that the CCD will need to be UV flooded once every month. The new chip is mounted in a continuous flow cryostat, with a hold time of about one week.

Efficiency tests were carried out which confirmed the high sensitivity of the CCD. We were, however, confronted with a degradation in resolution at high resolving powers. Specifically, a slit setting to yield a resolution of 100,000 resulted in an actual resolving power of about 70,000. The details are given in Table 2. According to the CCD detector group, the degradation in resolution is expected especially in the UV with backside illuminated devices. Due to a *field-free* region inside the device, photon-generated electrons spread to adjacent pixels, thus increasing the effective pixel size. This effect is more pronounced in the blue than in the red.

Given the above results it was decided not to offer CCD #38 to the ESO community at the start of the current period 55. For the moment, the Short Camera with CCD #9 and the Long Camera with CCD #34 are available. The stability of the UV-flooding of CCD #38 will be further tested and a solution has to be found for the degradation in resolution. Due to the very high performance of this chip, we plan to offer CCD #38 with the Long Camera starting in August 1995 after the "idle" period of the CAT telescope. The Short Camera and CCD #9 will be decommissioned and CCD #38 offered to the observers requiring a resolving power up to R = 70,000. For programmes requiring higher resolution CCD #34 will be retained. A new version of the CAT+CES Operating Manual containing the characteristics of the new configuration will also be distributed. The high QE, the low read-out noise (8 e/pixel), and the large size of CCD #38 would be a significant improvement in the performance of the CAT/CES spectrograph if a procedure for recovering the expected spectral resolution can be developed.

Some details of the characteristics of CCD #38 are provided in Tables 1 and 2.

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TABLE 1: OVERALL CAT+CES LONG CAMERA EFFICIENCY IN PERCENT

λ(Ångström)	CCD #38	CCD #34
3500	0.8	0.15
3589	2.3	0.47
4035	5.4	1.4
4435	6.9	1.1
5400	9.2	3.8
6450	10.4	5.2
8092	5.88	3.7

TABLE 2: CES LONG CAMERA + CCD #38 MEASURED RESOLUTION VS NOMINAL RESOLUTION AT 4435 Å

Nominal	FWHM (Pixels)	Measured	Meas/Nominal
40,000	5.8	39,300	0.98
50,000	4.9	46,500	0.93
60,000	4.1	55,660	0.92
70,000	3.75	60,800	0.87
80,000	3.6	63,300	0.79
90,000	3.35	68,000	0.76
100,000	3.18	71,800	0.72
110,000	3.0	76,000	0.69
120,000	2.96	77,000	0.64

The FORS Focal Reducers for the VLT – a Status Report

G. RUPPRECHT, ESO-Garching

Introduction

The FORS1 and FORS2 *FO*cal *R*educer/low dispersion *S*pectrographs are expected to be something like the workhorses of the VLT since they will offer a variety of observing modes in the visual and near ultraviolet wavelength range, namely

1. direct imaging (2 image scales)
2. low-dispersion grism spectroscopy
3. multi-object spectroscopy (MOS; up to 19 objects)
4. polarimetry (FORS1 only).

These modes can be combined e.g. to allow imaging polarimetry or spectropo-