Canada-France-Hawaii Telescope

Sharing information…

Christian Veillet

What are we?

Who do we serve?

What do we offer?

What is going on?

What do we cost? Is it worth it?

Where do we go?

What are we?

- A private Corporation (State of Hawaii)
- A tripartite agreement

  C, F and H

-50 people (including 8 astronomers)

- An exemplary *ménage à trois* easy to reconfigure

- A 3.6-m wide-field telescope on Mauna Kea

Who do we serve?

- Canada, France and Hawaii

- Taiwan (ASIAA) since 2002 - renewed up to 2010B - easily extended
- Brazil (LNA) starting in 2009B
- From 10 to 15 nights a year for each.

- Europe through OPTICON, but…

What do we offer?

- Three main instruments
  - MegaCam/MegaPrime (1degx1deg – 0.18”/pix)
  - WIRCam (20’x20’ – 0.3”/pix)
  - ESPaDOnS (spectropolarimeter – whole spectrum – 70,000)

- Queue mode in service observing (a good idea)
- Pre-processed data delivered to PIs

- Still active in AO

What is going on? (1)

- Just finished the observations for the CFHT Legacy Survey – an amazing success
- Plenty of PI programs, some of them joined
- Four new Large Programs going on [2008B-2012B]

What is going on? (2)

- The Pan-Andromeda Archaeological Survey (PAndAS) - PI McConnachie (MegaPrime, 226hrs)
- The Next Generation Virgo Cluster Survey (NGVS) - PI: Ferrarese (MegaPrime - 770hrs)
- Magnetic Protostars and Planets (MaPP) PI: Donati (ESPaDOnS, 690hrs)
- Magnetism in Massive Stars (MiMeS) - PI: Wade (ESPaDOnS, 640hrs)
- New call for 2010A?

What is going on? (3)

- Moving to remote observing from the headquarters
  - Lower operation cost
  - Better monitoring of the observatory
  - Ready by the end of 2010
- Toward full automation…

  A dream?
- `Ohana & `OHANA-iki
- Test bed for advancements in AO and LGS

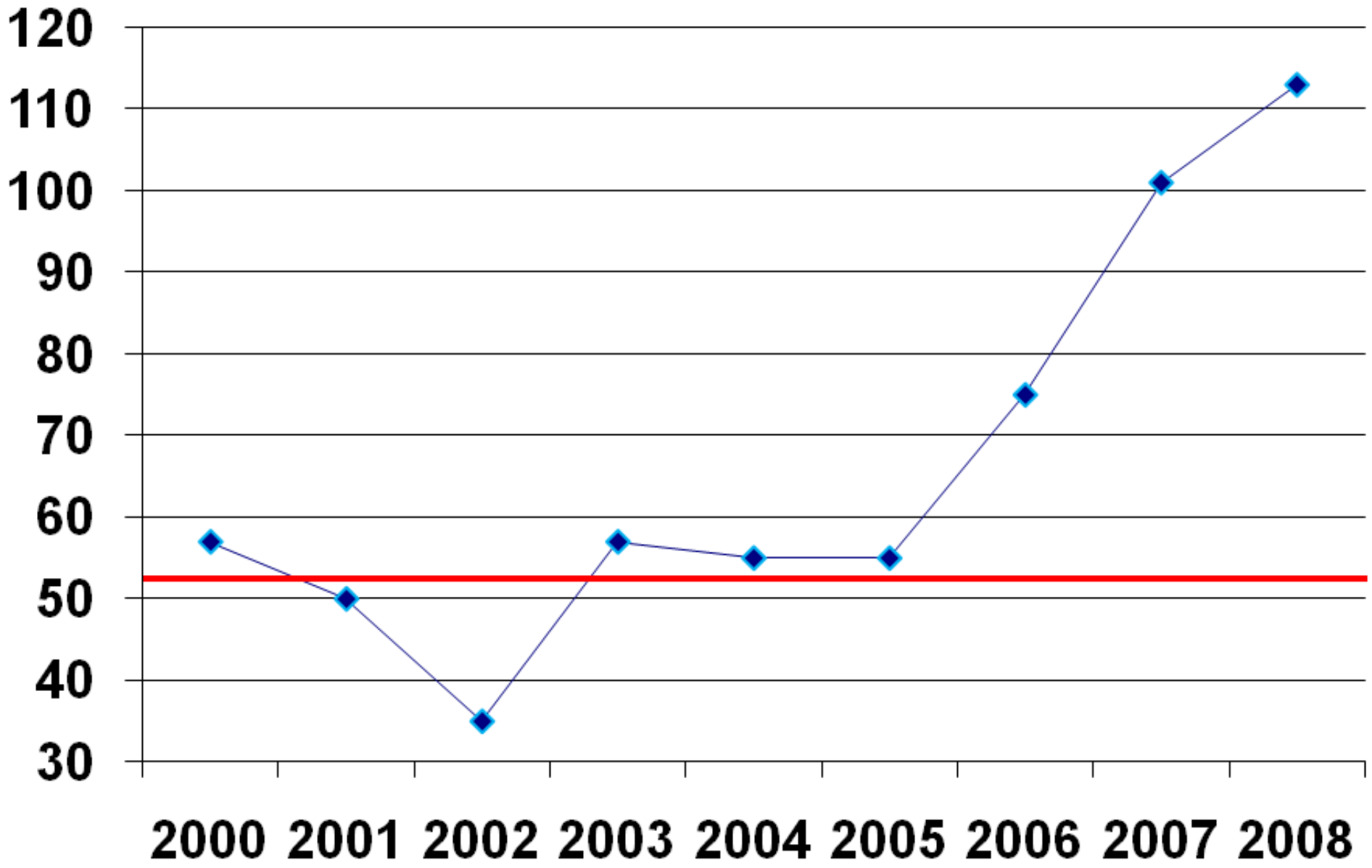
What do we cost? Is it worth it?

~$7.3M/yr

- How do we know if it is worth it?
- SNLS cosmology paper(s)
  - 200 nights at CFHT + at least as many on 8/10-m telescopes + 10-20 FTEs over 5 years = ~$30M
  - They better be highly cited ;)
  - But data used for much more… Good! + grad student work + …

- Metrics? Sure, but difficult to agree on them

Metrics - 1


120
110
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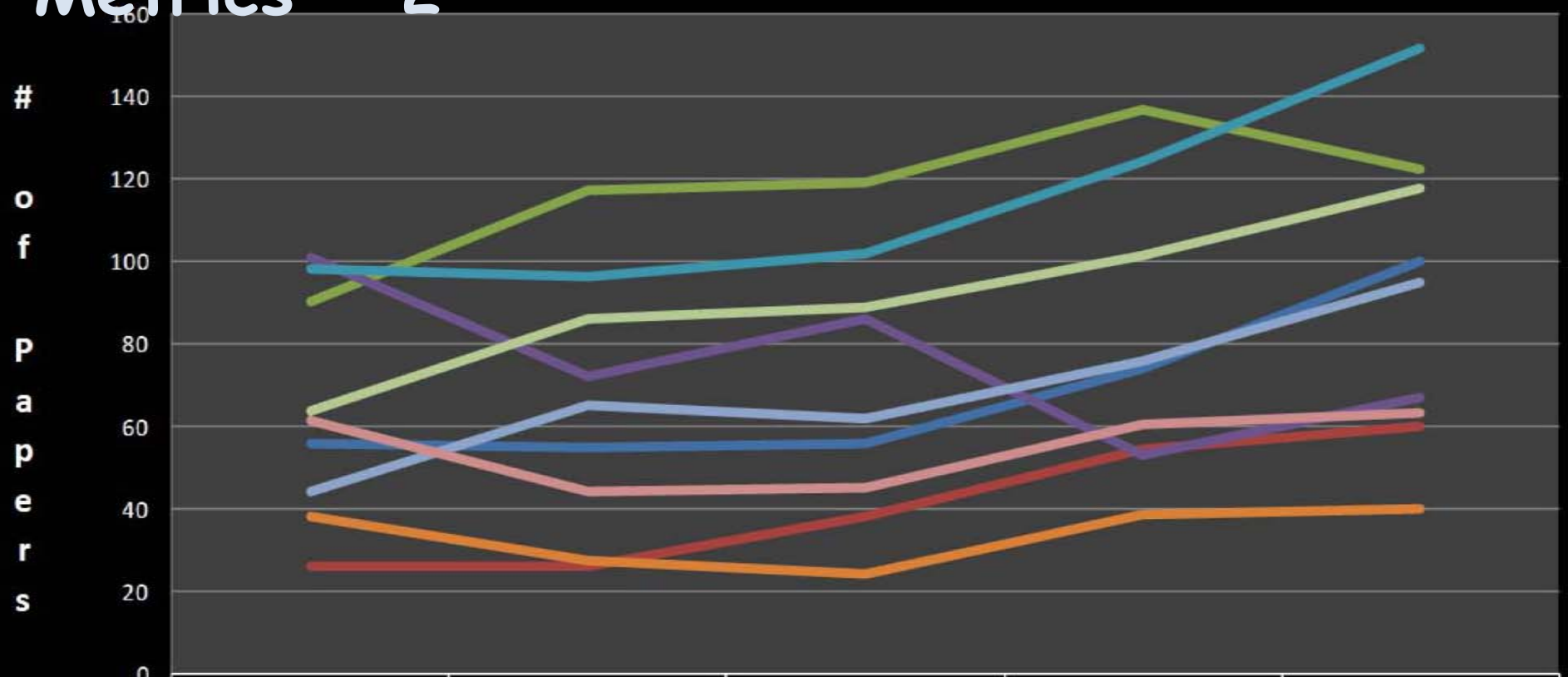
Metrics - 2



	2003	2004	2005	2006	2007
CFHT	56	55	56	74	100
Gemini	26	26	38	54.5	60
HST	90.2	117.2	119	136.8	122.2
JCMT	101	72	86	53	67
Keck	98	96	101.5	124	151.5
Magellan	38	27.5	24	38.5	40
Subaru	44	65	62	76	95
UKIRT	61	44	45	60	63
VLT	63.5	86	88.75	101	117.5

Metrics – 3

highly cited papers from 2006

HIGH-IMPACT OBSERVATORIES

Rank	Facility	Citations	Participation
1	SDSS	1892	14.3%
2	Swift	1523	11.5%
3	HST	1078	8.2%
4	ESO	813	6.1%
5	Keck	572	4.3%
6	CFHT	521	3.9%
7	Spitzer	469	3.5%
8	Chandra	381	2.9%
9	Boomerang	376	2.8%
10	HESS	297	2.2%

Key

SDSS - Sloan Digital Sky Survey
HST – Hubble Space Telescope
ESO – European Southern Observatory
CFHT – Canada France Hawaii Telescope
HESS - High Energy Stereoscopic System

Metrics – 4

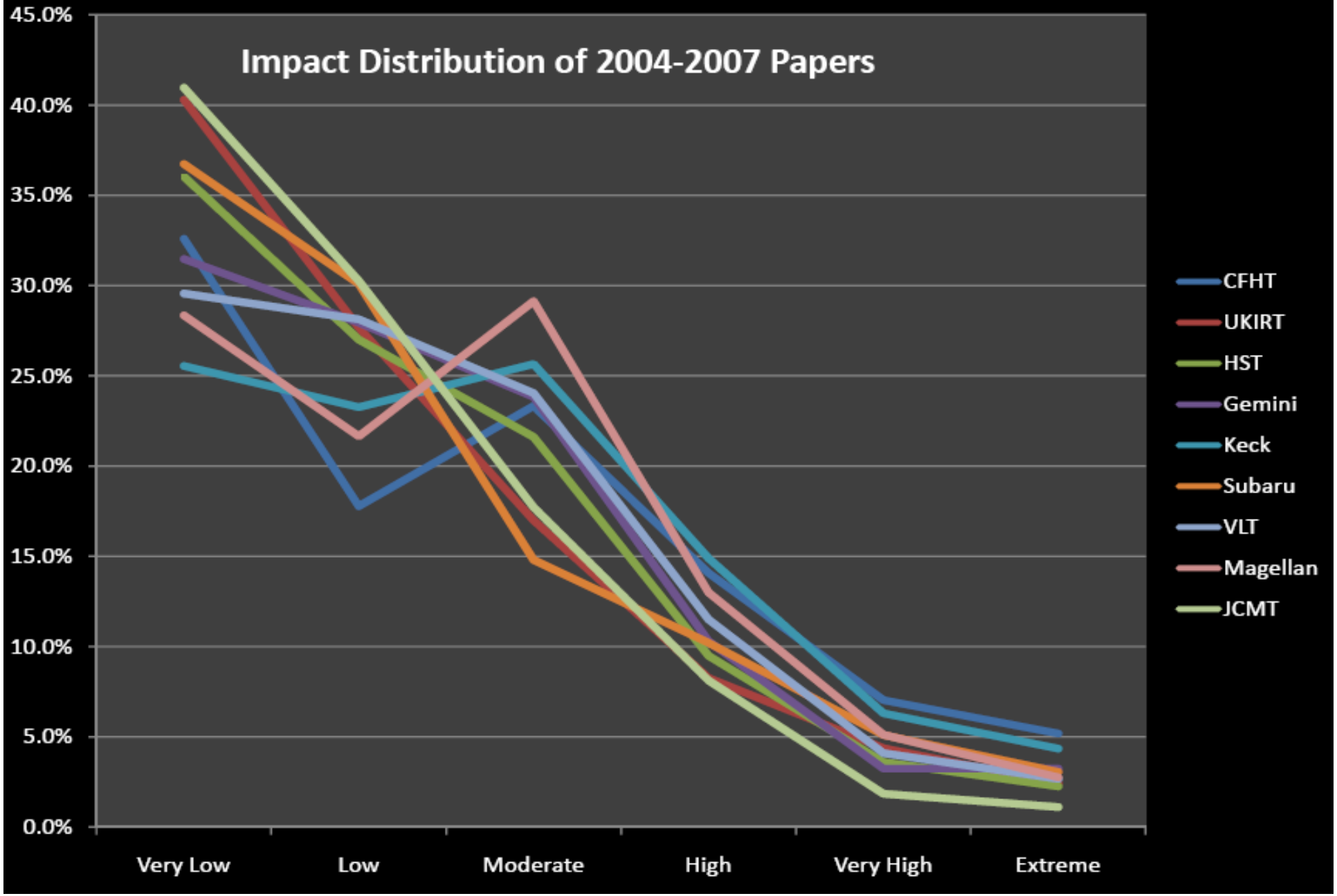
Impact over 2004-2007

- Divide impact into 6 bins

Name	Impact Range
Very Low	0 - 1
Low	1 - 2
Moderate	2 - 4
High	4 - 7
Very High	7 - 11
Extreme	> 11

- A flatter IDF indicates better performance

Metrics - 4


Impact Distribution of 2004-2007 Papers
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Very Low
Low
Moderate
High
Very High
Extreme
CFHT
UKIRT
HST
Gemini
Keck
Subaru
VLT
Magellan
JCMT

Where do we go?

Call for new instruments

- SPIRou going into CoDR-PDR (2014)

  (very stable ESPaDOnS in the IR)

- `IMAKA: A wide-field imager with GLAO correction (2015/16?)

  key challenges under study (optics, GLAO at the telescope, simulations)

- Interest for

  - wide-field multi-object spectroscopy (MegaMOS)
  - High dynamics high resolution AO (FIRST)
  - wide-field FTS (SITELLE)

Where do we go?

- Big pressure for u observations (PanSTARRS & HyperSuprimeCam, likely Dark Energy Survey too)
  - Improve MegaCam for u observations?
- CFHT unique place for redevelopment on MaunaKea
  - A dedicated wide-field 8m for MOS? (depending on WFMOS)
  - …
- INSU prospective this year
- NRC Long Range Plan 2009-2010
- European Roadmap WG…
- Part of the US network?

2009

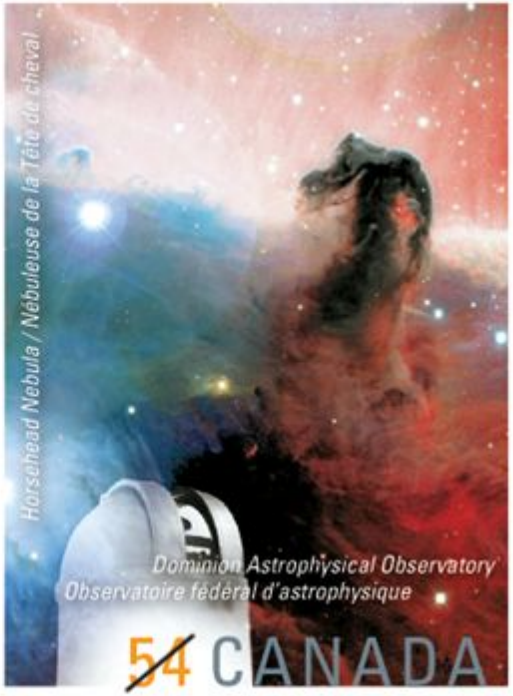
A very special year…

CFHT will celebrate…
its 30th Birthday!

Carina Nebula | The Caterpillar
Nébuleuse de la Carène | La Chenille

Horsehead Nebula, Eagle Nebula >
Canada-France-Hawaii Telescope and Cœlum |
Nébuleuse de la Tête de cheval, Nébuleuse de l'Aigle >
Télescope Canada-France-Hawaï et Cœlum
Carina Nebula | Nébuleuse de la Carène > NASA

Lowe-Ma
Design > Keith Ma



2009
International Year of Astronomy
Année mondiale de l'astronomie

C

CFHT Contact

- Welcome
- Video (Flash)
- Video (QuickTime)
- Images
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- DVD Features
- Buy the DVD
- Production Notes
- Soundtrack
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- Year of Astronomy
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- Image of the Month

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Hawaiian Starlight

Exploring the Universe from Mauna Kea

OWN THE FILM ON DVD

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The summit of Mauna Kea (14,000 feet) offers the best viewing of the Cosmos in the northern hemisphere, and this film delivers a pure esthetic experience from the mountain into the Universe. Seven years in the making, this cinematic symphony reveals the spectacular beauty of the mountain and its connection to the Cosmos through the magical influence of time-lapse cinematography scored exclusively with the awe-inspiring, critically acclaimed, Halo music by Martin O'Donnell and Michael Salvatori. Daytime and nighttime landscapes and