On Figure 5, three holes have been defined on the right side, a number of slits are located across the top and a curve runs along the bottom. The actual mask area cut away for a hole is represented by the small circle, and the resultant "spectrum" is shown (vertical rectangles), while for slits, the rectangular area in the center will be cut from the mask. Although the curve is shown on screen as a sequence of points connected by line segments, the LAMA will generate the cut by fitting a spline to the points.

The speed of cutting the mask has been improved considerably by using a mask made of anodized aluminum foil (75 microns thick) instead of stainless steel (120 microns thick). This new material allowed us to increase the cutting speed from 200 microns per second to 1000 microns per second and reduce the number of passes from two to one. The quality of the cut was also ameliorated; the cuts are very clean with almost no rough edges.

We hope to integrate knowledge of the grism and CCD characteristics into the system so that all dimensions are specified by the user in "natural" coordinates rather than CCD pixels. For holes and slits, we have implemented visual display showing the extent of the spectra and the addition of this capability for curves is being investigated.

One of the great advantages to our new system is that mask selection can be done in Waimea at the user's leisure. The data files to be transferred to the LAMA are automatically generated and stored on disk. Then it is only a matter of informing the LAMA operator which masks should be cut for that night's run. We believe the current software is a great improvement over anything previously available, and we look forward to working with the LAMA users as we strive for more.

B. Grundseth, J. Wright, and T. Gregory

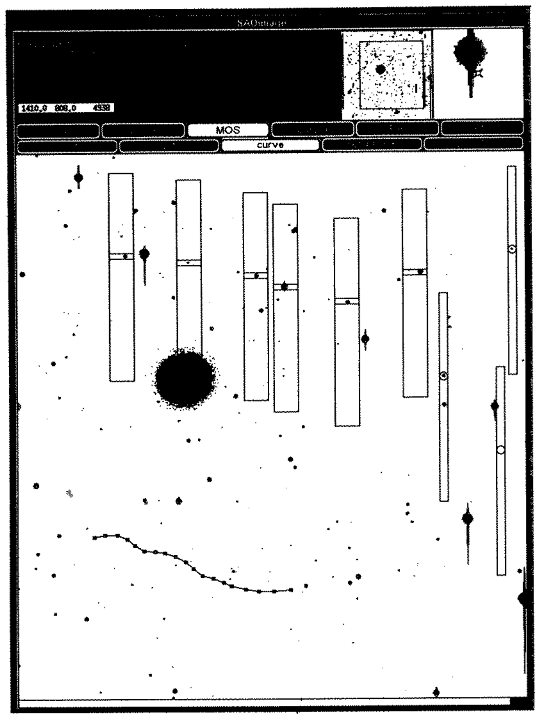

Fig. 5

***Editor's note:** Unfortunately, as of this writing, the LAMA machine is in a somewhat sorry state. Due to a power failure at the summit on November 22, the LAMA machine power supply reset to and remained in its start-up mode which is intended for only momentary operation. As a result, a fair part of the power supply unit burned up. Components have been ordered, and Micro-Control Corporation has been requested to provide more detailed plans of the internal circuitry, and a solution to what is apparently a design oversight. We nevertheless think that LAMA will be available for the next MARLIN observing run in January 1991.*

New UV Grating & Optics for the Herzberg Spectrograph

A new grating is now available for use on the Herzberg spectrograph. This replicate grating has the following characteristics:

- 1200 lines/mm
- Blazed at 3000 Å
- Dispersion = 41 Å/mm
- Red limit = 6021 Å

The reflective coating is made up of aluminum and an overcoat of MgF_2 to retain the high reflective quality of fresh aluminum in the UV. This grating is now the new #2 replacing the 1200 l/mm grating blazed at 7500 Å. This latter grating is being decommissioned but can still be used on special request.

The new grating is intended for use with a new UV module and special UV optics (formerly the white optics), which have received a reflective UV enhanced coating.

During the nights of December 7 and 8, 1990, observations were made to measure the system efficiency shortward of 4500 Å. Preliminary results indicate that the gain in overall throughput due to the recoated optics and new UV module, compared with that previously available using the blue optics set, is substantial.

A more detailed discussion of UV efficiency will appear in the next Information Bulletin.

Stéphane Béland and Timothy Davidge

Coudé Autoguider

A simple autoguiding arrangement has recently been completed for the coudé focus. A beamsplitter is employed 150 mm in front of the coudé focus to deliver about 6% of the incoming starlight to an additional television camera. A good image is produced on the photocathode of the camera as the light from the star is intercepted by the beamsplitter before it passed through the cylindrical optics at the front of the Richardson image slicers normally used at the coudé focus.

The TV image is integrated in the Leaky Memory, in the 4th floor control room, and then read by the TCS computer. An image rotation algorithm, converts the leaky memory XY error signal into an error on the sky. After this operation, that point, the autoguider processing is the same as for foci with no image rotation problems. Tests were performed which demonstrated good autoguiding in all areas of the sky.

Unfortunately, the sky was quite far from photometric, and it was not possible to perform comparative throughput tests with the autoguider and hand guiding. However, it is felt that the autoguider will improve guider throughput enough to compensate for the loss incurred by the beamsplitter. Also, the relief from the tedium of hand guiding will permit coudé observers the luxury of performing other tasks during long exposures. The setup of the autoguider is relatively easy, and will be explained by the support astronomers at the beginning of each run.

Tom Gregory and William Cruise