

# DENET and Sumire collaboration



Institute of Astronomy and Astrophysics  
中央研究院 天文及天文物理研究所

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JSPS (Japan Society of Promotion of Science)  
core-to-core program DENET & HSC grant

**DENET 2011 Subaru HSC Workshop**

March 7 & 8, 2011

ASIAA Auditorium, Astronomy-Mathematics Building

# Purpose of the meeting

- A series of HSC collaboration meeting in Japan in March every year
- For the first time outside Japan
  - ASIAA is an important partner for Subaru international collaboration
  - A wonderful opportunity for Japanese and Taiwanese collaborators to get to know each other
  - An equally wonderful opportunity for Japanese to enjoy authentic Chinese/Taiwanese food

# 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.

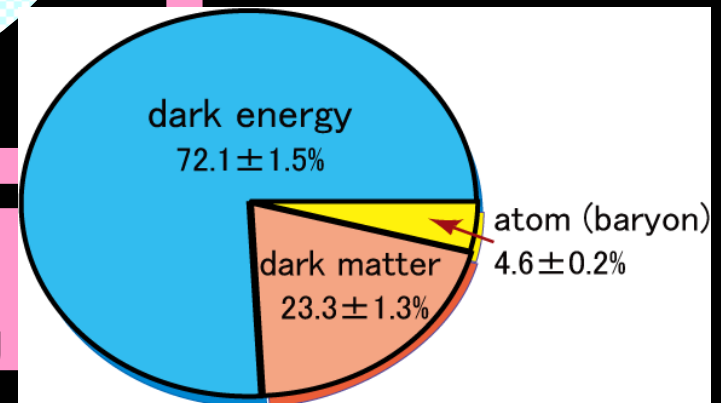
Kyoto  
Univ.

Nagoya  
Univ.

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

Modified gravity  
Extra-dimension  
backreaction

Theoretical model  
Baryon oscillation  
Weak lens mapping



# Decrypting the Universe

## Large Surveys for Cosmology

### *Invited Speakers*

D. Spergel  
S. Cole  
E. Copeland  
M. Doi  
A. Helmi  
O. Lahav  
R. Maartens  
Y. Mellier  
S. Miyazaki  
A. Murphy  
M. Takada  
T. Yamada

**24<sup>th</sup>-26<sup>th</sup> October 2007**

**Edinburgh, Scotland**

Joint Royal Observatory Edinburgh / JSPS  
Core-to-Core Program Workshop

[www.roe.ac.uk/roe/workshop/2007](http://www.roe.ac.uk/roe/workshop/2007)

**Royal  
Observatory  
Edinburgh  
Scotland**

### *Local Organising Committee*

A. Heavens  
R. Ivison  
A. Nicol  
P. Norberg (Chair)  
P. Simon  
F. Simpson  
A. Taylor



Science & Technology Facilities Council  
UK Astronomy Technology Centre







# COSMOLOGY NEAR & FAR: SCIENCE WITH WFMOS

May 19-21, 2008 @Marriot, Kona, Hawaii





**DENET and Princeton joint conference:**  
*Science Opportunities  
with Wide-Field Imaging and  
Spectroscopy of the Distant Universe*  
**November 9-11, 2009@Princeton Univ.**





**DENET-Caltech conference:**  
**The Observational Pursuit of Dark**  
**Energy after Astro2010**  
**October 7-9, 2010@Cahill Center for**  
**Astronomy and Astrophysics, Caltech**



# Subaru survey project: SuMIRe

**Subaru** **M**easurement of **I**maging and **R**edshift of the universe

- **PI: Hitoshi Murayama** (director of IPMU, U. of Tokyo & UC Berkeley, LBL)
  - Japanese Institutes in charge: IPMU, The University of Tokyo, NAOJ +
- **Imaging survey with HSC** (Hyper-Suprime Cam)
  - Japan + Princeton + ASIAA
- **Spectroscopic survey with PFS** (Prime Focus Spectrograph)
  - Japan + Princeton + ASIAA + Caltech/JPL + Brazil + France +
  - Various international collaboration scheme is under discussion (stay tuned to the talk by Karoji)



# SuMlRe is pronounced as S-me-lé

- Don't pronounce SUMlRE as Smile
  - l = 【i】 ≠ 【ai】
  - E = 【e】 ≠ silent
- Don't care whether R or L
  - “R=L” is the most well-known identity in Japanese



Japanese: Sumire (すみれ)

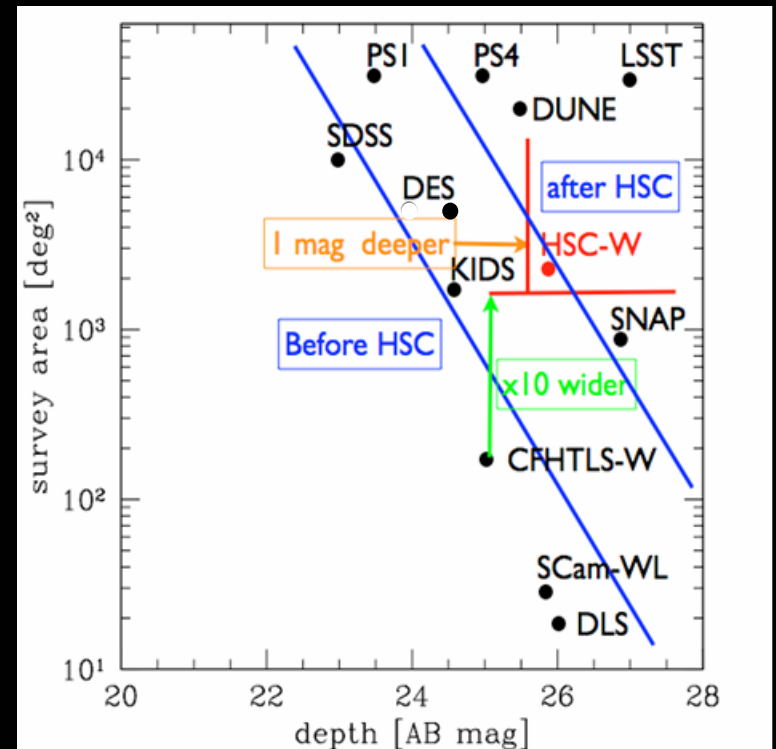
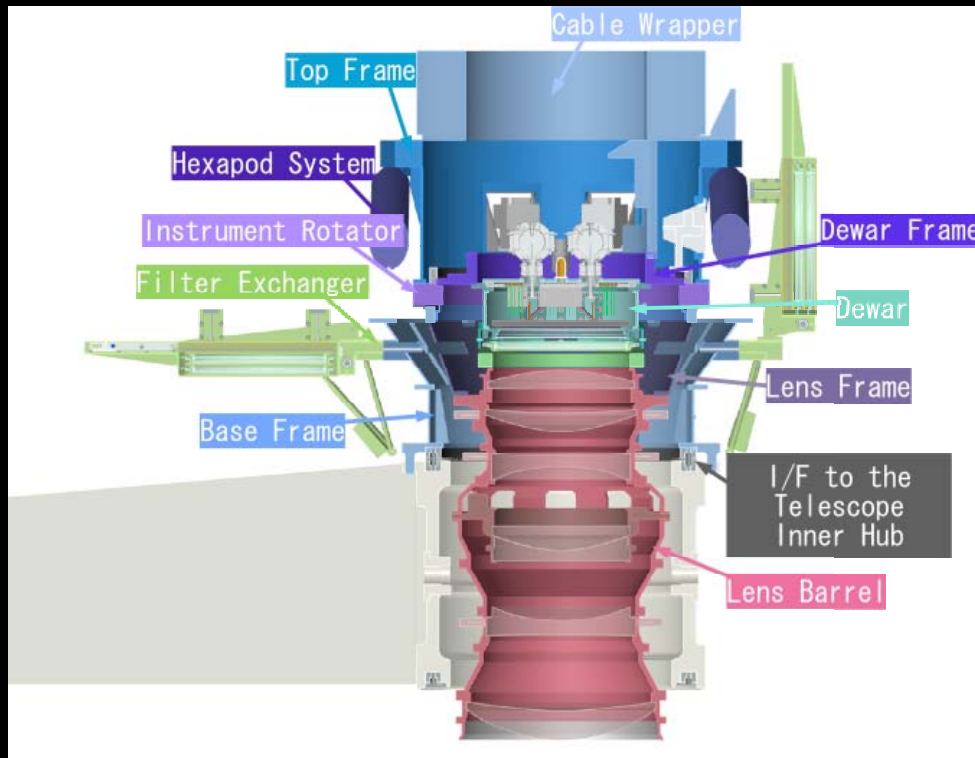
Chinese: 堇

English: violet (more  
specifically, Viola  
mandshurica)

# HSC: Hyper-Suprime Cam

## ■ Japan+Princeton+ASIAA (2012-2016)

- Imaging galaxy survey (1.5deg FOV)  $g,r,i,z,Y$
- 200 nights for 1500 deg<sup>2</sup> wide survey for weak lensing
- 100 nights for deep/ultra-deep surveys of galaxies



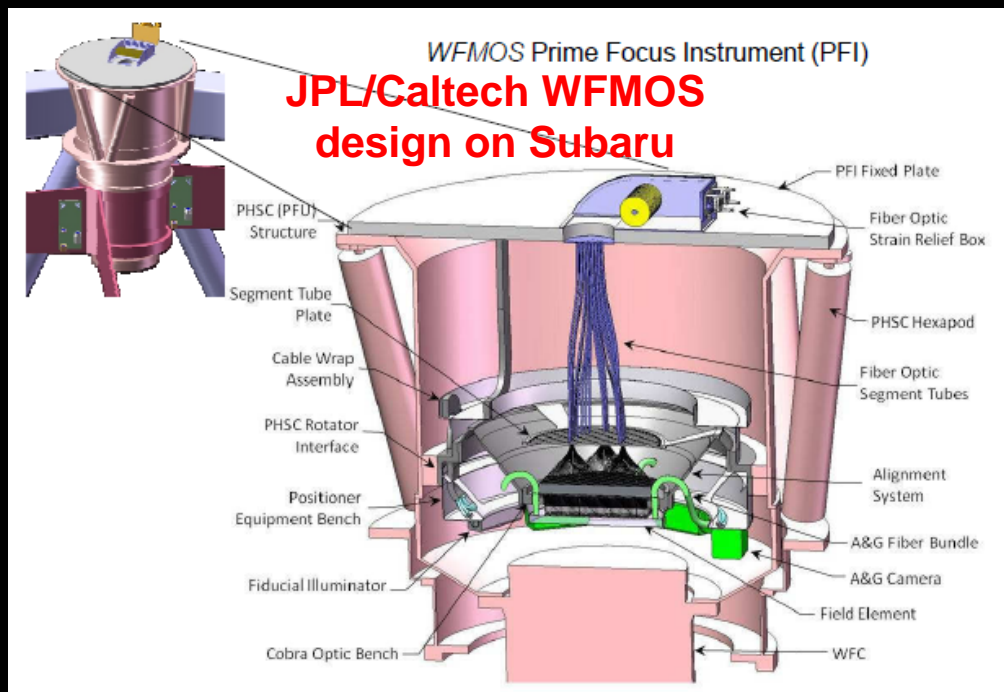
Presented at DENET-Princeton conference (2009) by Satoshi Miyazaki (NAOJ)



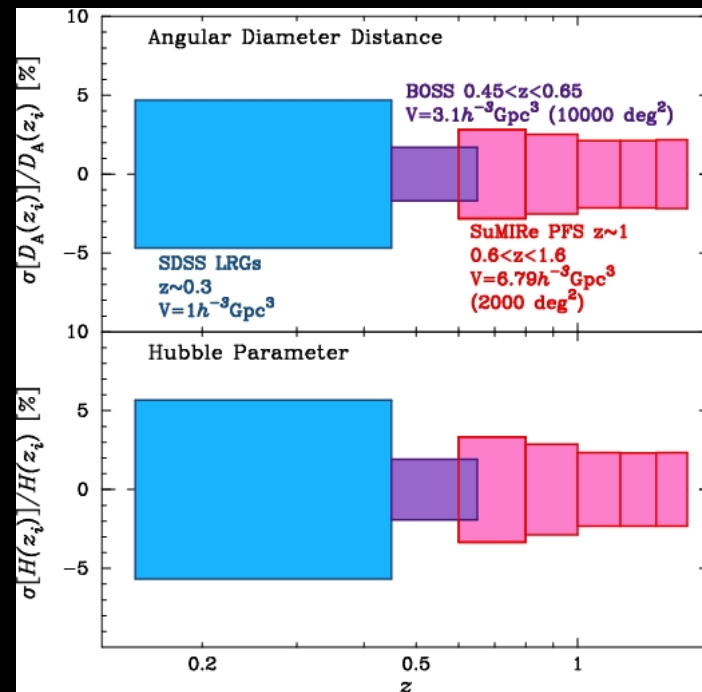
# PFS: Prime Focus Spectrograph

## ■ Japan+??? (2016-2020 ???), ex-WFMOS

- Spectroscopic galaxy survey (1.3deg FOV)
- 2500 fibers, 10000 galaxy redshifts a night
- BAO, galactic evolution, Galactic archaeology



presented at DENET summer school (2009)  
by Mike Seiffert (JPL/Caltech)



Courtesy of  
Masahiro Takada (IPMU)

# DENET-IAP conference on dark energy in the universe

- October 24-26, 2011 at IAP (Institut d'Astrophysique de Paris)
- DENET final international conference and part of activity “Todai (University of Tokyo)-Forum at Paris in 2011”
- LOCs: Jerome Martin, Stephane Colombi, Thierry Sousbie
- Further information will be announced later



# Thanks and enjoy the workshop !

- Many thanks for the wonderful organization by people at ASIAA, in particular, Cindy Chiu, Suh-Lian Lin, Yen-Ting Lin, Hiroaki Nishioka, Nobuhiro Okabe, and Keiichi Umetsu.
- 謝謝 !