

DIRECTORS' CORNER

Strategies for CFHT: 1993 to 2000

We see the following priorities for the next five years:

1. To operate the telescope efficiently and reliably and to give full operational support to the observers with the present CFHT instrumentation.
2. To maintain detectors performance at the highest possible level and to insure a reliable operation of several identical cameras and controllers.
3. To implement TCSIV and continuously improve the software environment.
4. To commission the already planned instruments:
 - Adaptive optics bonnette and an integral field spectrograph
 - Large field, mosaic camera: MOCAM
 - Infrared SIS optics, OSIS
5. To improve the access to and use of existing instruments with the support of canadian and french teams
 - Fibers feeding Coudé spectrograph from f/8 cassegrain focus, and, possibly, from primary focus
 - REDEYE adaptor on MOS/SIS central hole.
6. To prepare a repair and renovation plan for those parts of the Telescope infrastructure which could create critical breakdowns: hydraulics, cables, mechanical structures, dome...
7. To investigate a possible long term plan with CNRC, CNRS, UH, SAC, Board, and by international contacts; a coordinated specialization of 4m telescopes focal instrumentation, coupled to an international exchange of observation time.

All these actions are consistent with the efforts previously developed to maintain CFHT at the leading edge of the competition. We will just comment on some detailed aspects of points 1 and 7 which are related to the two extreme short term and long term strategies.

Efficient and Reliable Operation of the Telescope and Instruments

CFHT suffers from a never-ending conflict between ongoing operations and new developments, which reaches even more critical levels when there is a significant turn-over in the staff such as is currently taking place. With the completion of the two successive major instrumentation plans, and the normal preventative maintenance of the dome, telescope and CFHT instrumentations, we are faced with over 100 projects, of which 30 are rated top priority. The total greatly exceeds our financial and manpower resources, so we are reviewing the project priorities with engineers before the end of the present year.

We are trying to evaluate quantitatively what is the impact of too-frequent setups and of trouble shooting. It's almost always during the setup or during the first night of a run that problems are reported which cause the loss of telescope time and disturb

the planning of work at the Waimea headquarters. The best way to keep control of such a situation is to reduce the number of setups and to increase the length of time that a particular instrument is installed.

In parallel with the effort to reduce the number of upper end changes, we are also trying to schedule longer runs of each instrument configuration. To do this without compromising scientific objectives of observers, we expect to take advantage of the success of MOS/SIS by adding, configurations to cover bright nights: fibers to Coudé and REDEYE on the central hole. As soon as it is feasible we expect to have CCD cameras with their associated controllers mounted on MOS and SIS simultaneously to make the scheduling of these instruments more flexible.

More generally, we are progressively developing a reliability plan to reduce emergency repair activities that interfere with work on new developments. The first step will be the improvements to the reliability of the detector systems, but these efforts are slowed by the two staff departures out of a project group of only four people. We intend to acquire more cryostats with the help of UH and to implement the thinned 2k*2k CCDs due to arrive in early 1994.

We are also evaluating solutions to ensure the operation of the LAMA machine, which is a potential single failure point for MOS programs.

In order to prepare for commissioning of the "guest instruments" (MOCAM, OASIS, OSIS), we will have to define acceptance phase in agreement with the teams building them. The transfer of documentation, the procedure of acceptance tests and a complete review of the instruments with CFHT engineers are essential to ensure an efficient operation of these instruments. This process will also be somewhat slowed because of the present lack of manpower. If CFHT can not accept an instruments, it will be considered as a visitor instrument.

Furthermore we must also make it clear that it is not possible to support new instruments without decommissioning those which are requested infrequently.

In the context of the present staff turn over, the manpower at CFHT is really oversubscribed and we must delay new projects until we are able to restore a "normal" operational status. We must clearly insist to the observers that there is no place for requests out of specifications of the present CFHT instruments. We know that some observers are often convinced that a special setup will improve their data acquisition but, unless a clear technical evaluation demonstrates well in advance of the run the advantage of a special configuration, we will refuse to customize the instruments and the schedule.

Long Term Plan

The new generation of large telescopes (Keck1, Keck2, VLT, Gemini, Subaru JNLT...) will dominate the studies of faint objects and high spectral resolution Infrared spectroscopy.

The HST with a new camera, and, in the longer term, large ground-based telescopes with adaptive optics and interferometry (VLT, Keck) could lead high spatial resolution.

However CFHT holds some winning cards to stay on the forefront:

- the best place on the best site
- image quality continuously improved
- improved instrumentation MOS/SIS, REDEYE, coud F/4, new f/8 and new f/35 upper ends; on going refurbishments: primary autocollimation and cassegrain bonnette; or instruments programmed to come soon: AOB, OASIS, MOCAM, OSIS.

We have a well trained staff and excellent working relationships with institutions in Canada, France, and Hawaii.

The pressure for allocation of time continues at a high level and comes from astronomers spread throughout the international CFH community. Collaboration extending outside the "home institutions" insures cross fertilization of data acquired at CFHT and at other space or ground-based observatories.

A prerequisite to defining a long-term plan is to decide whether CFHT will remain a multipurpose instrument or whether it will be specialized. We will try to develop different scenarii in the near future, and the next user's meeting will have to discuss these options.

However, there are some boundary conditions which have to be kept in mind before entering these discussions:

- the manpower needed to maintain and operate the CFHT at a high technical level imposes a continuing cost for basic salaries which is not very flexible on the long term.
- the development of an instrumentation plan to optimize the long term operations has to be funded in a context constrained by the priorities given to GEMINI and VLT capital investments and operating costs.

Without international agreements to share telescope time between specialized 4m class telescopes there is no evident path towards a specialized CFHT. A specialization of the telescope has to be associated with an expansion of the community having access to CFHT. In fact it is possible to imagine a CFHT carrying out a continuous survey program or a succession of key programs with a single instrumental configuration, but it is more difficult to foresee CNRS and NRC funding at a high level a small community. It would be necessary to involve additional funding agencies before entering the era of specialized 4m telescopes. Such negotiations clearly goes beyond the role of the current directors of CFHT.

Being aware of the slow pace of international negotiations, it would perhaps be better to prepare a multipurpose instrumentation plan concentrating on qualities that would insure competitiveness in the face of competition with large telescopes. Once CFHT gains some experience with adaptive optics, we will have rapidly to discuss the priorities of the configurations which could be used on the long term at CFHT. The multiple foci and multiple bonnettes at the cassegrain forms will probably disappear. To reduce the operating costs we will need a set of complementary instruments mounted together for long block scheduling covering both dark and bright nights. To prepare a set of such competitive instruments that could be used into the next century, will be the task of the rest of the 1990's.

P. Couturier, J. Glaspey

July 1994 Jupiter-Comet Schoemaker-Levy Encounter

A Special Procedure for Allocation of Time Related to the Crash of Comet 1993e on Jupiter in July 1994 has been established. The event is still open to submission of proposals. The reason for this exceptional procedure is that additional information is needed about the sizes of bodies and the exact dates of collisions. This will be better known after observation of the comet in 1994, and computer simulations of the collision. In agreement with SAC and TAC, we are adopting the following procedure:

The time between Sunday afternoon, 17 July, and Thursday morning, 28 July 1994, will be reserved for observations at the F/35 focus of the events related to the crash of the comet Shoemaker-Levy 9 onto Jupiter.

The detailed schedule of the observations will be decided at the TAC meeting during the first week of May 1994.

We are calling for requests for allocation of time related to the comet/Jupiter event that use the f/35 focus with a special **deadline 1 April 1994**. These special requests will be collected by the agencies in the same way as normal requests, except for the unusual deadline date.

CFHT would prefer not to change the instrumental configuration during the event, since there is always the danger of losing time on the sky because of technical problems during a change of instruments. We intend, at the very least, to minimize the number of changes. Before presenting a request, we encourage PIs to exchange information with other potential candidates in order to optimize the use of the telescope during this period.

P. Couturier

The "Four-Nights" Scheduling Policy

As of the 94II observing semester (Aug '93 – Jan '95), the CFHT corporation will impose a minimum duration of four nights for an instrument configuration. Should a shorter run be recommended by the national TACs, the CFHT will schedule extra nights to make up a minimum four nights run. These extra nights will be taken from the scientific time of the community (or communities) involved, but, once the instrument performance is verified at the beginning of the first night, the remaining time will be made available to the subsequent observers. The reason for requiring a minimum number of nights is to establish a sufficient time between instrument setups so as to give the CFHT staff time to adequately prepare and check out each instrument for its next use.

P. Couturier

Herzberg Decommissioning

As a result of the low demand of the Herzberg spectrograph, in agreement with SAC, we intend to decommission this instrument after 94II semester. Should a significant time allocation for the Herzberg spectrograph arise in 94II, we may reassess the date.

P. Couturier