

will be mounted on the existing chopper mechanics and used in the clamped mode most of the time. This will eliminate the major defects of the current secondary and will provide an 8% increase in collecting area.

The Working Group concluded its report by suggesting specifications for a CFHT facility IR Camera:

Wavelength Range	1-5 $\mu\text{m}$
Format	256 <sup>2</sup>
Pixel sizes	0".1 up to 0".5
Basic Features	Broadband Imaging J,H,K,L,M Narrowband Imaging (~ 1% bandwidth)
Additional Features	Polarimetry Fabry-Pérot Coronagraphy

With regard to wavelength coverage, it was felt that a facility instrument should cover the entire 1-5  $\mu\text{m}$  range. This might require two cameras. It seems that we should aim for 256<sup>2</sup> format and fall back to 128<sup>2</sup> only if absolutely necessary. The array(s) should not be classified or subject to export restrictions.

The issue of pixel size is somewhat complex. Considerations of seeing and diffraction indicate that CFHT should achieve its highest spatial resolution around 3 $\mu\text{m}$  wavelength. Here one can expect FWHM ~0".25 under good conditions. Proper sampling implies pixels of ~0".1. Many observing programs would prefer a larger field that the 25 arcseconds afforded by a 256<sup>2</sup> array of 0".1 pixels. In going to larger pixels, one must keep in mind that unlike optical CCD's, IR arrays are comprised of discrete diodes with dead space in between. Undersampling in this situation is especially undesirable particularly when photometric accuracy is required. It is felt that 0".5 is an upper limit on pixel size.

The technical capability to develop such a camera exists in all three CFHT communities. The cost would be between \$500K and \$1M depending on the specifications. Development time would be approximately three years.

I would like to take this opportunity to thank the other members of the Working Group — Donald Hall, Daniel Nadeau, and Daniel Rouan — for their invaluable advice and assistance in producing this report.

*Bob McLaren*

## F/8 Cassegrain Focus Not Available in Mid-1990

Those readers familiar with CFHT's f/8 Cassegrain secondary mirror will know that its axial support (support parallel to the optic axis) is provided by vacuum. Specifically, there is a seal between the edge of the mirror and the wall of the cell, and behind this seal a negative pressure is maintained sufficient to balance the axial component of gravity. The radial (sideways) support is provided by a mercury-filled tube which encircles the mirror and transmits the radial forces to the inner wall of the cell. In the original design, the mercury tube also served as the vacuum seal. This never worked — it leaked air past the seal. Very early on a rubber gasket was added below the mercury bag (i.e. closer to the reflecting surface) to serve as a more reliable vacuum seal. This was

a distinct improvement but still far from perfect. The vacuum now extended below where it was originally intended to be and into areas where there were various screw holes which now had to be sealed. Furthermore, the addition of the new seal itself necessitated even more holes. As a result, vacuum leaks and failures of the support were frequent, as early users of the f/8 will no doubt recall.

During the past few years we have learned how to seal up the various potential leaks, but this involves several days of extra work by a number of people each time the mirror is removed from the cell (e.g. for realuminizing). The time required to do this is excessive and not predictable, and the result is not sufficiently reliable. In short, the situation is unacceptable. The mirror is due for realuminizing next summer, and this time we must fix the seal before the f/8 is restored to service.

The good news is that we are confident that we can fix the problem reliably and permanently. The bad news is that the f/8 must be taken out of service for about 14 weeks to accomplish the task. The principal reason for the duration of the down time is that the entire cell must be machined, and the nearest place with the necessary equipment is Los Angeles.

Consequently the f/8 will be taken out of service either at the beginning of April or the beginning of May next year, and returned to service about 14 weeks later. In other words, it will be out of service for four bright runs and three dark runs. Traditionally the pressure for dark time in April is greater than that for dark time in July. We will therefore try for the later schedule, but this may not be feasible because of a conflict with the realuminizing of the primary mirror intended for August (too much work in too short a period for the same group of people).

Observers preparing proposals for first semester 1990 should therefore be aware that the f/8 focus will not be available for the May and June dark runs. It may also not be available for the April dark run. By the fall of next year, we will have a realuminized f/8 which is not only more reliable but also much easier to maintain

*Bob McLaren*

## Observing Time Requests — A Word to the Wise

Applicants for observing time are reminded that it is very important to use the **current version** of the Observing Time Request Form, in particular the insert pages 5/6, which change each semester. The current form can be obtained by contacting any of the three agencies at the addresses given on page 8. The Corporation makes a bulk shipment of the forms to the agencies about three months before each submission deadline.

It is equally important that you carefully complete the entire form. If you fail to do so, you run the risk of omitting information which is important to appreciating and evaluating your proposal. Moreover you create the impression that you are not as careful in your work as others with whom you are competing for telescope time. Just a word to the wise....

*Bob McLaren*