

**JSPS Core-to-Core Program**  
**FY2010 Implementation Plan (Project No. : 19001)**

Research Theme International Research Network for Dark Energy  
 Duration of Project April 1, 2009 ~ March 31, 2012 (36 months)  
 Core Institution in Japan (Co-Chair) Graduate School of Science, University of Tokyo  
(Prof. Yasushi Suto)

**Implementing Organizations**

○ **Japan**

Japan	Core Institution	Graduate School of Science, The University of Tokyo	
	Co-Chair (name and title)	Yasushi Suto (professor)	
	Cooperating Institutions	National Astronomical Observatory of Japan, Tohoku University, Nagoya University, Kyoto University, Hiroshima University, Institute of Cosmic Ray Research, Institute of Physics and Mathematics of the Universe	Number of Cooperating Institutions
			7

○ **Partner Countries**

US	Core Institution	Princeton University	
	Co-Chair (name and title)	Edwin Turner (professor)	
	Cooperating Institutions	California Institute of Technology, University of California, Lawrence Berkeley National Laboratory, Fermi National Accelerator Laboratory	Number of Cooperating Institutions
			4

UK	Core Institution	University of Edinburgh, Royal Observatory	
	Co-Chair (name and title)	John Peacock (professor)	
	Cooperating Institutions	Portsmouth University, University College London, Oxford University	Number of Cooperating Institutions
			3

France	Core Institution	Institut d'astrophysique de Paris	
	Co-Chair (name and title)	Jerome Martin (senior researcher)	
	Cooperating Institutions	University 1 in Lyon, Center of Centre de Recherche Astrophysique de Lyon	Number of Cooperating Institutions
			2

## Objectives of Research Exchange (including the five years after the project finishes)

- A) On the basis of the MOU between NAOJ (National Astronomical Observatory of Japan) and Princeton University, we will lead the HSC (Hyper-Supreme Cam) project, and successfully perform the galaxy imaging survey for 5 years after its scheduled first light of 2011.
- B) We will make every effort so that a spectroscopic survey project WFMOS with Subaru telescope is officially approved and can start just after the galaxy imaging survey with HSC.
- C) We will perform the extensive analysis of the galaxy imaging and spectroscopic data with Subaru telescope and probe the nature of dark energy in the universe.

## Results to the present

Our program, DENET (International research network for dark energy research), played a central role in the MOU agreement on the 10 year collaboration of HSC (Hyper-Supreme Cam) project of the Subaru telescope between National Astronomical Observatory Japan (NAOJ) and Princeton University. The official ceremony was carried out on January 16, 2009, and both parties made the press release simultaneously. Indeed the collaboration idea was initiated by the two coordinators of DENET, Yasushi Suto at University of Tokyo and Ed Turner at Princeton University. DENET also significantly contributes to attract young Japanese researchers to work on dark energy both theoretically and observationally.

## Summary of FY 2010 Exchange Plan

### **Joint Research**

Several graduate students and post-docs will visit Princeton University to work together on the fabrication of HSC and the design of its software pipeline. We also work with Caltech and Princeton colleagues on the detailed spectrograph design. We will collaborate with researchers in Edinburgh, University College London, Portsmouth, and IAP on a variety of theoretical approaches to constrain dark energy.

### **Seminar**

DENET/IPMU joint conference "From Massive Galaxy Formation to Dark Energy" at IPMU (2010 June 28-July 2), dark energy summer school at Kochi (2010 August), COSMO/CosPA2010 (2010 September), dark energy conference at Caltech (2010 October).

### **Researcher Exchanges**

About ten young researchers will visit our collaborating institutes and we also invite a similar number of students and post-docs to promote our mutual collaboration.