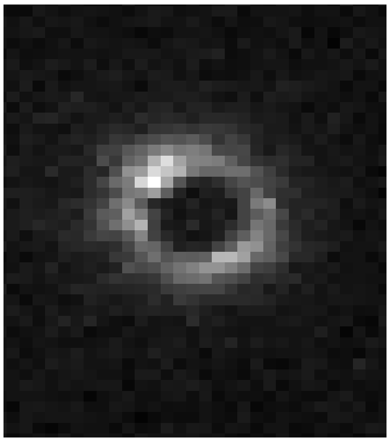

Figure 1: The black disk is the fiber and the light ring is the light from the star outside the fiber. Very precise centering is possible as can be seen, and the NOT guide system was shown to keep the image centered during an exposure. The pixel size is $\sim 0.16$ arcs.

| | |
|---|---|
| Project title: | **The FIber Echelle Spectrograph (FIES) at the NOT** |
| Names: | **S. Frandsen** |
| Telescope: | **NOT** |
| Periods: | **February 2000** |

A high resolution spectrograph ($R \sim 60.000$) has been mounted on the side of the telescope pier at the NOT. It is coupled to the telescope via a 100micron fiber. The light is directed to the fiber by a mirror in the adaptor, and ligth not accepted by the fiber is reflected back and imaged on the standby CCD camera. Centering of targets on the fiber is done using the reflected image. An example of a stellar image centered on the fiber as seen with the standby camera is shown in Fig. 1.

In Fig. 2 a spectrum of the F2V type star HD 128167 is shown. The spectrum is taken with a setup CCD chip, as the chip to be used, unfortunately was damaged during installation in the camera. One can see the many spectral orders. There are about 60 in this spectrum. The focus is not quite optimal, as not much time was available for the tests. We hope to replace the CCD with an astronomically useful chip during 2001. The spectrograph is then completed and ready for use by Nordic astronomers.

The instrument is designed for studies of radial velocities and Doppler imaging. It can be used to search for planets and for studies of surface structures of stars by detailed line profile observations. It can also serve very well for abundance determinations. With a second fiber of slightly larger size, it is an ideal backup instrument at the NOT, when the seeing is bad and the weather non photometric. The instrument can be ready for observations within minutes. It is just a question of mounting the fiber on the telescope, a very simple and fast operation.

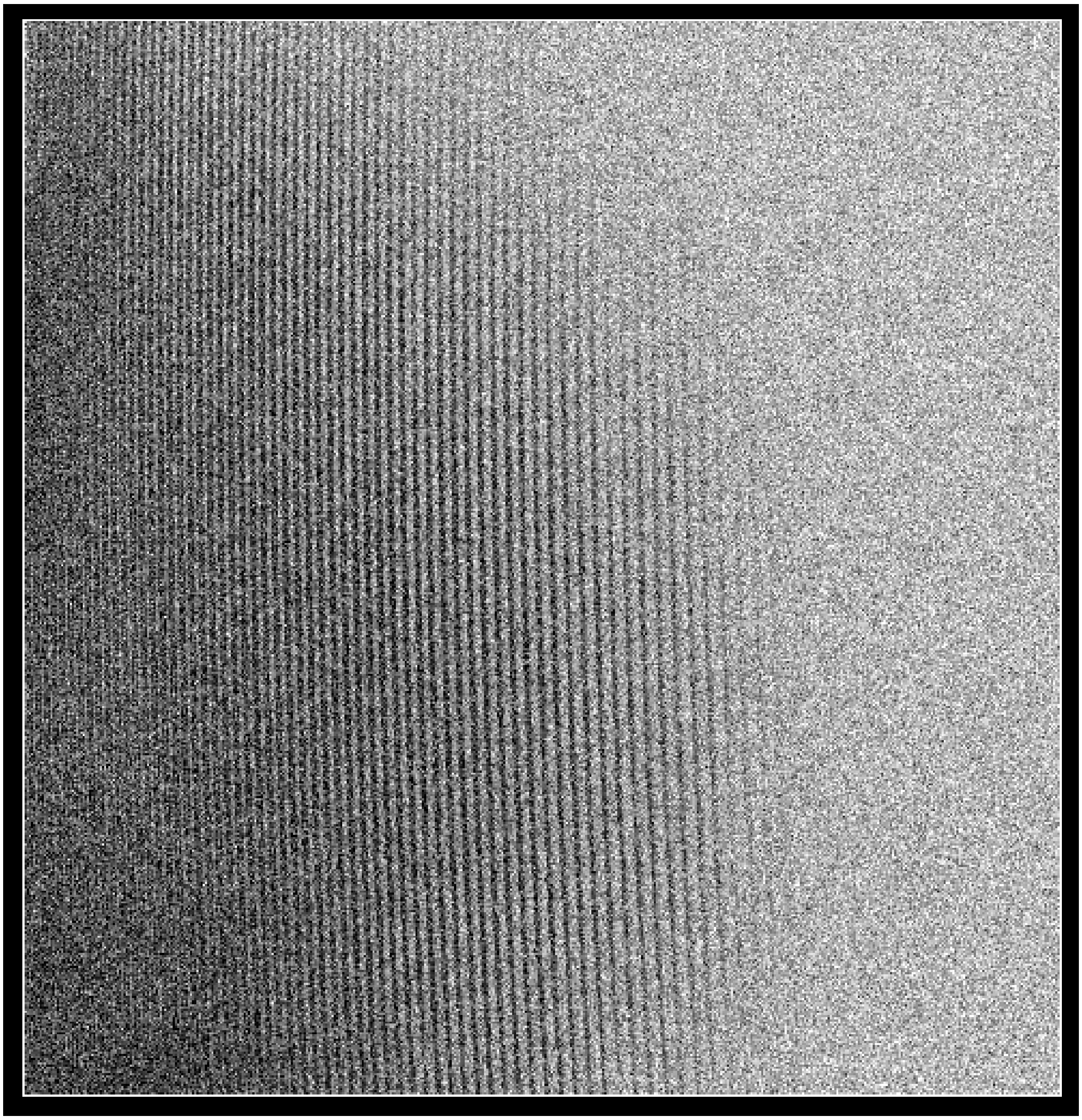

Figure 2: Total spectrum imaged onto a 2kx2k part of a 2kx4k CCD. Around 60 spectral orders are visible. The spectrum is for a V = 4.5 magnitude star. The spectrum was obtained in February 2001 during a commisioning visit to the NOT. The reproduction does not do the spectrum justice, as one can follow the orders all the way to the left image in the real image. Red orders are to the left, blue to the right.