sur les prises d'alimentation. Une autre source possible de stress sur la boucle d'asservissement provient de sous-harmoniques de la porteuse à 100 KHz qui s'insèrent dans le signal d'erreur. Des composantes à 2480 et 4960 Hz ont été identifiées. Un moyen de les supprimer serait d'installer un filtre passe-haut coupant à 25 KHz.

Le travail d'élimination des anomalies de balayage continue. Des tests ont montré qu'en plus des doubles échantillons, le chariot pourrait changer de direction au milieu d'un balayage. Enfin, le phénomène de "saut de franges" semble apparaître en conjonction avec le chargement d'une mauvaise valeur du paramètre P. Heureusement, ces problèmes sont statistiquement peu fréquents, ce qui explique le temps nécessaire pour trouver leur causes. Cependant, la récente coordination de puissants outils de diagnostic, tant hardware que software, a permis de beaucoup avancer dans la connaissance du comportement du FTS.

Deux nouvelles séries de tests sont prévues aprés la séance d'observation de Juillet prochain. Elles devraient apporter encore plus d'informations, et certainement d'autres modifications visant à améliorer la fiabilité du FTS.

J. Horne et P. Papasian

New Instrumentation Cables in Control Room

After remodelling last year, we immediately moved all CCD observing to the new, combined control room. However, some of our facility equipment makes use of the instrumentation cabling system, and still had to be used in the old observing room. To accommodate these instruments, we have installed several instrumentation cable extensions between the observing room and the main control room. Now that the system is complete, we want to make it available for selected visitor instrument use.

Basically, we have one extension for each type of the larger cables. The extensions are connected to the observing room panels, and thus to any instrumentation location. In the main control room, the extension panel is at the rear of the console on the observer's side of the room. The available twisted pair cables are:

20	overall shielded pairs	extends J2, J3, or J6
9	overall shielded pairs	extends J4, J5, or J7
7	individually shielded pairs	extends J8, or J9
3	individually shielded pairs	extends J10, or J11

These extensions have the same type of connectors as the original instrumentation cables they extend. As there is only one of each type of cable, instruments using multiple cables are still restricted to the back room. The available coaxial cables are:

4 – 50 Ω cables   3 – 75 Ω cables

While we now have the electrical capability to operate more instruments in the main control room, there are still physical restrictions. These are:

- equipment must be small in size, and fit entirely on or under the desk surface.
- visitor equipment must not displace permanent equipment.
- no additional tables may be placed in the control room.
- no equipment cases or electronic racks may be placed on the control room floor.

This restricts visitor instrument use of the control room to those with small control consoles or terminals which can use the cable extensions and fit on the existing table. Equipment needing rack mounting *may* be placed in the control console, but space is limited. Any cable construction will be the responsibility of the observing team. At this point, visitors with instruments needing to be used from the control room must request this use on their visitor instrument questionnaire. The request should list all equipment and cables to be used in the control room. Each request will be evaluated by CFHT, and the observer notified of the feasibility.

W. Cruise and R. Song

New F/8 Mirror Cell

A new mirror cell has been fabricated by L&F Machinery in Los Angles for our F/8 cassegrain mirror. L&F fabricated the original cell under a contract from Perkin and Elmer. The new cell is very similar to the previous one, except the method of sealing the mirror into the cell has been changed. The mirror is held into the cell, face down, with slight vacuum pressure. Although only a small vacuum pressure is used, this pressure must be precisely regulated as the telescope moves to various locations in the sky. Any small leaks in the vacuum seal causes disturbances in the pressure regulation, allowing the mirror to move off its axial defining pads or be pressed against them to hard. This would, of course, affect the image quality.

The sealing method used in the design of the original cell did not work, and that cell was modified to incorporate a revised system that could be made to work. Unfortunately this revised sealing system involved numerous threaded and clearance holes into the vacuum cavity of the cell. All these holes required sealing. Although an adequate seal could be achieved, in practice it was very difficult and frustrating to find and plug all the leaks. The F8 mirror needs to be removed from its cell and realuminized approximately every 18 months. The reinstallation process tended to be long and tedious. Because work needed to be done very close to the newly aluminized surface, it had to be sprayed with a plastic coating that was later removed.

The new cell has a sealing system that does not involve any threaded holes into the vacuum cavity and a minimum of clearance holes. All the clearance holes will be sealed with 0 rings. The new sealing method worked well when it was tested at L&F Machinery using the new cell with the steel dummy mirror. A mirror cover has been designed and fabricated which will allow work to occur on the new cell near the optical surface with out danger to the aluminized coating.

Currently both cells are in the Waimea Machine Shop where parts are being transferred to the new cell Initial tests of the cell will be done in Waimea and then it cell will be shipped to the summit for additional testing. The new mirror cell is scheduled to be in service on August 28, 1990. The cell is planned to be installed on the telescope for the first time on July 11, 1990 during the engineering shutdown.

D. Cowley