- additional labs for optical and electronic instrumentation, and for computer–aided design;
- a technical reference room, to regroup now widely dispersed documentation;
- offices for the two additional resident astronomers, for longer–term visiting scientists and for guest observers;
- a conference room suitable for staff meetings and lectures;
- a lounge.

At the same time the adjacent industrial building was enlarged by one–third, in order to accommodate a general maintenance shop and to provide much-needed storage space.

An important design objective was to preserve the unity of the entire facility. This was achieved by retaining, to the fullest extent possible, the standards and materials selected for the first phase. Indeed, after just a few months of use, it would be difficult for the uninformed eye to distinguish the new from the old. As for the lengthened walking distances, they have done nothing to dilute the staff interactions that the original layout so efficiently fostered.

C. Berthoud

Transmission par Micro-Ondes Entre L'Observatoire et Waimea

En décembre 1986 le conseil d'administration du TCFH approuvait l'implantation immédiate d'une liaison temporaire par micro-onde entre le sommet du Mauna Kea et Waimea. Une telle liaison était jugée essentielle pour le soutien aux observateurs pendant leurs missions et pour les travaux techniques de l'équipe CFH. Au cours du premier trimestre tous les détails pratiques ont été réglés visant à une installation et une mise en service pour le mois de juillet.

Contrairement à l'entente établie en janvier 87, l'Institut d'Astronomie de l'Université d'Hawaii signifiait son opposition au projet en avril 87, interdisant l'installation de l'émetteur-récepteur sur le batiment TCFH et recommendant de chercher d'autres modes de transmission entre le sommet et Waimea. Le projet est donc retardé de plusieurs mois. D'autres solutions sont donc à l'étude, plus onéreuses, mais faisables en collaboration avec l'observatoire Keck.

G. Lelièvre

Modifications to the Telescope Hydraulic System

Investigations using an Infrared camera and direct thermal measurements have shown that the telescope hydraulic system is one of the major heat sources in the dome. The telescope hydraulic fluid supports the telescope on its hydrostatic bearings. The fluid dissipates over 10 kw of heat to the air within the dome. This hot air can rise through the light column, thus decreasing the image quality.

A project to chill the fluid and maintain it at near 0 C is now nearing completion. The normal night-time temperature of the fluid is recorded by a thermal data logger now in full-time operation in the Observatory. The temperature of the fluid rises during the night to approximately 43 C, heating the horseshoe structure in the process.

The project involves changing the present hydraulic fluid to one which has approximately the same viscosity at 0 C as the present one has at 30 C. This new hydraulic fluid is a synthetic and is currently used by the military.

The hydraulic fluid will be cooled by using the glycol chiller system which cools the observation level floor. Cooling the floor requires approximately half the chiller system's capacity in the summer during the day. Chilling the hydraulic fluid will also require about half the system's capacity, except that this load will normally occur during the night when the floor is not loading the system to as great a degree.

The operating temperature range of the new fluid would be between 0 and 40 C as compared to the present fluid, which operates between 25 and 70 C. However, rather than allowing the new fluid to gradually rise in temperature during the night, it will be held at a constant temperature.

The physical modifications to the hydraulic system, including installation of the chiller, were completed earlier this year by a contractor. The existing fluid, which is still being used to support the telescope during its regular operations, is in a temporary reservoir, and the existing reservoir is being cleaned in preparation for installation of the new fluid. The hydraulic pump seals and system filters have all been changed and some worn parts have been replaced in preparation for testing the new fluid in the hydraulic system.

Three nights were scheduled in May for the first tests of the fluid supporting the telescope. The hydraulic system modifications are expected to be fully implemented by mid-June. From that time on, the telescope will be supported by fluid which is very nearly at the outside air temperature, taking us one step closer to the best imaging possible on Mauna Kea.

D. Cowley