



Annual Report 2007

Canada-France-Hawaii Telescope Corporation

The Canada-France-Hawaii Telescope Corporation

operates the CFHT 3.6 m telescope near the summit of the 4200 m dormant volcano Mauna Kea on the Big Island of Hawaii, USA. Support is provided by the National Research Council Canada, the Centre National de la Recherche Scientifique of France, and the University of Hawaii according to the agreement signed June 1974. CFHT is dedicated to the exploration of the Universe through observation.



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CFHT is the invited artist at the Kahilu Theater Gallery from February 14 to March 15, 2007



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Introduction

2005-2012: CFHT's Golden Age – Year 3, a year of transition!



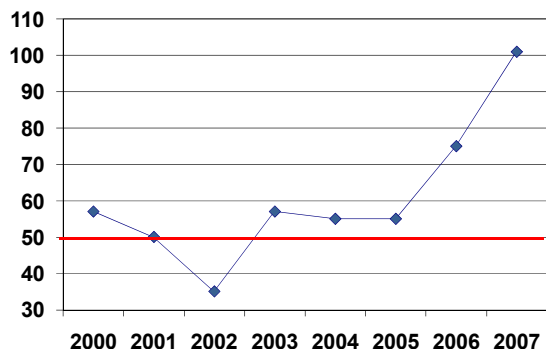
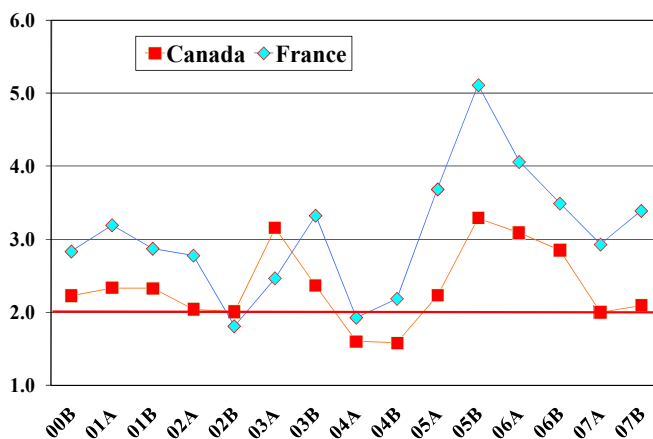
Executive Director Christian Veillet

CFHT's "Golden Age Plan" has been devised in the course of 2004 and is intended to allow the CFHT Corporation to work at its best for the last six years of the decade and be ready for the era beyond 2010. Goals were defined for the Observatory for up to the end of 2010, and metrics were developed to measure the quality of CFHT's work and assess its success. Per these metrics, as seen below, 2007 has been undoubtedly a very successful year.

CFHT's triennial Users' Meeting was held in Marseille in May 2007. Well prepared by the Agencies, the communities, and the observatory, this meeting raised a large interest and triggered much contribution from the three communities CFHT is serving. It was therefore possible to lay the foundation for an extension of the current Golden Age Plan up to the end of 2012 and to prepare the operation of the observatory beyond the middle of the next decade (see later in this report).

Operation-wise, the year has been hard on the technical staff as it had to face two major failures of MegaCam. Thanks to the Queued Service Observing mode, the science time lost on the sky has been minimized by swapping MegaCam and WIRCam. As a result of these failures, MegaCam ended up a more reliable instrument and a maintenance plan is now in place to insure its health for many years. 2007 was therefore a good year metrics-wise.

The **oversubscription on the observing time** offered to CFHT's main communities, often called "pressure", is a good indicator of the relevance of the Observatory and of its instrumentation. The goal of the Golden Age Plan is to have this pressure stay above 2, a value considered as a healthy place to be by most observatories around the world. For the two semesters of 2007, Canadian and French averaged pressures were respectively above 2 and above 3, as seen on the graph on the right.



The **number of refereed publications** based significantly on CFHT observations is a good indicator of the relevance of the data gathered by the telescope. The graph on the left shows this number fluctuating over the past years. With the CFHT Legacy Survey now generating more and more publications, though not completed yet, the contribution to the COSMOS project optical imaging, more PI programs on MegaCam now producing science, and new exciting programs being undertaken on ESPaDOnS, the number of publications rose in 2007 over an unprecedented 100, well above the 50 mark set as a goal in the Golden Age Plan.

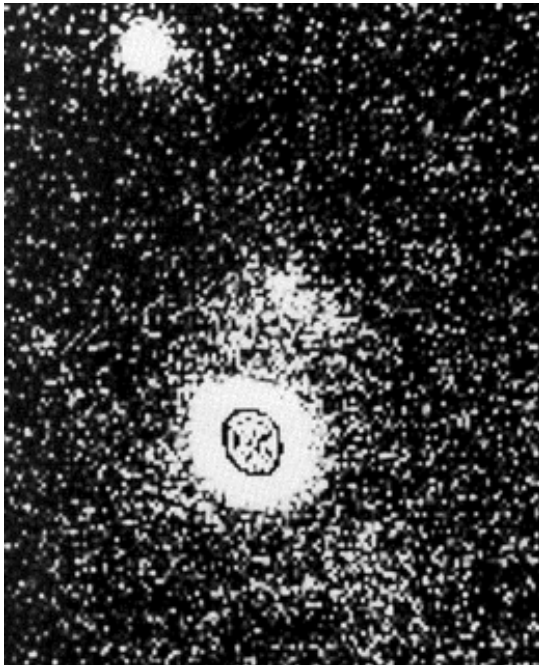
At the end of 2006, CFHT had reached what will be its instrument configuration for the coming years, and 2007 was indeed the first of what will be many productive years data-wise in a three-instrument mode: MegaCam, WIRCam and ESPaDOnS sharing most of the observing time, with the remaining nights used for Adaptive Optics and engineering/instrumentation projects. The source of most of the WIRCam noise and cross-talks problems was found and the reduction pipeline reached maturity. QSO mode for ESPaDOnS was at the end of the year nearly ready to go and should be, as planned, the observing mode of the instrument starting in 2008A. The Observatory Automation Project (OAP) was given more emphasis over the year, to become one of the major in-house developments by the end of 2007. Its first phase is to allow, starting in 2010, observations in remote mode from Waimea without anybody at the summit at night.

Twenty-five years ago

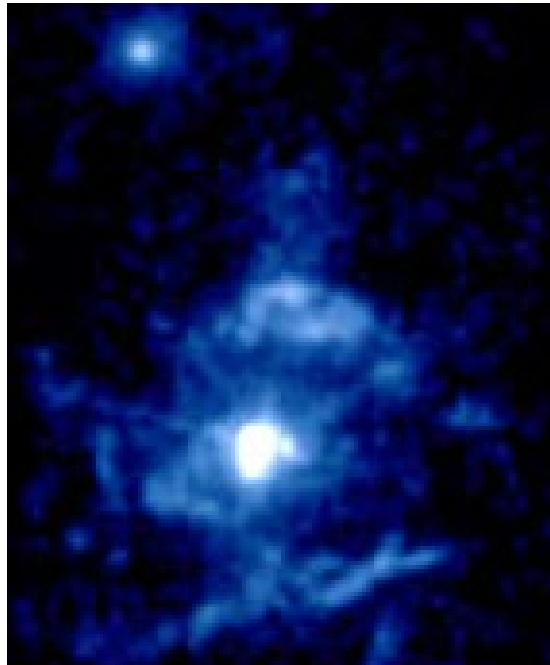
First run at the Cassegrain focus: a CCD image of 4C 37.43

The engineering of the F/8 Cassegrain focus was followed by A. Stockton's exciting observing run with the Galileo/IfA CCD mounted at the "nominal" focus. The first science done at the F/8 was accomplished with a CCD camera fabricated at the Institute of Astronomy, which contains a Texas Instruments 500 x 500, 3 phase, buried channel CCD developed by JPL for the Galileo project team.

The observers A. Stockton and J. McKenty obtained CCD frames through a system of intermediate band filters, designed by Stockton to investigate the morphology of the "fuzz" in the vicinity of QSO's. The image below on the left comes from a first order processing procedure for "quick look" purposes during the observations. The observers reported that sky noise limited exposures could be obtained in 30 minutes. They also made routine "seeing movies". There are frames containing multiple 1 second exposures of a bright star taken in rapid succession. At one point in their run, the observers reported images as small as 0.5 arc seconds fwhm.



Red CCD image of quasar 4C 37.43 obtained at the f/8 Cassegrain focus by A. Stockton. This frame shows nebulosity near the QSO, as well as a compact galaxy 11 arc-seconds away with the same redshift (0.37)



An image from Hubble showing 4C37.43 in visible light...

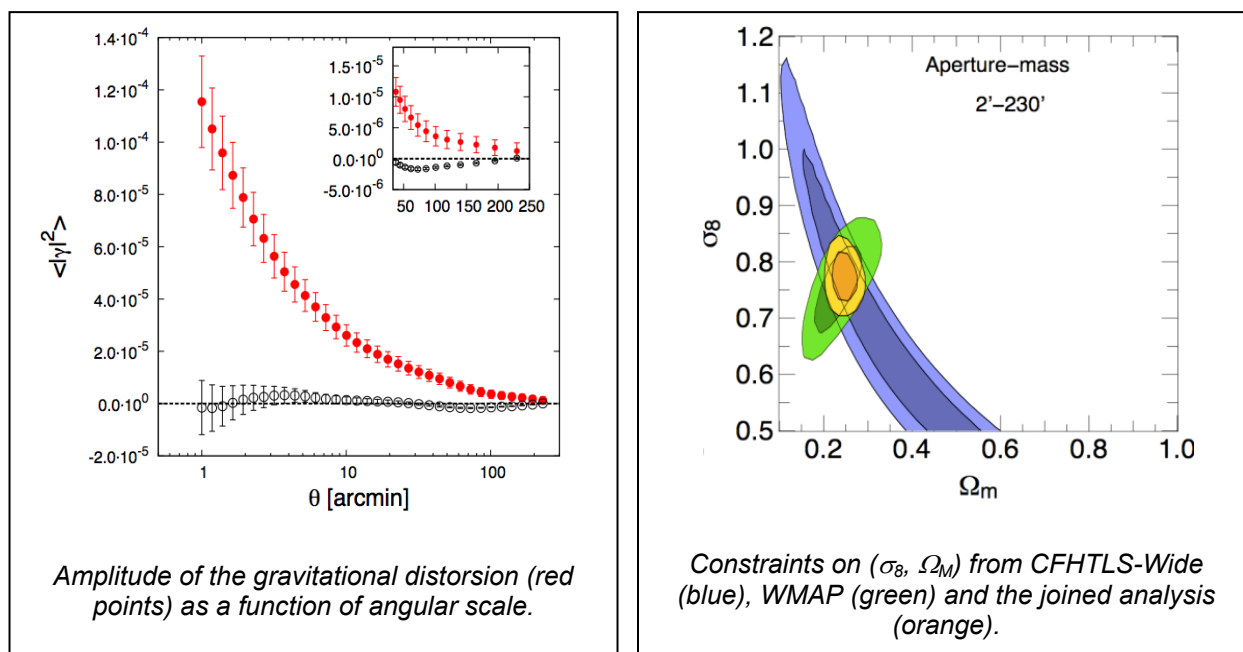
Science Highlights of 2007

Cosmic Shear in linear regime with the CFHTLS wide

As shown by the first analysis of the CFHTLS data by Sembolini et al. (2006) and Hoekstra et al. (2006), the excellent image quality of MegaCam makes the CFHTLS survey perfectly adapted to measure the gravitational weak lensing signal.

From these analysis, a first set of constraints have been obtained on the dark matter parameters (σ_8 , Ω_M), where σ_8 is the dark matter density fluctuation (“clumpiness”) and Ω_M is the dark matter density. However, the small angular scales explored make the interpretation sensitive to the non linear evolution of the dark matter power spectrum and the poor knowledge of the redshift distribution of the sources at the time prevents to obtain the best constraints.

A major step has been reached by the new CFHTLS analysis presented by Fu et al. (A&A 479, 9), which overcomes most of the previous limitations. They make use of 57 deg² spread over three independent fields based on the third CFHTLS release (T0003). With the large contiguous area, they have been able to observe the cosmic shear signal over an unprecedented large range of angular scales spanning from 1arcmin to 4 degrees (left Figure, red points). This analysis reveals the existence of a very weak signal up to the largest scales as expected in the current cold dark matter paradigm. This measurement has been made possible thanks to the high quality and homogeneity of the CFHTLS data which allow keeping the systematic errors well below the subtle gravitational weak lensing signal (figure on the left below).

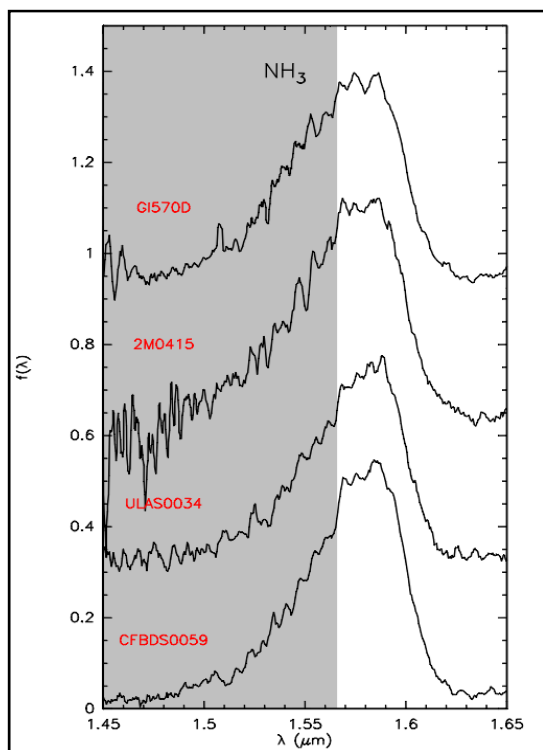


The new constraints on (σ_8 , Ω_M) are shown in the figure on the right above. They take advantage of the good knowledge of the redshift distribution of the sources, thanks to the photometric redshifts of the CFHTLS deep fields calibrated with the VVDS spectroscopic sample (Ilbert et al., 2006). By combining with the WMAP results (Wilkinson microwave Anisotropy Probe), it provides the tightest constraints ever on the two parameters with $\sigma_8 = 0.771 \pm 0.029$ and $\Omega_M = 0.248 \pm 0.019$.

Stronger cosmological constraints will come with the completion of the CFHTLS Wide that will cover a total area of 170 deg².

From sub-stellar objects to the most distant quasars

The detection of very red objects (based on $(i'-z')$ color) over a wide sky coverage is a basic requirement to hunt for rare brown dwarfs (L, T) and high redshift quasars ($z > 6$). To reach their goals, despite the premature end of the CFHTLS very wide, the “CFBDS” (Canada France Brown Dwarfs Survey) and the “CFHQS” (Canada France High-z Quasar Survey) have combined the CFHTLS fields (VW+W+D) with the RCS2 survey (Red Sequence Cluster survey 2) and PI data in order to cover a total area of $\sim 1000 \text{ deg}^2$. After an IR follow-up of the candidates and a spectroscopic campaign with Gemini telescopes, the CFBDS and CFHQS have delivered their first discoveries.



Evidence for a new class of brown dwarfs: The missing link between star and giant planets?

Delorme et al. (A&A 482, 961) reported the discovery of the coldest brown dwarf ever observed at the time. This brown dwarf called CFBDS0059 has a temperature $T_{\text{eff}} \sim 620\text{K}$, which is $\sim 50\text{K}$ cooler than the coldest known BD, ULAS0034, and a mass $\sim 15\text{-}30$ time larger than the mass of Jupiter.

Comparison of the NIR H-band spectra with the three other coolest brown dwarfs is shown in the left Figure. In contrast to the top two T type BDs, which have $T_{\text{eff}} \sim 800\text{K}$, the bottom two BD spectra, which have $T_{\text{eff}} \leq 650\text{K}$, show a more pronounced dip in the blue side of the spectra (grey band). The authors interpret this difference as a signature of the presence of wide ammonia (NH_3) absorption band superimposed to the well known H_2O absorption feature. This is the first evidence ever of ammonia features in the NIR spectra of BD atmosphere. The very low temperatures and the presence of ammonia in the NIR band suggest that those ultra cool BDs may belong to the long expected Y spectral type.

The close similarity of their atmospheres with those of giant planets opens a new window to constrain the model of extrasolar planet's atmosphere.

Four new QSOs in the select club of “ $z > 6$ ”:

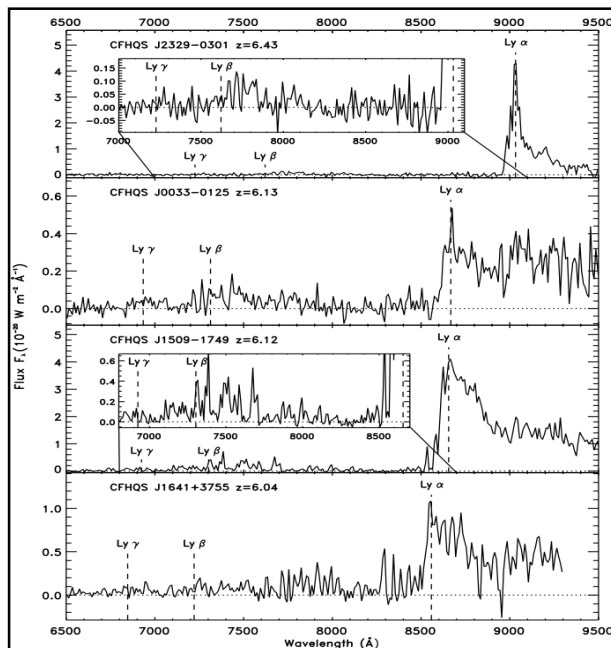
Willott et al. (AJ 134, 2435) reported the discovery of four high redshift quasars at $z > 6$, including the most distant ever observed at $z = 6.43$.

Spectroscopic confirmation has been obtained with the Gemini South telescope with the detection of a strong redshifted $\text{Ly}\alpha$ emission line (see figure on the right).

Only half-way through the completion of the CFHQS, this preliminary sample increases the small number of known QSOs at $z > 6$ from 10 to 14.

These high- z QSOs are challenging our understanding of galaxy and black hole formation and growth. Theory must explain how such massive galaxies with super-massive black holes in their center can be formed so rapidly after the Big Bang (less than a billion years timescale).

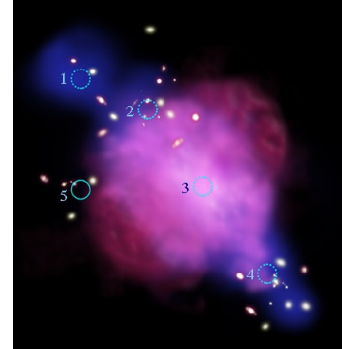
Because of their high redshift and luminosities, they



are also a unique tool to study the reionization epoch of the universe. Blueward to the Ly α line the UV flux of the quasar is absorbed by clumps of neutral Hydrogen, located in the path between the QSO and the earth, producing the so-called Ly α forest (see Figure). Detecting the Gunn-Peterson trough at $z > 6$ may put in light the epoch where the reionization ends. While higher S/N spectra are required for the CFHQS sample to perform accurate studies of the ionization state of the early universe, this new sample will contribute to better characterize the role of the cosmic variance due to the clumpy nature of the IGM.

Dark matter mystery deepens in cosmic "train wreck"

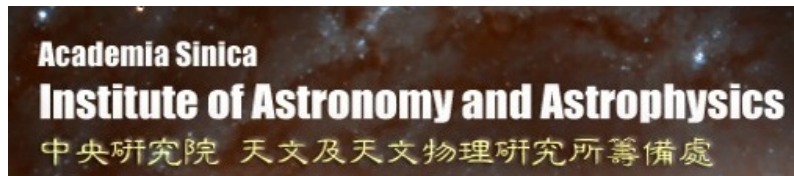
A team led by Dr. A. Mahdavi, of the University of Victoria, used Chandra, Subaru and CFHT images to map the dark matter in galaxy cluster system known as Abell 520. The five concentrations (or peaks) in the dark matter distribution around Abell 520 are identified as circles numbered 1 to 5 on the image on the right, where only the galaxies member of the cluster are shown together with the hot gas seen by Chandra. While four of these peaks correspond to regions of the cluster where many galaxies are visible, **peak number 3**, in the middle of the hot gas cloud, does not seem to be associated to galaxies. What could have made a significant amount of dark matter stay in the middle of the cluster? An exciting question which will require many more follow-up observations to be answered!



The Taiwan-CFHT Connection

When the CFHT communities made the development of a wide-field infrared camera a priority, CFHT was faced with the challenge to fund it at a time when CFHT12K, KIR and MegaPrime/MegaCam, all part of the new instrumentation plan, had drained a large part of the observatory's reserve. Consequently, the choice was made to find partners to collaborate with CFHT in the construction of what would become WIRCam.

Both the South Korean and Taiwanese astronomical communities joined CFHT and their contribution made possible the development of WIRCam. Through these collaborations, these communities were able to access the observatory for their scientific programs. They were also offered to actively participate in the development of WIRCam itself, an opportunity that our colleagues from the Academia Sinica Institute of Astronomy and Astrophysics (ASIAA) seized enthusiastically, in order to add a strong visible and near infrared component to their already well established development capabilities in sub-millimetric astronomy.



Through this collaboration, Taiwanese astronomers not only from ASIAA but also from various astronomy departments at universities like National Taiwan University (NTU, Taipei), National Taiwan Normal University (NTNU, Taipei), National Central University (NCU, Chung-li), and National Tsing Hua University (NTHU, Hsin-chu), benefited from the state-of-the-art instrumentation CFHT offers.

With the end of the initial Memorandum of Understanding at the end of 2007, the collaboration between Taiwan and CFHT was revisited earlier in the year, and both parties agreed to continue to work together. A new Agreement was signed between ASIAA and the observatory, offering a continued telescope access to Taiwanese astronomers from all institutions in the nation and abroad for a three-year period, with an easy to exercise option to continue beyond 2011.

8th CFHT Users' Meeting

Building CFHT's Future - Marseille (France), May 9-11, 2007

CFHT Users' Meetings are held every three years. They are a unique opportunity to gather users of the telescope, astronomers and engineers from the observatory, and the members of the Scientific Advisory Council and Board of Directors. The theme of the 7th Users' meeting held in Campbell River in 2004 was **The Canada-France-Hawaii Telescope in the Wide-field Imaging Era and beyond**. Since then, MegaPrime has been producing a huge amount of data and very exciting scientific results, thanks to the CFHT Legacy Survey and excellent PI programs. Both WIRCam and ESPaDOnS were completed and are now operational. With CFHT in a cruising mode operationally, it was time to think about the future.

No surprise that the theme of the 8th Users' Meeting was **Building CFHT's Future**. With such a theme and many important results to showcase, UM2007 was attended by 150 registered participants.

After the sunny Eastern shores of the Vancouver Island, it was time to move to France. The *Observatoire de Marseille Provence* hosted the meeting, held at the Novotel in downtown Marseille, a few hundred yards from the *Vieux Port*. Thanks to the Local Organizing Committee (see its members on the right), everything went smoothly, from the sessions themselves to a wonderful banquet on the *Marseillois*, a three-masted schooner moored in the *Vieux Port*. *Mahalo nui* to all involved in Hawaii and in Marseille for much work and many smiling faces attending the many needs of the participants at the meeting site.



Meeting preparation

In order to allow for an efficient meeting, a document was prepared presenting the status of the observatory, the situation of other 4-m class telescopes, and possible directions for the future. J.-G. Cuby (OAMP), P.-A. Duc (CEA), R. McLaren (UH-IfA), H. Richer (UBC), N. St.-Louis (U. de Montréal) and C. Veillet (CFHT) participated in the elaboration of the document, which addressed key issues like the optimization of the scientific output with the current instrumentation over the 2008-2012 period, and new instruments for 2013 and beyond were already addressed.



From left to right, CFHT Board member C. Catala, and Chair J.-G. Cuby, with C. Veillet, CFHT Executive Director, at the welcome reception.

This preparatory document also addressed the constraints on any plan for CFHT's future. Each of the three funding Agencies brought its own perspective, thanks to contributions by G. Fahlman (NRC), J.M. Hameury (CNRS) and R. McLaren (UH). It was therefore possible to come to the meeting knowing that it would be extremely difficult to foresee a \$10M instrument or a new telescope at the horizon of 2013...

A forum was also set up and good exchanges took place before the meeting. Thanks to all who participated in this preparatory report and the discussions on the forum, the Users' Meeting itself was very lively, well-grounded and efficient.

Users' Meeting outcome

Beyond the unique opportunity of gathering CFHT's users with a good number of CFHT staff, Board and SAC members, the Users' Meeting offered enough ideas and prospects from the very people the observatory is serving to allow three major actions to be taken.

Large Programs

The CFHTLS, the largest program ever undertaken at CFHT, with still a couple of years of data to analyze, is clearly a huge success, as seen by the many presentations at UM2007 and the exciting results it has already brought. Three semesters before its completion, the Users' Meeting was a good opportunity to look ahead and see if other Large Programs, not limited to MegaPrime, could be envisioned for 2008B and beyond. The list (see below) of the oral presentations given at UM2007 shows already an impressive list of ideas for MegaCam, WIRCam and ESPaDOnS. It was therefore decided to open a call for ideas and then, in early 2008, a formal call for Large Program proposals to start in 2008B and extend up to the end of 2012.

Golden Age Plan extended to cover [2005-2012]

With so many on-going projects and great ideas for the coming years, it was more natural to conclude that the Golden Age Plan, under which the observatory is moving forward, should be extended from its initial [2005-2010] time span, in order to cover the period on which the Large Programs to be proposed would develop. Such an extension was presented at the Board of Directors at the end of the year, and adopted in principle. A new version of the Golden Age plan ending in 2012 with the Corporation in good standing will be developed in 2008.

New Instruments

With CFHT's funding Agencies making clear that some decent level of funding could be made available for new instruments for 2013 and beyond, various ideas or concepts were presented, as seen on next page in the list of Oral Presentations. A Call for Proposals for Feasibility Studies was issued with a deadline of October 20. After SAC and Board review, four Feasibility Studies received a CFHT grant and will prepare a report by October 1st 2008. The table below summarizes them. By the end of 2008, one or more should be selected for a Phase A study, for a final selection by the end of 2009.

Name	Brief Description	PI(s)
FIRST	Fibred Imager foR Single Telescope A visible high angular resolution and high dynamic range imager to study exoplanetary systems and compact objects in general, addressing galactic to extragalactic science cases.	G.Perrin
IMAKA	Imaging from MAuna KeA with an atmosphere corrected 1 sq deg imager Significant image quality improvement to 0.3 arcsecond for a one square degree optical imager using ground layer adaptive optics (GLAO) and a 1.4 Gpixels elastic CCD focal plane.	R.Carlberg H.Richer
SITELLE	Spectromètre Imageur à Transformée de Fourier pour l'Etude en Long et en Large de raies d'Emission A wide field Imaging Fourier Transform Spectrometer (IFTS) providing the spectral information in the visible (350 nm – 1000 nm) for every single object in a 20' field of view at a spectral resolution from 1 (panchromatic image) up to 10000.	L.Drissen
SPIRou	A nIR spectropolarimeter for detecting earth-like planets of low-mass stars and investigating the role of magnetic fields in the star and planet formation process.	J.F.Donati

Users' Meeting Oral Presentations

Introduction - CFHT's Current Status

- The current status of the Observatory - *Veillet (CFHT)*
- 1200 nights and counting: Queued Service Observing at CFHT - *Martin (CFHT)*
- MegaCam pipeline at CFHT: present and immediate future - *Cuillandre (CFHT)*
- The WIRCam Preprocessing Pipeline - *Albert (CFHT)*

Four years within the CFHTLS

- The CFHTLS: How it all started - *Veillet (CFHT)*
- The Supernova Legacy Survey (SNLS) - *Pritchett (UVic)*
- 4 years of CFHTLS-Deep observations - *Soucail (OMP)*
- The Wide - *Mellier (IAP)*
- The Very-Wide - *Kavelaars (HIA-CADC)*
- Recent developments at TERAPIX - *Bertin (IAP)*
- CFHTLS from the CADMOR Perspective - *Schade (HIA-CADC)*

Wide-Field Imaging Science

- The orbital structure of the Kuiper belt: Results from the Canada-France Ecliptic Plane Survey - *Kavelaars (HIA)*
- Constraining the rate of GRB visible afterglows with the CFHTLS very wide survey - *Atteia (OMP)*
- SNLS Third Year Cosmological Results - *Sullivan (U Toronto)*
- Using SNLS supernovae to improve the use of Type Ia supernovae as distance indicators. - *Guy (IN2P3)*
- SN Ia explosion rate as function of redshift in the Supernova Legacy Survey - *Fouchez (LAM)*
- The XMM-LSS-CFHTLS cluster sample and its cosmological modeling - *Pierre (CEA)*
- Galaxy-Galaxy Lensing in the CFHTLS-Wide - *Parker (ESO)*
- Studying galaxy clusters with CFHT - *Hoekstra (UVic)*
- A long look at the COSMOS in the near-infrared - *McCracken (IAP)*
- Stellar mass assembly of elliptical galaxies from the COSMOS survey - *Ilbert (IfA)*
- Probing the stellar mass assembly over the last 10Gyears: A SWIRE-CFHTLS-VVDS surveys - *Arnouts (CFHT)*
- Spatial distribution of metals around galaxies in the center of CFHTLS-D4: Blowing Winds - *Petitjean (IAP)*
- Evolution of the color distribution of galaxies out to $z \sim 1.2$, in the CFHTLS-Deep Fields - *Ienna (OMP)*
- Probing the stellar populations and the kinematics of the galactic Bulge on the CFHT - *Schultheis (Obs Besancon)*
- Looking for cool Brown Dwarfs with CFHTLS - *Delorme (LAOG)*
- Young brown dwarfs and planetary mass objects in open clusters - *Moralex (LAOG)*
- Embedded Clusters and Their Environments in Massive Star-Forming Region S233IR - *Yan (ASIAA)*
- The densification of the Celestial Reference System : present status and perspectives with respect to the CFHT database and GAIA - *Souchay (SYRTE-OP)*
- WIRCam at TERAPIX - *Marmo (IAP)*

The first two years of Science with ESPaDOnS

- Magnetospheric accretion on classical T Tauri stars - *Donati (OMP)*
- ESPaDOnS exploring the star-planet interactions - *Moutou (LAM)*
- Magnetism, rotation and accretion in Herbig Ae-Be stars - *Wade (RMC)*
- Evolution of global stellar magnetic fields in A and B stars - *Landstreet (U. W. Ontario)*
- Magnetic topologies of fully-convective dwarfs - *Morin (OMP)*
- Probing rotating disks around Herbig Ae-Be stars - *Dinh-V-Trung (ASIAA)*
- A search for Magnetic Fields in Massive Stars - *Bouret (LAM)*

MegaPrime/WIRCam/ESPaDOnS Large Programs in the post-CFHTLS era

- A very-very wide survey - *Carlberg (U. Toronto)*
- Exploring the distant Solar System with MegaCam - *Gladman (UBC)*
- SNLS-2 - *Pritchett (U Victoria)*
- MegaCam large program: Searching for young brown dwarf eclipsing, binaries and transiting planets in clusters - *Moralex (LAOG)*
- ESPaDOnS large program: characterizing stellar magnetic fields throughout the HR diagram - *Donati (OMP)*
- ESPaDOnS large program: Magnetic properties of solar twins - *Petit (OMP)*

CFHT in 2013 and beyond - The Current Views

- In Canada - *Fahlman (HIA)* In France - *Hameury (INSU)*
In Hawaii - *McLaren (UH)*
- On Mauna-Kea and elsewhere - *Veillet (CFHT)*
- Tunable Filter Capabilities for the CFHT and recent FaNTOMM results - *Carignan (U. Montreal)*
- MegaPrime as a unique u-band imager -

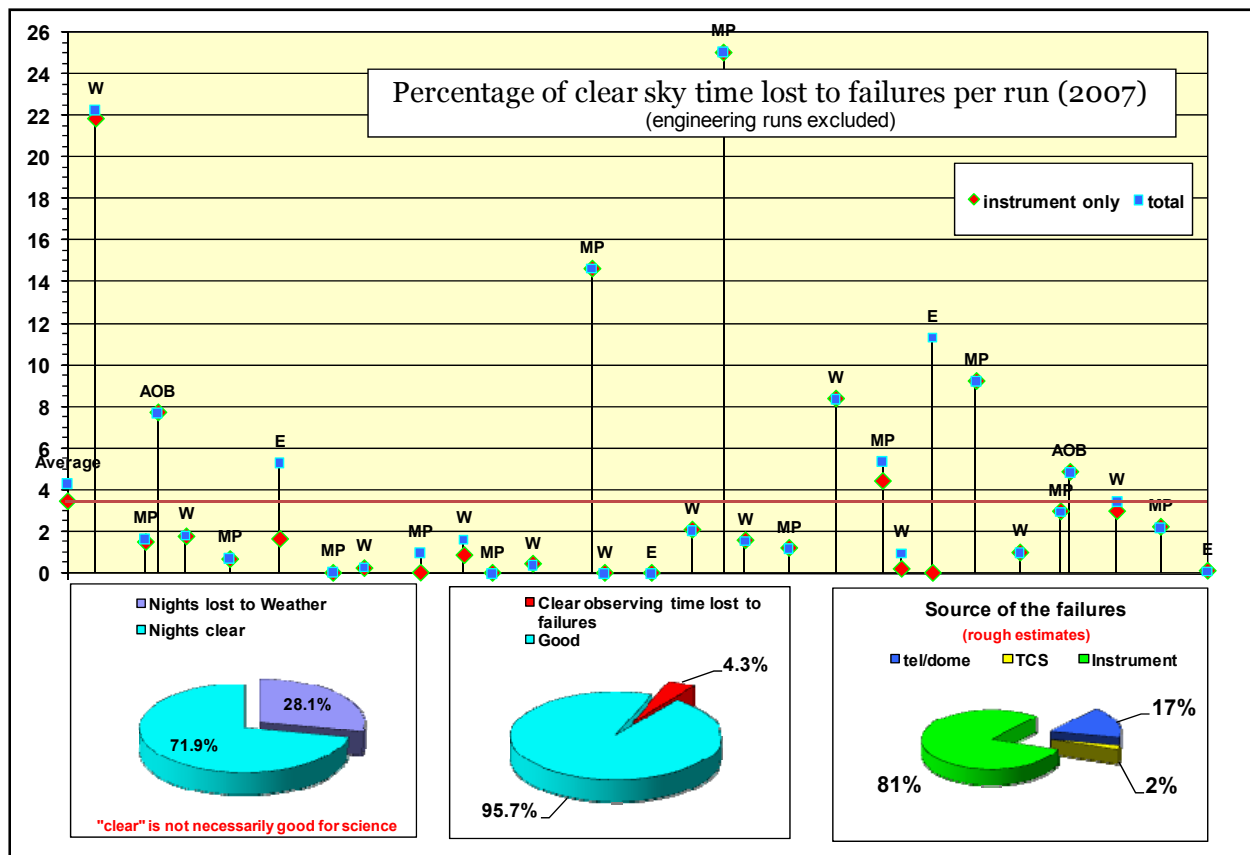
CFHT in 2013 and beyond - New programs and new instrumentation

- Current Status and Future Plans for Infrared Detectors from Teledyne: ASIC, HAWAII-4RG, Photon Counters - *Hodapp (IfA)*
- Very Long Baseline Interferometry on top of Mauna Kea : 'OHANA - *Perrin (LESIA)*
- Asteroseismology of evolved compact stars at CFHT - A proposition for a new instrumentation to study phenomena at high temporal resolution - *Charpinet (OMP)*
- Ground-based asteroseismology: what next? - *Mosser (OP)*
- SPIRou: a near-infrared spectropolarimeter for CFHT - *Donati (OMP)*
- Turning CFHT into a high resolution and high dynamic range imager in the visible - *Perrin (LESIA-OP)*
- VASAO: Visible All Sky Adaptive Optics - A new adaptive optics concept for CFHT - *Lai (CFHT)*
- An 8-m telescope dedicated to wide-field spectroscopy on the CFHT's pier - *Veillet (CFHT)*

Operations Report

Observing Efficiency

The graph below summarizes the observing time losses due to instrument and telescope failures. The goal for 2007 was to limit the losses to a maximum of 3.5% of clear weather. The night to night reliability of MegaPrime/MegaCam improved drastically, as seen with many runs leading to well below 3% or time lost to instrument problems. However, two major failures, one with the shutter and the other with the filter jukebox, led to significant time losses. The jukebox failure, which also caused the loss of the MegaCam i' filter, had the most consequences, as it required significant repairs on the filter exchange mechanism. However, the consequences on the science operations were mitigated, thanks to a very efficient work of all those involved: it was possible to prepare and install WIRCam on the telescope within 48 hours of the MegaCam incident and operations resumed in QSO mode with only two nights lost including the night of the failure! On the bright side, both failures were carefully examined and the many steps which led to the failures themselves were understood and corrective action was taken that will prevent similar occurrences in the future.

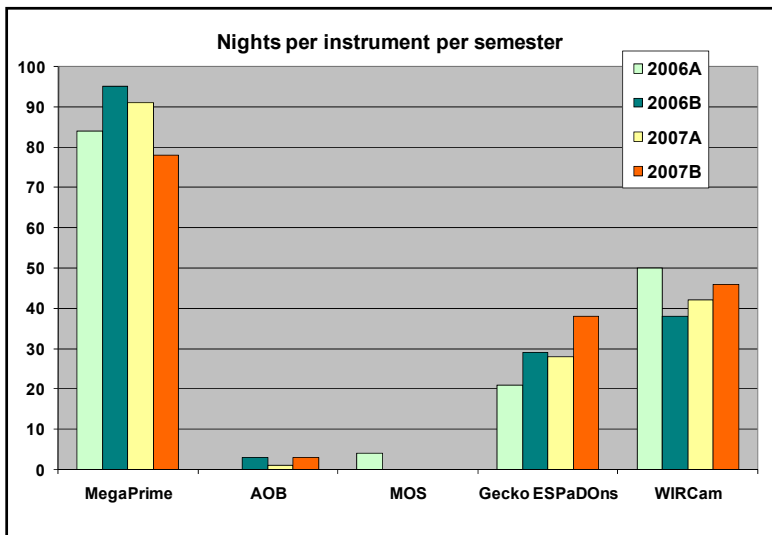


The goal was to lose less than 3.5% of the clear observing time to technical problems, and this goal was clearly not reached if time accounting is done in the same way as over the previous years. However, 3.5 of the 5 scheduled engineering nights over the year were not used and given back to science observations, making the actual loss actually below the 3.5% threshold!

This graph shows also the percentage of "clear nights" over the year. It is information to use carefully, as clear weather is not necessarily good enough for gathering useful scientific data. Detailed statistics for the QSO nights is available in the QSO pages of CFHT's web site. However, it is fair to say that 2007 was not a good year weather-wise for Mauna Kea.

Instrument Statistics

The graph opposite shows the number of nights scheduled for PIs and the CFHTLS over the four semesters of 2006 and 2007. Three instruments, MegaCam, WIRCam and ESPaDOnS, took most of the observing time, with the occasional runs on AOB or MOS in Fabry-Pérot mode. This three-instrument regime is likely to endure over the coming years. CFHT observed for nearly 300 nights in Queued Service Observing mode. The likelihood of ESPaDOnS offered in QSO mode sometime in 2008 will eventually bring QSO as the almost exclusive mode of observation at the observatory.



Queued Service Observing in 2007

During 2007, two instruments, MegaCam and WIRCam, were offered under the New Observing Process (NOP). The main objectives of this ambitious operational mode are to improve observing efficiency, increase science productivity and add value to the data. The NOP is composed of an ensemble of software designed to plan and perform the observations (Queued Service Observing), acquire the data (New Environment for Observing), analyze and process the data (Elixir), and, finally, distribute and archive the data (DADS).

The 2007A semester for MegaPrime was scientifically successful, despite two major issues severely affecting the last 2 months of the semester. The first three months of the semester were good weather-wise (meaning better than usual for an "A" semester!) but not equally so at the end of the semester. Not only nights were lost but the instrument, after repairs, had to be used on nights when the Moon was very bright. Options were sometimes limited since the *i'* filter, which is a good option with the Moon, was destroyed in June. Early in the semester, we had again some periods of very bad, unpredictable and unstable seeing but we were able to adapt well, although our validation rate suffered a bit. The 2007B semester for MegaPrime was scientifically successful, despite the bad weather affecting a large fraction of the time allocated. The camera worked quite well during this semester, and the new *i'* band filter, which was delivered in October, is excellent.

We offered WIRCam as a fully commissioned instrument for 2007A. Some time was in fact used for engineering, mostly for improvements made on the crosstalk issues. The infamous negative crosstalk has now been completely eliminated. With the additional nights obtained due to MegaCam, the good observing efficiency, and the unusually good weather for this semester, the statistics for 2007A are outstanding. Everything was 100% completed! The 2007B semester with WIRCam was quite good, despite the last run in December which was severely affected by bad weather. However, WIRCam overall efficiency on the sky is very high, reaching 85 - 90% for most of the nights.

The entire observing chain QSO→NEO→TCS is very efficient, robust and flexible. In order to offer ESPaDOnS in QSO mode in 2008A, much work was accomplished to migrate the observing environment of the instrument from a visitor-oriented mode to the more automated mode of QSO. In addition, the data processing pipeline (Libre-ESPRIT) main routines were encapsulated in a new pipeline so that processed files could be provided to the PIs following the usual data distribution, as with MegaCam and WIRCam. The observing efficiency will greatly benefit from this high efficiency and the flexibility to solve complex scheduling issues related to several ESPaDOnS scientific programs.

Outreach

2007 has been another active year for CFHT Outreach. Most of the activities are still the responsibility of the members of the Outreach Group, but the entire staff of CFHT responds with great dedication whenever they are asked for their assistance. The Group continues to strive to maintain a balance between participating in numerous activities while still preserving our enthusiasm. The Outreach Group would like to express its gratitude to all of the volunteers, friends and family members who participated in all of the activities in 2007. Because of their efforts, CFHT continues to be a respected and active participant in the community, both in Waimea and across the Big Island.

Star Gazing Parties:

- December 1st - Christmas Star Party

CFHT HQ and Summit Visits:

- January 30th - Art Insight Summit Tour (relocated to Waimea due to high winds)
- May 9th - Summit Visit for ESA Astronaut Andre Kuipers
- May 31st - AAS Media Summit Tour
- June 1st - AAS Member Summit Tour
- November 6th - International Lunar Observatory Summit Tour
- November 14th - American Medical Association Summit Tour
- November 19th - Summit Tour for Silent Auction Winner

Fairs and Festivals:

- January 18th - Family Science Night at Waimea Middle School
- January 27th - Onizuka Day at UH Hilo
- February 16th - West Hawaii Intermediate/High School Science Fair (judging)
- February 17th - East Hawaii Intermediate/High School Science Fair (judging)
- February 28th - Pa'uailo Elementary/Intermediate School Science Fair (judging)
- March 14th - Girl Scouts Women in Math and Science Day UH Hilo
- April 14th - Healthy Keiki Fest Waimea



Career Fair at Kealakehe Elementary School

Station

Miscellaneous:

- CFHT continues to co-host (with Keck) the West Hawaii Astronomy Club meetings every other month
- July 4th - Charity event, Parker Ranch Rodeo's Calf Dressing Event
- Billy Mahoney and Tom Benedict continue to be active members of the Waimea Community Robot Club
- October 20/21st - Relay for Life, Waimea. 17-member team.

Special Events:



In February, CFHT images were on display at the Kahilu Theater's Gallery for 4 weeks. CFHT staff members were on hand to explain the images during evening performances. School Groups were also given special sessions with the images during school performances

- April 20th - Waimea Country School Science Fair (judging)
- April 21st - Astro Day Hilo, CFHT posters and calendars were very popular as usual.
- April 28th - Earth Day Waimea
- September 28th - Career Fair at Kealakehe Elementary School
- November 15th - Girls Exploring Math and Science Day
- November 17th - RoboFest 2007 at UH Hilo

Public Talks and School Visits:

- January 17th - Waimea Middle School Talk
- June 8th - Astro Talk at Volcano National Park
- September 29th - Sky Tonight Talk at 'Imiloa Astronomy Center
- October 6th - Universe Tonight Talk at Visitor Information Station

The Personal Touch – New Faces



Daniel Devost

Daniel Devost joined the CFHT in April 2007 as a Canadian resident Astronomer after the departure of Rémi Cabanac. Daniel arrived with his wife Michelle and his two children Thierry and Juliette from Ithaca, NY where he had worked for the last seven years on the Infrared Spectrograph, one of the instruments onboard the Spitzer Space Telescope. Daniel brings with him his experience on observation and reduction of infrared data with an echelle spectrograph. He continues his research with the Spitzer team and plans for research programs involving CFHT/Spitzer. Daniel contributes mainly to the distribution process of the WIRCAM data and to the development of the pipeline.

Michelle Devost

Michelle Devost joined the CFHT in June 2007 as a Data Analyst. She arrived with her husband Daniel and their two children. Michelle is building a pipeline to reduce spectra taken with the Infrared Spectrograph onboard the Spitzer Space Telescope. This is a project she had begun while working with Daniel at Cornell University. She brings to the CFHT her experience with programming and data reduction.



Current Staff at CFHT

Akana, Moani	Administrative Specialist	Luthe, John	Observing Assistant
Albert, Loïc	Resident Astronomer	Mahoney, Billy	Data Base Specialist
Alles, Rosemary	Systems Programmer	Manset, Nadine	Resident Astronomer
Arnouts, Stéphane	Resident Astronomer	Martin, Pierre	Director of Science Operations
Arruda, Tyson	Mechanical Technician	Matsushige, Grant	Sr. Instrumentation Specialist
Atapattu, Rohendra	Operations Engineer	Mizuba, Les	Detector Specialist
Babas, Ferdinand	Assistant System Administrator	Morrison, Glenn	Resident Astronomer
Baril, Marc	Instrument Engineer	Potter, Sharon	Safety Specialist
Barrick, Gregory	Optical Engineer	Roberts, Larry	Electrician
Benedict, Tom	Instrumentation Specialist	Rodgers, Jane	Finance Manager
Bryson, Elizabeth	Librarian	Sabin, Daniel	Mech. Designer / Instrument Maker
Burdullis, Todd	Senior Service Observer	Salmon, Derrick	Director of Engineering
Cruise, William	Telescope Control Systems Eng.	Stevens, Mercédes	Administrative Assistant
Cuillandre, Jean-Charles	Staff Astronomer	Taroma, Ralph	Observatory Facility Manager
Dale, Laurie	Administrative Specialist	Teeple, Doug	System Programmer
Devost, Daniel	Resident Astronomer	Thomas, James	Computer Systems Engineer
Devost, Michelle	Data Analyst	Veillet, Christian	Executive Director
Draginda, Adam	Service Observer	Vermeulen, Tom	Systems Programmer
Elizares, Casey	Mechanical Technician	Ward, Jeff	Detector Engineer
Fischer, Linda	Resource Specialist	Warren, DeeDee	Director of Finance & Administration
Forshay, Peter	Service Observer	Wells, Lisa	Observing Assistant
Gajadhar, Sarah	Electrical Engineer	Withington, Kanoa	Software Manager
George, Teddy	Observing Assistant	Wood, Roger	Automotive Mechanic
Ho, Kevin	Instrumentation Manager	Woodruff, Herb	System Administrator
Lai, Olivier	Resident Astronomer	Woodworth, David	Senior Observing Assistant
Laychak, Mary Beth	Service Observer	Zelman, Rachael	Service Observer
Look, Ivan	Mechanical Design Engineer		

Comings and Goings

Cave, Jean	Visitor	Nov	Kilkenny, Jamie	Student	Jan - Apr
Clerc, Nicholas	Visitor	Apr - Aug	Liu, Chun-Fan	Visitor	Jan - Mar
Dela Rosa, Eric	Student	Jun - Jul	Petit, Véronique	Visitor	Dec
Devost, Daniel	Arrival	Apr	Pritchett, Chris	Visitor	Nov
Devost, Michelle	Arrival	Jun	Owen, Frazier	Visitor	Jul
Eilek, Jean	Visitor	Jul	Yan, Chi-Hung	Visitor	Jan - Aug
Fedou, Pierre	Visitor	Jun-Aug, Oct-Dec			

Users' Meeting participants at *Le Vieux Port*



The Users' Meeting participants gather for a group picture on the *Quai du Port*. *Notre-Dame de la Garde* is overlooking Marseille and the *Vieux Port* and the three-masted schooner *Le Marseillois* is waiting for the crowd to come onboard and enjoy a wonderful *dîner provençal*.

Financial Resources

The three Member Agencies supported the CFHT annual budget in 2007 as shown in the table at the right, in US funds.

NRC	\$ 2,956,100
CNRS	\$ 2,956,100
UH	\$ 685,472
Total	\$ 6,597,672

These contributions reflect a 3% increase over the prior year, in accordance with the Golden Age Plan..

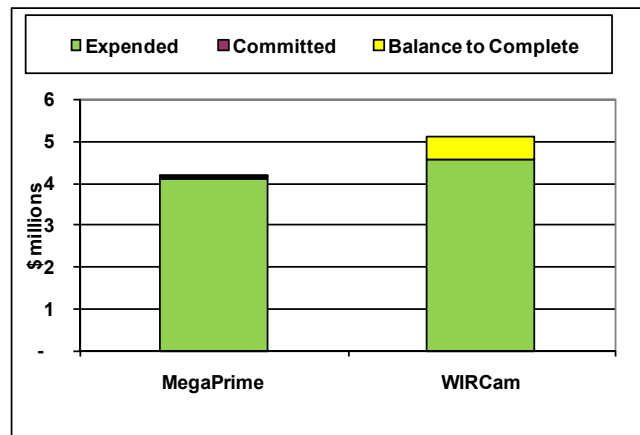
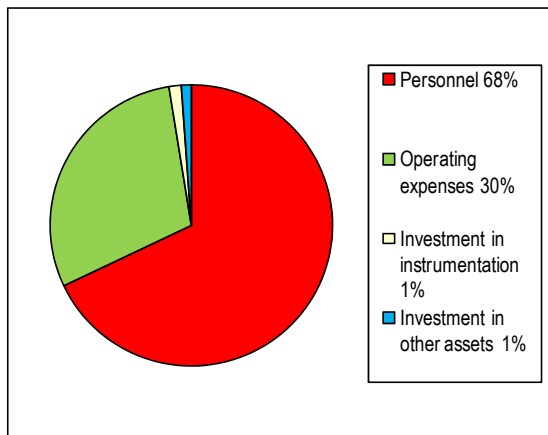
Under a collaborative agreement with CFHT, the National Taiwan University remitted \$8,772, as reimbursement for costs associated with its use of the Corporation's facilities. Other sources of funds included \$22,285 from mid-level facility use credits, \$32,732 from distribution of educational materials, \$250,000 from the sale of the CFHT12K camera, and \$178,659 in earned interest allocated to the contingency reserve fund.

From the operating fund, expenditures were allocated to the areas listed in the table at right.

Observatory facilities and operations	\$ 774,975
Base facilities and operations	670,837
Instrumentation	122,201
Science	67,718
Personnel	4,929,272
General expenses	436,669
Transfer from Reserve	(404,000)
Total Operating Fund Expenditures	\$ 6,597,672

During the year, \$102,701 were disbursed from the instrumentation fund for the current projects of the Wide-field Imaging Plan, which brings the total investment under this multi-year program to \$11,228,788. The current appropriation and the portion committed to date are shown in 2007, 94.2% of total appropriations under the Wide-field Imaging plan were spent or committed.

Overall in 2007, resources from all CFHT funds were allocated to the categories of expenditures shown in the pie chart below.



CFHT Committees

Board of Directors (as of Dec.31, 2007) Executive Secretary to the Board of Directors: Mercedes M. Stevens

Claude Catala (F)	Observatoire de Paris
Jean-Gabriel Cuby (F) - Chair	Laboratoire de Astrophysique de Marseille
Michael De Robertis (C)	York University
Gregory G. Fahlman (C)	Herzberg Institute of Astrophysics
James Gaines (H)	University of Hawaii
Jean-Marie Hameury (F)	Institut National des Sciences de l'Univers
Robert A. McLaren (H) - Treasurer	University of Hawaii
Richard Normandin (C)	National Research Council Canada
Harvey Richer (C) - Vice-Chair	University of British Columbia
Daniel Rouan (F) - Secretary	Observatoire de Paris-Meudon

Scientific Advisory Council & Time Allocation Committee Members

Pierre-Alain Duc (F) - Vice-Chair ; TAC	Service d'Astrophysique - CEA
Christ Ftaclas (H) - TAC	University of Hawaii
Laura Ferrarese (C) - TAC	Herzberg Institute of Astrophysics
Jean-François Gonzalez (F) - TAC	Centre de Recherche Astronomique de Lyon
Cécile Gry (F)	Laboratoire d'Astrophysique de Marseille
Hendrik Hoekstra (C) - TAC	University of Victoria
Robert Jedicke (H)	University of Hawaii
Dae-Sik Moon (C)	University of Toronto
Denis Mourard (F)	Observatoire de la Côte d'Azur
Nicole St.-Louis (C) - Chair	Université de Montréal

CFHT Executive

Christian Veillet - Executive Director	DeeDee Warren - Director of Finance and Administration
Derrick Salmon - Director of Engineering	Pierre Martin – Director of Science Operations

Audit Committee

Bernard Adans (F)	Centre National de la Recherche Scientifique
Daniel Gosselin (C)	National Research Council Canada
Russell Miyake (H) - Chair	University of Hawaii
Peter Peacock (C)	National Research Council Canada
Hubert Rédon (F)	Centre National de la Recherche Scientifique

Contracts Review Committee

François Baudin (F)	Institut National des Sciences de l'Univers
Robert McEwen (C) - Chair	National Research Council Canada
Michel Rancourt (C)	National Research Council Canada
Gérard Vivier (F)	Institut National des Sciences de l'Univers
Duff Zwald (H)	University of Hawaii

(C) Nominated by the National Research Council Canada

(F) Nominated by the *Centre National de la Recherche Scientifique*, France

(H) Nominated by the University of Hawaii

Approved Programs 2007A

Adami	MegaPrime	Un domaine vierge dans les amas de galaxies: Imagerie U des galaxies les plus faibles de Coma
Alecian	ESPaDONs	Investigating the magnetic chemically peculiar HAeBe star HD 72106A
Bohlender	ESPaDONs	Studying the magnetospheric interactions of hot Jupiters with their host stars
Bouvier	WIRCam	Isolated Planetary Mass Objects (IPMOs) : nearing the end of the IMF
Catala	ESPaDONs	Magnetism of pre-main sequence A and B stars in young open clusters: the influence of environment, age & rotation
Chiueh	MegaPrime	Galaxy clusters as a dark energy probe
Cowie	WIRCam	A comprehensive spectroscopic survey of galaxies at $Z > 1.6$
Delorme	WIRCam	On the track of Y dwarfs: A WIRCam Survey to find the coolest Brown Dwarfs known.
Dinh	ESPaDONs	Searching for magnetic field in binary post-AGB stars
Donati	ESPaDONs	Characterizing the magnetic topologies of fully-convective dwarfs
Folsom	ESPaDONs	Investigating the magnetic chemically peculiar HAeBe star HD 72106A
Forveille	ESPaDONs	A deep search for very cold brown dwarfs companions
Gaidos	ESPaDONs	Pollution of cool open cluster dwarfs by primordial massive stars
García-Alvarez	ESPaDONs	The fastest corona in town
Harrington	ESPaDONs	Magnetic fields of M Dwarfs
Huang	WIRCam	Observation of Gamma-Ray Burst Afterglows detected by Swift
Hudson	WIRCam	Spatially-resolved Ages and Metallicities of Coma Dwarfs in the HST/ACS Treasury Survey
Hutchings	WIRCam	Deep NIR Star and Galaxy Counts above the Galactic Plane
Ibata	MegaPrime	The extended disks of galaxies: a new galactic component?
Ibata	MegaPrime	What is the nature of the dark matter: cold or warm? Imprints on the tidal stream of Pal 5
Kavelaars	MegaPrime	Planets and dwarf planets in the Kuiper Belt
Kneib	WIRCam	WIRCam Deep Survey (WIRDS): Tracing the Evolution of Galaxies to $z \sim 3$.
Lin	WIRCam	The Role of Galaxy Interaction in the Star Formation History of Galaxies up to $z \sim 4$
Lin	WIRCam	The Nature of High Redshift Galaxies
Lyo	WIRCam	Deep and wide-field infrared survey of the nearby ρ Ophiuchi star forming region down to the brown dwarf and planetary-mass objects
Magnier	MegaPrime	A low-mass proper-motion survey of the ρ Ophiucus star-forming region
Morrison	MegaPrime	CFHT panchromatic imaging of the richest clusters at $z < 0.16$
Moutou	ESPaDONs	Studying the magnetospheric interactions of hot Jupiters with their host stars
Muzzin	MegaPrime	Detecting Clusters of Galaxies at $1 < z < 2$ in the Spitzer SWIRE Legacy Fields
Petit	ESPaDONs	Magnetic fields, X-rays and winds of massive stars: The Orion Nebula Cluster
Petit	MegaPrime	Trouver les TransNeptuniens exotiques (3)
Petit	MegaPrime	Planets and dwarf planets in the Kuiper Belt.
Puravankara	WIRCam	The IMF in the Cometary Globule CG12: the influence of external trigger on the low mass stars and brown dwarfs
Rizzi	WIRCam	Precise distances to Ursa Minor and Draco dSph galaxies from K band RR Lyrae
Robin	MegaPrime	Cinématique du bulbe galactique : Inclinaison de la barre et lien bulbe/barre
Sanders	MegaPrime	Hawaii UV/NIR imaging of the HST-ACS COSMOS 2-deg2 Treasury field
Sanders	WIRCam	Hawaii NIR imaging of the HST-ACS-COSMOS 2-deg2 treasury field
Serjeant	MegaPrime	Co-ordinated UV \rightarrow far-IR maps of the star formation and stellar mass density fields
Shkolnik	ESPaDONs	Identifying the missing population of nearby young low-mass stars – III
Shkolnik	ESPaDONs	Survey of the magnetospheric interactions between hot Jupiters and their parent star
Soucail	MegaPrime	Distribution de masse d'amas de galaxies lointains: étude combinée X et weak lensing à $z \sim 0.5$
Stockton	WIRCam	Identification of massive old galaxies at high redshifts
Wade	ESPaDONs	Magnetism of pre-main sequence A- and B stars in young open clusters: the influence of environment, age & rotation
Wainscoat	MegaPrime	Optimizing and testing the sweet spot survey for Pan-Starrs
West	MegaPrime	Intracluster Light and Intragalactic Globular Clusters in Abell 1185
Willis	WIRCam	ZEN3: probing reionisation with $z \sim 8$ Lyman-alpha emitters
Willott	MegaPrime	A very wide survey for $z \sim 6$ quasars and cool brown dwarfs
Willott	WIRCam	The WIRCam Deep Survey (WIRDS): tracing the evolution of massive galaxies to $z \sim 3$.
Yan	MegaPrime	Embedded Clusters in Massive Star Forming Region (MegaCam)
Yan	WIRCam	Embedded Clusters in Massive Star Forming Region (WIRCam)
Yee	MegaPrime	Galaxy clusters as a dark energy probe

Approved Programs 2007B

Allers	WIRCam	A survey for new young brown dwarfs in the Perseus and Orion star forming regions
Almaini	MegaPrime	Deep u-band imaging of the UKIDSS UDS field
Azimlu	WIRCam	Star formation in hot environments
Beaulieu	WIRCam	The effect of metallicity on the Cepheid Period-Luminosity relation
Beuzit	ESPaDOnS	Stellar multiplicity and extrasolar planet formation
Bickerton	MegaPrime	A drift-scan search for stellar occultations by trans-neptunian objects
Biller	WIRCam	A systematic survey for the very young planetary mass objects
Bohlender	ESPaDOnS	Studying the magnetospheric interactions of hot Jupiters with their host stars (continued)
Bouvier	WIRCam	Isolated Planetary Mass Objects (IPMOs) : nearing the end of the IMF
Catala	ESPaDOnS	Magnetism of pre-main sequence A and B stars in young open clusters: the influence of
Chiueh	MegaPrime	GALAXY CLUSTERS AS A DARK ENERGY PROBE
Courteau	WIRCam	Near-infrared imaging of the Andromeda SPiral galaxy (M31)
Dinh	ESPaDOnS	Search for magnetic field in binary post-AGB stars
Dougados	ESPaDOnS	Magnetic fields and accretion flows in classical T \sim Tauri stars
Dupuy	WIRCam	Dynamical masses of brown dwarfs and low-mass stars
Ebeling	MegaPrime	Photometric calibration of the MACS weak-lensing sample
Gu	ESPaDOnS	Magnetic Fields of Three Late F-type Stars: HD 179949, τ Bootis, and HD 115383
Harrington	ESPaDOnS	Spectropolarimetry of Herbig Ae/Be stars
Hsieh	WIRCam	Probing the dark age: A deep WIRCam J survey for $z > 7$ galaxies in the extended Chandra
Hu	WIRCam	A pilot Ly α $z \sim 7.7$ galaxy survey at infrared wavelengths
Hussain	ESPaDOnS	Magnetic activity at the extremes of rotation
Ibata	WIRCam	How are disks built up?
Kavelaars	MegaPrime	Planets and dwarf planets in the Kuiper Belt
Kim	WIRCam	A wide-field WIRCam observation for structure of metal-poor Galactic globular clusters...
Kim	WIRCam	Near-infrared study of the bulge globular clusters and field stars in M31, M32 and NGC 205
Kneib	WIRCam	WIRCam Deep Survey (WIRDS): Tracing the Evolution of Galaxies to $z \sim 3$.
Lagrange	ESPaDOnS	Investigating low-mass companions around early type stars
Landstreet	ESPaDOnS	Magnetic Doppler Imaging of Ap stars
Lim	WIRCam	Spatial distribution of hot molecular hydrogen gas in Perseus A
Lin	MegaPrime	Supporting weak lensing study on dark matter profile of galaxy clusters
Ma	WIRCam	The mass-assembly history of galaxies in distant MACS clusters
Marsden	ESPaDOnS	Do F-stars have a different dynamo to lower mass stars?
McConnachie	MegaPrime	The physical properties of the proto-galactic building blocks of M31
Meech	MegaPrime	Deep impact extended mission: Recovery of 85P/Boething
Montmerle	ESPaDOnS	Magnetic fields, X-rays and winds of massive stars: The Rosette and Cep OB3 clusters
Morin	ESPaDOnS	Exploring magnetic fields of fully-convective low-mass dwarfs
Morrison	MegaPrime	CFHT Hi-res & panchromatic imaging of galaxies of the richest galaxy clusters
Moutou	ESPaDOnS	Studying the magnetospheric interactions of hot Jupiters with their host stars (cont)
Petit	ESPaDOnS	Magnetic fields, X-rays and winds of massive stars: The Rosette cluster
Petit	MegaPrime	Trouver les TransNeptuniens exotiques (4 et fin)
Petit	MegaPrime	Planets and dwarf planets in the Kuiper Belt (2)
Phan-Bao	ESPaDOnS	Measuring magnetic fields in fully-convective stars
Pitts	MegaPrime	Identifying low-mass members of nearby clusters
Rouan	MegaPrime	Follow-up of the exoplanet program of the CoToT satellite...
Sanders	WIRCam	Hawaii NIR imaging of the HST-ACS-COSMOS 2-deg ² treasury field
Shang	WIRCam	Searching remnant outflow cavities in the IR around young stars
Shkolnik	ESPaDOnS	Survey of magnetospheric interactions between hot Jupiters and their parent star
Shkolnik	ESPaDOnS	Identifying the missing population of nearby young low mass stars
Tully	WIRCam	Near-infrared imaging of the Andromeda SPiral galaxy (M31)
Umetsu	WIRCam	Testing the cold dark matter paradigm with cluster gravitational lensing
Urata	WIRCam	Multi-frequency follow-up of gamma-ray burst afterglows detected by Swift
Urbaneja	MegaPrime	The flux weighted gravity-luminosity relationship
Wade	ESPaDOnS	Magnetism of pre-main sequence A- and B stars in young open clusters: the influence of
Walawender	WIRCam	Outflows and protostars in L1340
Willott	MegaPrime	A very wide survey for $z=6$ quasars and cool brown dwarfs
Willott	WIRCam	WIRCam Deep Survey (WIRDS): Tracing the Evolution of Galaxies to $z \sim 3$.
Yee	MegaPrime	Galaxy clusters as a dark energy probe

2007 CFHT Refereed Publications

All CFHT refereed publications are located in a dataset on ADS at: http://adsabs.harvard.edu/abstract_service.html

The following criteria are used to judge whether a paper is considered a CFHT publication: "A paper must report new results based on significant observational data obtained at CFHT or be based on archival data retrieved from the CFHT archive. If data from multiple telescopes are included, the CFHT data should represent a significant fraction of the total data."

- Adami, C., et al, 2007. Spatial variations of the optical galaxy luminosity functions and red sequences in the Coma cluster: clues to its assembly history. *A&A* 462, 411-427.
- Adami, C., et al, 2007. An extension of the SHARC survey. *A&A* 472, 373-381.
- Adami, C., et al, 2007. Coma cluster object populations down to MR ~ -9.5 . *A&A* 472, 749-755.
- Andrievsky, S.M., et al, 2007. Chemical composition of semi-regular variable giants. *A&A* 464, 709-713.
- Arnouts, S., et al, 2007. The SWIRE-VVDS-CFHTLS surveys: stellar mass assembly over the last 10 Gyr. Evidence for a major build up of the red sequence between $z = 2$ and $z = 1$. *A&A* 476, 137-150.
- Bardeau, S., et al, 2007. A CFH12k lensing survey of X-ray luminous galaxy clusters. II. Weak lensing analysis and global correlations. *A&A* 470, 449-466.
- Barrado Y Navascués, D., et al, 2007. The young, wide and very low mass visual binary Lambda Orionis 167. *A&A* 468, L5-L8.
- Barrena, R., et al, 2007. Internal dynamics of the radio halo cluster Abell 773: a multiwavelength analysis
Internal dynamics of the radio halo cluster Abell 773: a multiwavelength analysis. *A&A* 467, 37-48.
- Barriault, L., et al, 2007. Multi-ionic kinematical study of the H II region sharpless 2-158. *ApJ* 667, 257-274.
- Battinelli, P., et al, 2007. The size and structure of the spheroid of IC 1613. *A&A* 466, 875-881.
- Benjamin, J., et al, 2007. Cosmological constraints from the 100-deg² weak-lensing survey. *MNRAS* 381, 702-712.
- Bertoldi, F., et al, 2007. COSBO: The MAMBO 1.2 millimeter imaging survey of the COSMOS field. *ApJS* 172, 132-149.
- Bongiorno, A., et al, 2007. The VVDS type-1 AGN sample: the faint end of the luminosity function. *A&A* 472, 443-454.
- Boyajian, T.S., et al, 2007. The long-period, massive binaries HD 37366 and HD 54662: Potential targets for long-baseline optical interferometry. *ApJ* 664, 1121-1129.
- Brusa, M., et al, 2007. The XMM-Newton wide-field survey in the COSMOS field. III. Optical identification and multiwavelength properties of a large sample of x-ray-selected sources. *ApJS* 172, 353-367.
- Cabanac, R., et al, 2007. The CFHTLS strong lensing legacy survey. I. Survey overview and T0002 release sample. *A&A* 461, 813-821.
- Capak, P., et al, 2007. The effects of environment on morphological evolution at $0 < z < 1.2$ in the COSMOS survey. *ApJS* 172, 284-294.
- Capak, P., et al, 2007. The first release COSMOS optical and near-IR data and catalog. *ApJS* 172, 99-116.
- Cappelluti, N., et al, 2007. The XMM-Newton wide-field survey in the COSMOS field. II. X-ray data and the logN-logS relations. *ApJS* 172, 341-352.
- Cassata, P., et al, 2007. The cosmic evolution survey (COSMOS): The morphological content and environmental dependence of the galaxy color-magnitude relation at $z \sim 0.7$. *ApJS* 172, 270-283.
- Catala, C., et al, 2007. The magnetic field of the pre-main sequence Herbig Ae star HD 190073. *A&A* 462, 293-301.
- Catala, C., et al, 2007. The magnetic field of the planet-hosting star τ Bootis. *MNRAS* 374, L42-L46.
- Chilingarian, I., et al, 2007. Discovery of a new M 32-like "Compact Elliptical" galaxy in the halo of the Abell 496 cD galaxy. *A&A* 466, L21-L24.
- Crockett, R.M., et al, 2007. A deeper search for the progenitor of the Type Ic supernova 2002ap. *MNRAS* 381, 835-850.
- Davidge, T.J., 2007. The disk and extraplanar regions of NGC 2403. *ApJ* 664, 820-839.
- Davidge, T.J., Jensen, J.B., 2007. The brightest stars in M32: Comparing predictions from spectra with the resolved stellar content. *AJ* 133, 576-597.
- Davis, M., et al, 2007. The all-wavelength extended Groth Strip International Survey (AEGIS) Data Sets. *ApJ* 660, L1-L6.
- de La Torre, S., et al, 2007. VVDS-SWIRE. Clustering evolution from a spectroscopic sample of galaxies with redshift $0.2 < z < 2.1$ selected from Spitzer IRAC 3.6 μ m and 4.5 μ m photometry. *A&A* 475, 443-451.
- de Marchi, F., et al, 2007. Variable stars in the open cluster NGC 6791 and its surrounding field. *A&A* 471, 515-526.
- Donati, J.-F., et al, 2007. Magnetic fields and accretion flows on the classical T Tauri star V2129 Oph. *MNRAS* 380, 1297-1312.
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A busy session at the 8th CFHT Users' Meeting – Marseille, France - May 2007

Glossary

CEA: Commissariat à l'Énergie Atomique, the French Agency responsible for the construction of MegaCam, under contract to CFHT.

CFHTLS: The CFHT Legacy Survey takes advantage of MegaCam's large field of view to conduct 3 different surveys totaling over 5000 square degrees in 5 years. The survey will play a crucial role in studies ranging from the nearby KBOs, to brown dwarfs in our Galaxy, to the distribution of matter in the Universe.

MegaCam: A large mosaic of 40 charge-coupled device (CCD) imaging chips that provides a field of view on the sky of one square degree, about five times the area covered by the full moon. It is on the sky since 2003.

MegaPrime: In order to make the best use of MegaCam, a completely new prime-focus environment is needed. The many separate activities involved in this work are grouped under the MegaPrime project. Apart from the original construction, this is the largest development project ever undertaken at CFHT and is the principal activity for much of our technical staff.

WIRCam: Wide-field Infrared Camera. This 16-million pixel camera provides a field of view on the sky somewhat greater than 40% of the area covered by the full moon. It was a major instrumentation project at CFHT and was constructed in collaboration with external partners for deployment on the sky in 2005.

ESPaDOnS: The échelle spectro-polarimeter which gives a complete optical spectrum in a single exposure with a spectral resolution of about 70,000. ESPaDOnS arrived at CFHT in 2004.

HIA: The Herzberg Institute of Astrophysics manages Canada's involvement in major astronomical observatories in Chile and Hawaii, and participated in the MegaPrime project.

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