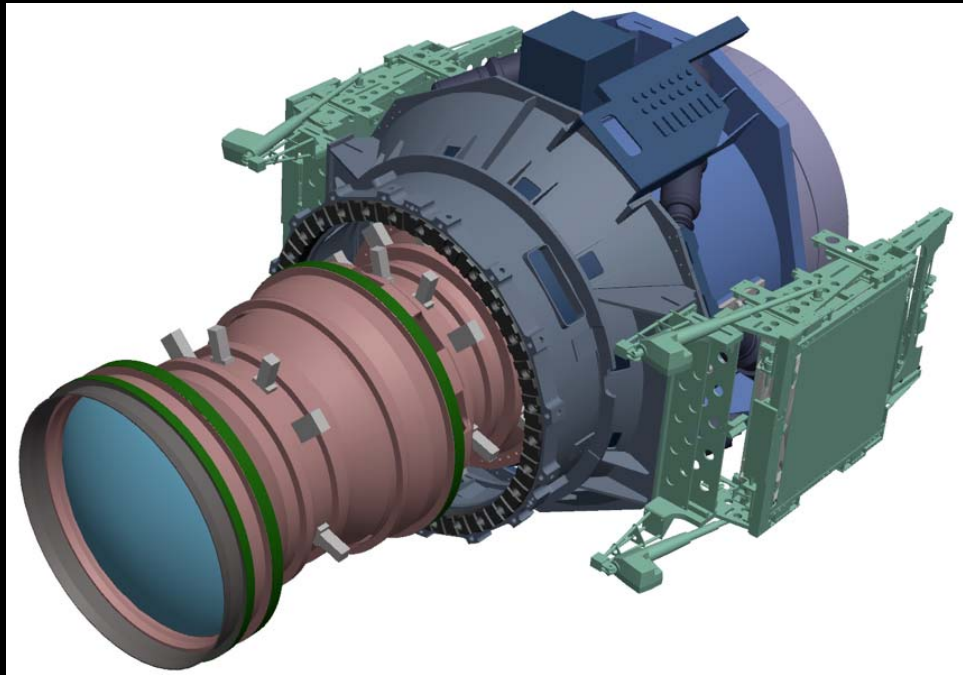


HSC: Subaru collaboration with Taiwan and Princeton



Yasushi Suto

Department of Physics, The University of Tokyo

Subaru User's Meeting on January 14 , 2010
National Astronomical Observatory, Japan

Unknown history of HSC (1)

- From: aihara <aihara@phys.s.u-tokyo.ac.jp>
 - *Date: Tue, 16 Mar 2004 14:32:54 +0900*
 - Large Synoptic Survey Telescope (LSST) project
というのをご存知ですか？SNAP もそうですが、LSST
のカメラは高エネルギー屋さんがやっています。きよ
う、Steve Kahn (ご存じかどうか知りませんが)と話し
て、もし、私が入る気ならば、日本のastronomerにも
声をかけたらどうかと言われました
- From: Yasushi Suto <suto@phys.s.u-tokyo.ac.jp>
 - *Date: Tue, 16 Mar 2004 15:04:03 +0900 (JST)*
 - 重力レンズ関係で、日本でもっとも興味をもちそうな
のは、宮崎さん(釜江研出身！)@すばる観測所で
すね。

Unknown history of HSC (2)

- From: Satoshi Miyazaki <satoshi@anela.mtk.nao.ac.jp>
 - *Date: Sun, 21 Mar 2004 18:31:27 -1000*
 - 相原様 ご無沙汰しております、釜江研でお世話になっていた宮崎です。今、天文学会に出るために名古屋大学に来ていますが、そこで東大の須藤さんとお会いして、相原さんがLSSTに興味をお持ちだと聞きました。これまでに、私たちのグループではすばる用のSuprime-Camというカメラを作り実際にWeak Lensing Surveyをはじめています。より広い視野のカメラを求めて、技術検討を始めました。これはすばる用のカメラのため、実はLSSTは我々のライバルとなります。相原さんが広視野の望遠鏡に興味をお持ちと聞き、何か一緒に仕事をさせていただけないかと、メールさせていただきました。いつかお時間のある時にお話を聞いていただけないでしょうか？

Unknown history of HSC (3)

- From: Satoshi Miyazaki <satoshi@anela.mtk.nao.ac.jp>
 - *Date: Wed, 31 Mar 2004 14:16:36 -1000*
 - 須藤様 3/25に相原さんと釜江さんに行って話を聞いてきました。釜江さんはLSSTに関しては今から入って行っても、ただの下働きになってしまうからやめたほうがよいという意見を言っていました。そのふたりの話が一段落した後、「私はHyperSuprimeというLSSTを打ち負かすことができる計画を持っています」と、我々のSuprime-Camアップグレード計画を紹介したところ、釜江さんや相原さんは非常に興味を持ってくれました。相原さんは「15億円の科研費を出すのだ」と言い始めました。この先どうなるか分かりませんが、須藤さんから教えていただいた情報により、いろいろ可能性が開けてきました。

Japan-Princeton collaboration: started by a message from Ed Turner

- Fri, 28 Jul 2006 23:07:03 -0400 (EDT)
- *Ed Turner wrote Dear Yasushi,*
 - It is of much more direct interest to me than it was when we talked in June. The reason is that in Princeton we have recently had some discussions about the possibility of approaching you (Subaru) re the possibility of some type of collaboration or joint project or perhaps a pair of projects.

My reply to Ed Turner

- Mon, 31 Jul 2006 07:43:52 +0900 (JST)
- *Dear Ed,* ... In case you are interested in proceeding a bit further, I am happy to approach several people very informally at this point to see their personal feeling.
- I understand that the possibility would involve many uncertainties in both sides and thus be fairly unpredictable, but I believe it is really worthwhile to explore more.

NAOJ (National Astronomical Observatory of Japan) - Princeton collaboration on Subaru telescope

- Informal discussion between **Ed Turner** and me started on July 28, 2006
- Conference at Univ. of Tokyo on Nov.9 &10, 2006
- Important dinner on Dec. 19, 2006
- **MOU between NAOJ & Princeton on Jan. 18, 2009**



<http://www.princeton.edu/main/news/archive/S23/18/84046/>

“Astronomers from Princeton and Japan unite to explore the universe, near and far”

- Scientists from **Princeton University** and the **National Astronomical Observatory of Japan (NAOJ)** have agreed to collaborate over the next 10 years, using new instrumentation on **the Hawaii-based Subaru Telescope** to peer into hidden corners of the nearby universe and ferret out secrets from its distant past.

International Research Network for Dark Energy (JSPS, core-to-core program 2007-2012)

DENET

Princeton U.
Dept. of
Astrophys. Sci.
coordinator
Edwin Turner

CMB
Gravitational lens
Baryon oscillation

Edinburgh U.
Royal Obs.
coordinator
John Peacock

Univ. of Tokyo
Res. Center for the
Early Universe
coordinator
Yasushi Suto

Tohoku
Univ.

NAOJ

Hiroshima
Univ.

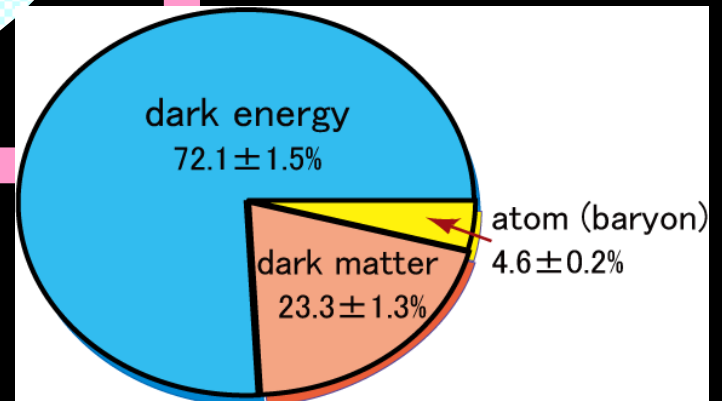
Kyoto
Univ.

Nagoya
Univ.

**Institut
d'Astrophysique
de Paris**
coordinator
Jerome Martin

Modified gravity
Extra-dimension
backreaction

Theoretical model
Baryon oscillation
Weak lens mapping



DENET and Princeton joint conference:
*Science Opportunities with Wide-Field Imaging
and Spectroscopy of the Distant Universe*
November 9-11, 2010@Princeton Univ.

<http://www.astro.princeton.edu/astroevents/widefieldsurveys/program.php>

28 Japanese participants supported by DENET

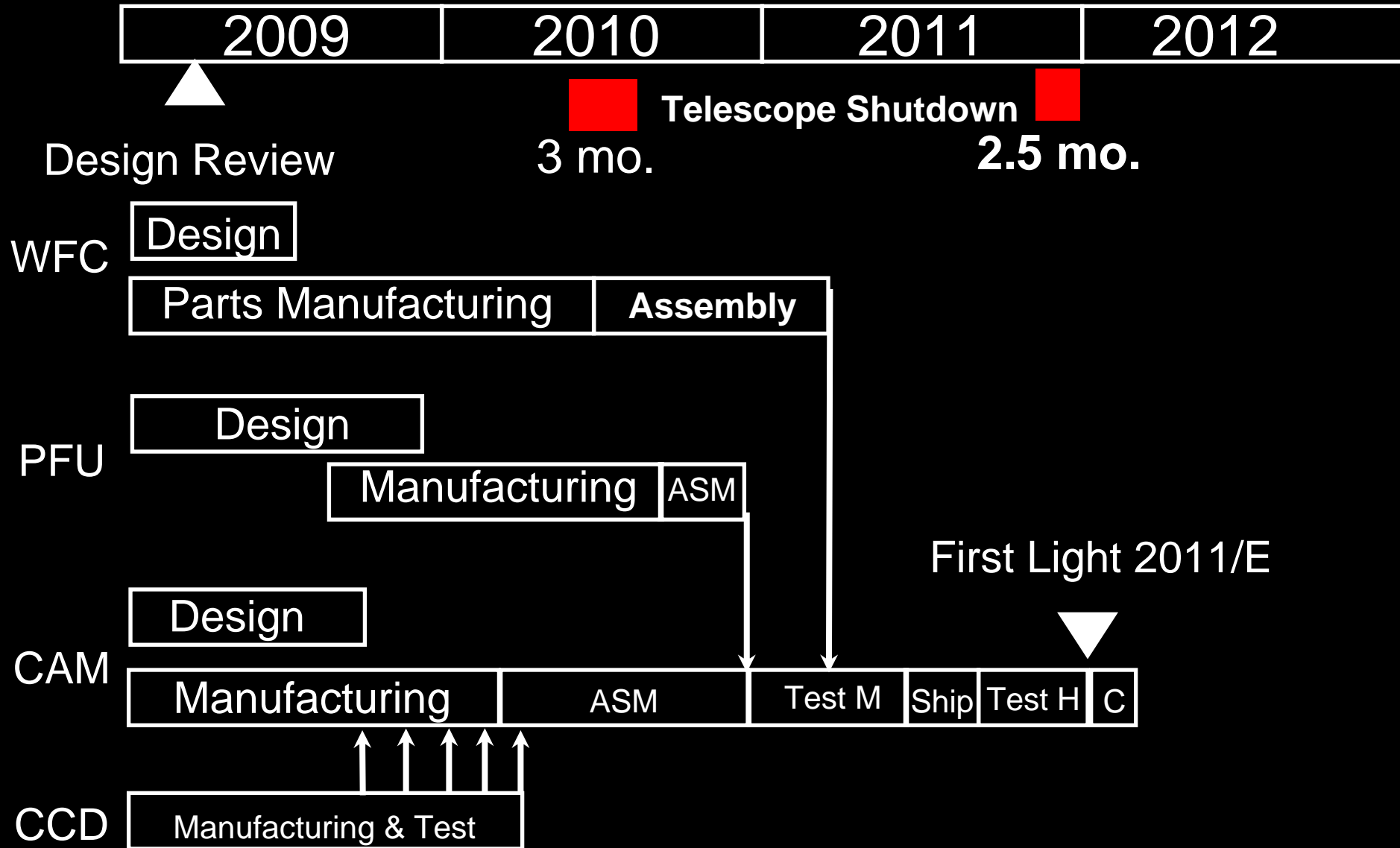


HSC collaboration meeting

Nov. 11 & 12, 2010 @ Princeton



HSC Schedule (from S.Miyazaki)



HSC Project Status (from S.Miyazaki)

Design completed
by 2009/11

 Risk

1. Camera Mechanics
2. PFU Mechanics
3. Optics
 - Wide field Corrector
 - Filter
4. Sensor
 - CCD
 - Readout electronics
5. Data Management
6. Project Management
 - Schedule
 - Budget

95 %

85 %

95 %

90 %

95 %

90 %

45 %



HSC Collaboration Policy

(draft by Y.S and M.Strauss)

- **HSC organization**
 - Advisory council
 - survey committee
 - Working groups
- **HSC collaborator status**
 - Survey participants
 - Survey builders
 - Continuing collaborators
 - External collaborators
- **Science policies**
 - Key projects
 - Project announcement
- **Publication policies**
 - authorship

HSC organization structure

**N-PAC
council**

PI

H.Karajii

HSC Survey Committee

M.Chiba, J.Gunn,
M.Ouchi, K.Shimasaku,
M.Strauss, M.Takada,
K.Umetsu

Advisory Council

H.Aihara, P.Ho,
H.Murayama,
D.Spergel, Y.Suto,
E.Turner

**Working
group 1**

**Working
group 2**

**Working
group 3**

.....

**Working
group 12**

HSC collaborators (Japan, Taiwan, Princeton)

Three main HSC surveys proposed

- Wide
 - M.Takada
- Deep
 - K.Shimasaku
- Ultra-deep
 - M.Ouchi
- Survey Design General
 - M.Strauss

HSC working groups

working group	chair	vice-chair
Galactic Evolution	Gunn	
AGN	Nagao	Strauss
Weak Lensing	Takada	Hamana
Galactic Structure	Chiba	
Solar System	Yoshida	
Variables & transients	Morokuma	
Very high redshift	Ouchi	Shimasaku
Clusters	Lin	Oguri
Supernovae	Yasuda	
Photometric Calibration	Gunn	Furusawa
Hardware	Miyazaki	
Software & Data Distribution	Lupton	Furusawa

We have to avoid this kind of fight among HSC collaborators



**Princeton-DENET
conference dinner at
“Triumph” on Nov. 10, 2009**