

The CFHTLS, a successful legacy survey at CFHT (and lessons to be learned from...)

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(with a ex-Steering Group and a current
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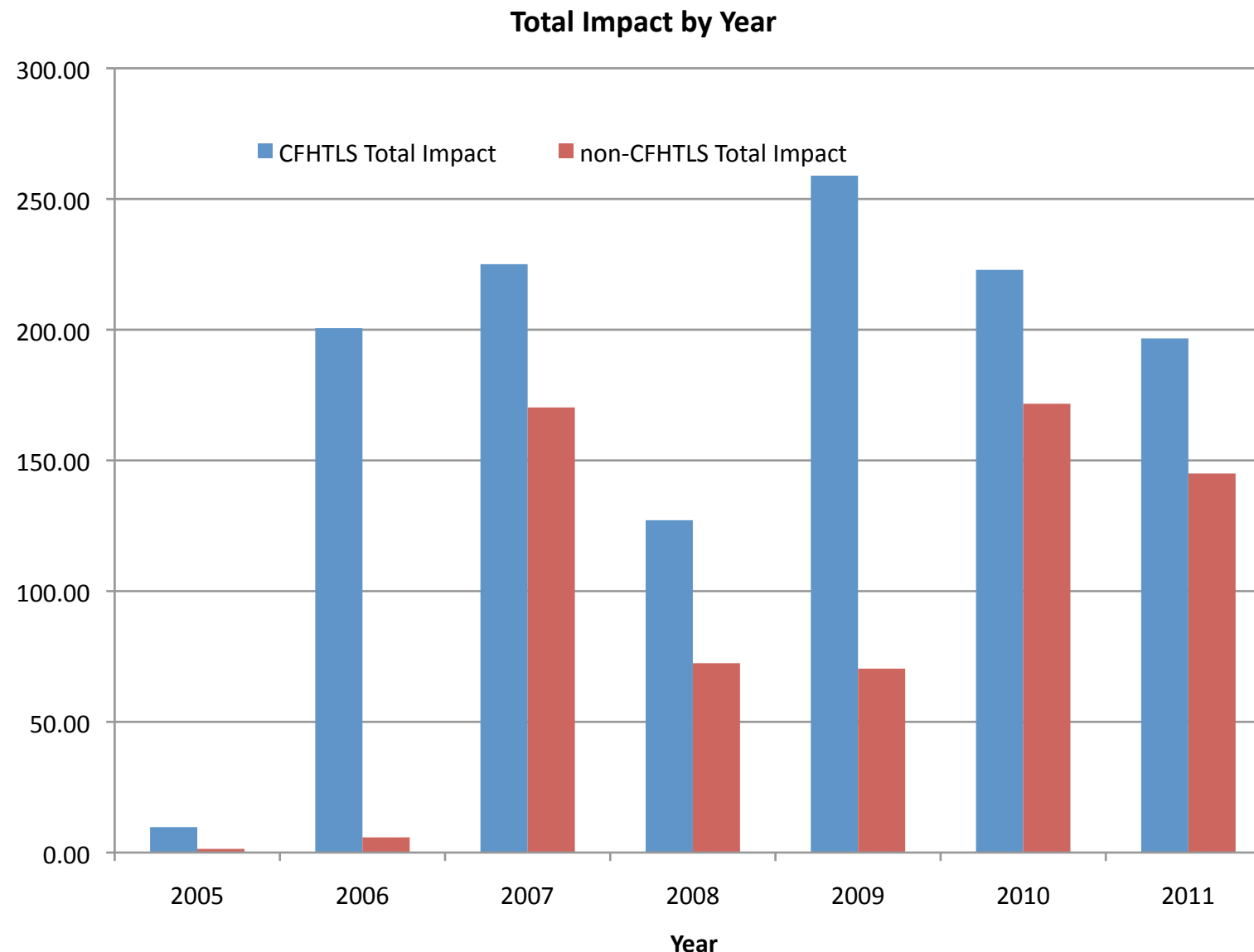
The CFHTLS : Science Drivers

- SNLS:
 - Super Nova searches: Cadence, Area, Depth and IQ of a single epoch in g, r, i, z
- Deep:
 - Galaxy Evolution: Depth of u^* / wr to other stacks
- Wide:
 - Weak Lensing: Depth, IQ, Area of fields, Number of fields
 - Cluster Science: Depth, Area
 - Stellar Populations: 2 epoch in r
- Very Wide:
 - Solar System Science : Depth and Area
- Plus Other Legacy Science

CFHTLS Success: the bibliometrics

- Data gathered by Dennis Crabtree (NRC Herzberg)
 - Citation counts grow as paper ages:
 - Peak citation counts 2-3 years after publication.
 - Standardized impact metric, to allow for comparison of papers of different ages
 - Uses the median citation count of AJ papers for a given year as standard rod.
 - Impact : ratio of the citations of a paper to the median number of citations of AJ papers for the same year.

CFHTLS Success: the bibliometrics



- from Dennis Crabtree. The first generation of LP is has not yet fully kicked in.

The CFHTLS: a brief history

- Dec 1996: Proposal of having Megacam at CFHT
- Aug 1999: Call for ideas of surveys with Megacam
- Oct 1999: Megacam Survey Working Group created by SAC / BoD
- Oct 2001: Proposal to SAC for a 525 nights / 3 components survey
- Dec 2001: BoD endorse CFHTLS at 50% of dark and grey time of C and F agencies

The CFHTLS: a brief history

- Dec 2001: BoD endorse CFHTLS at 50% of dark and grey time of C and F agencies
- May 2002: "final" design of the CFHTLS:

Recommendation #8

SAC strongly recommends that each component of the CFHTLS now be allocated the number of nights requested in the CFHTLS Steering Group report. This includes 94, 162, and 194 nights for the Very Wide, Wide, and Deep Surveys with seeing better than 0.9", and an additional 16 and 8 nights for the Very Wide and Deep Surveys respectively with seeing worse than 0.9". The total of 450 nights with seeing better than 0.9", is within the limits previously set by the BoD. Final decision on the choice of filters and best observing strategy should be produced soon by the Steering Group.

- These numbers assume an efficiency of 6.5 hrs/night of data...

The CFHTLS: a brief history

- 2003B: data acquisition starts.
 - Efficiency is lower than expected, ~ 5.5 hrs / night
 - IQ is worse than expected, so that the SG slows down the Wide (WL science) in order to wait for improvements.
- Nov 2004: WFC's L3 lens flipped upside down, "spectacular IQ improvement"
- Nov 2005: SAC terminates Very Wide discoveries
- 2006: first major scientific output
 - Astier et al. , SNLS on first year of data.
 - Semboloni et al. , first cosmic shear analysis.
 - Ilbert et al., photo-z in the Deep stacks

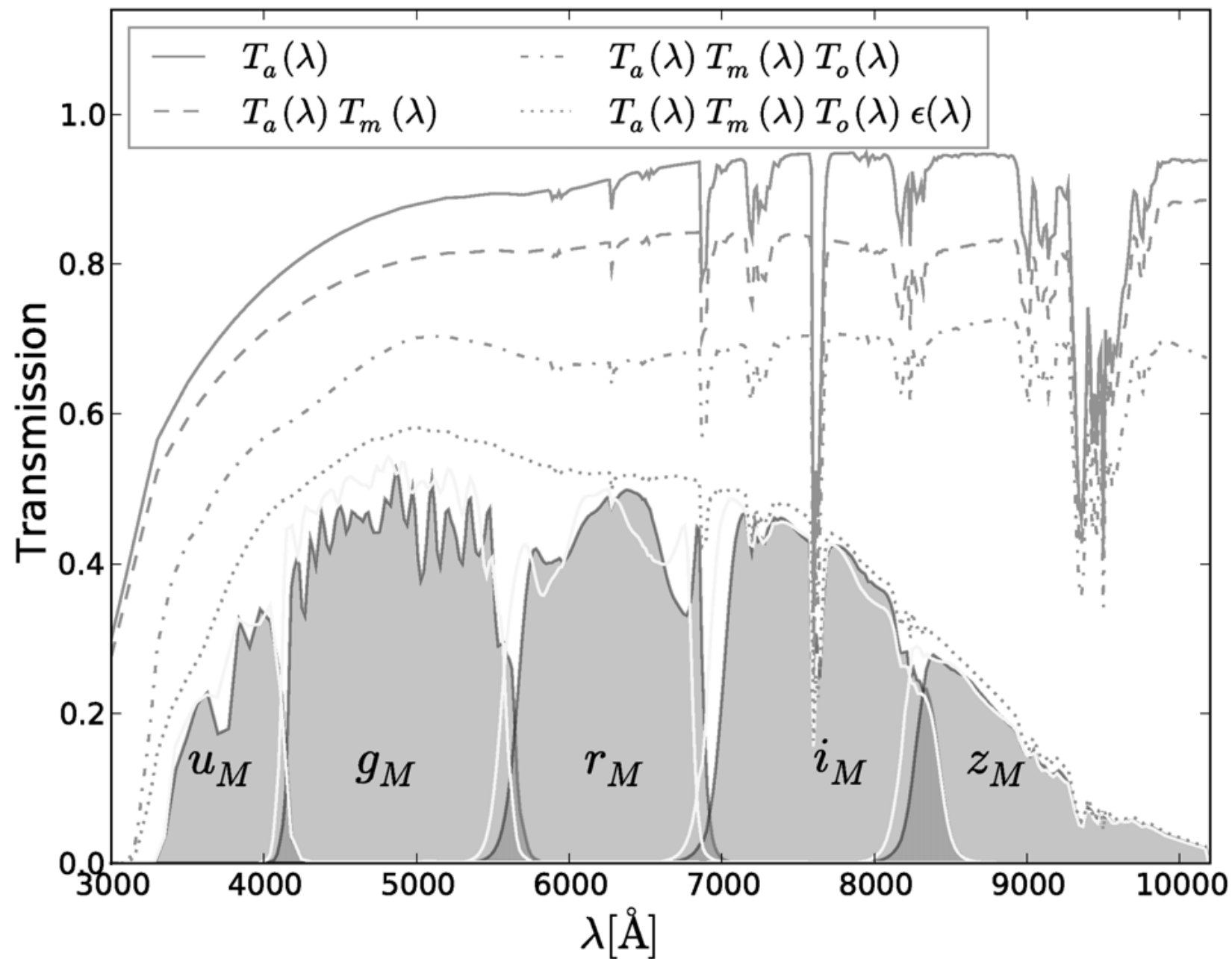
The CFHTLS: a brief history

- 2008A : nominal end of the data acquisition
- 2008B : final patching of the Wide.
- 2009:
 - T006 data release
 - Coupon et al. photo-z on the CFHTLS-Wide
- 2010: SNLS 3 yr (Guy et al.)
- 2012: Final T007 data release
- 2013: CFHTLenS analysis of the Wide.

CFHTLS : a Legacy survey

- The CFHTLS has enabled much more science than its core programs, and has triggered new followup observations of its fields.
 - e.g. QSO and BD searches in the CFHTLS Very Wide (Willot et al. 2010, Delorme et al. 2008)
 - CFHTQSIR LP on the Wide fields
 - VIPERS spectroscopic survey at ESO
 - XXL field on the W1 field.
 - etc...

CFHTLS: instrument calibration



Regnault et al. (2009, A&A 506, 999)

Hurdles toward a new Megacam LS

- **Megacam is not a new instrument ?**
 - The case has to be made that with the dome venting and the new filters making use of the full focal plane, Megacam can be considered as a new instrument. However, it is not anymore far ahead of any other existing capabilities as it was in 2003.
- **New instruments are arriving at CFHT:**
 - Sitelle has not arrived in time to meet the 2014 LP call, due to some vibration problems.
 - Spirou just passed its FDR and is scheduled to arrive in 2017.

Hurdles toward a new Megacam LS

- What will be the route to select large programs at CFHT ?
 - LP mode: call for proposals. The proposals are ranked and the top ones filling the available amount of time are selected.
 - LS mode: call for ideas, then merging of these ideas into a possible multicomponent survey.
 - SAC has not committed to route yet. It is time to lobby your SAC representatives
- Two communities with different interests.
 - Little interest for Euclid in the Canadian community
 - Some interest for MS-DESI.
 - Interest for narrow-band surveys.

Hurdles toward a new Megacam LS

- How much time is needed ? How much is available ? PI pressure ?
 - Pressure on LPs and PIs time is about ~ 2.
 - The F share of CFHT is ~ 57 nights a semester.
 - France sells ~ 2-5 nights a semester to OPTICON and other associates
 - Factor in a Spirou type legacy for 25 nights a semester in bright time, this leaves 32 nights / semester, or 320 nights of french time over 5 years.
 - Hard to see how a 500+ nights survey fully NSLS (no narrow band component) can be made to happen.

Concluding remarks

- Heed the CFHTLS lessons. Don't plan a survey using efficiencies above 5.5 hrs/night !
- Remember that for SAC, the driver is science, seen from CFHT, not from Euclid (at least for the non-F members)
- Now is time to petition your SAC and BoD representatives !
- Euclid should keep its options for the Northern Cap coverage open...