

Opening address

RESCEU & JSPS core-to-core program Planet²
Summer School

"From the Solar System to the Universe"

August 23-26, 2019@Kakunodate



Core-to-Core Program



東京大学
THE UNIVERSITY OF TOKYO

Yasushi Suto

Department of Physics and RESCEU, The University of Tokyo

Brief history of RESCEU

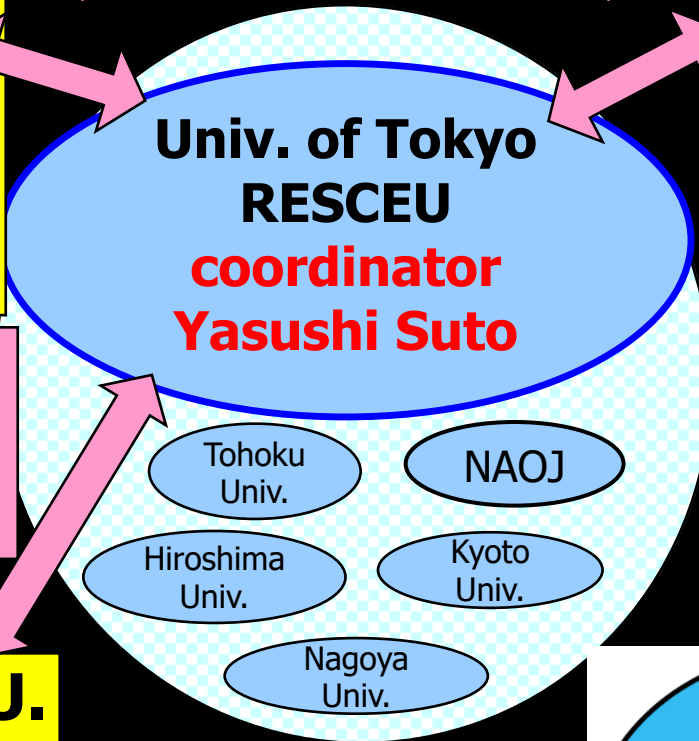
- **1995**: selected as one of the first center-of-excellence programs initiated by Japanese Ministry of Education (PI: Katsuhiko Sato)
- **1999**: officially approved as a research center in the University of Tokyo (2 full professors and 2 associate professors). The first director is Katsuhiko Sato.
- **2019**: 2 full professors, 2 associate professors, 4 assistant professors, 4 project assistant professors
- **Three major research projects**
 - Evolution of the universe and cosmic structures
 - Gravitational-wave astrophysics and experimental gravity
 - Formation and characterization of planetary systems

International Research Network for Dark Energy (JSPS, core-to-core program 2007-2011)

DENET

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

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

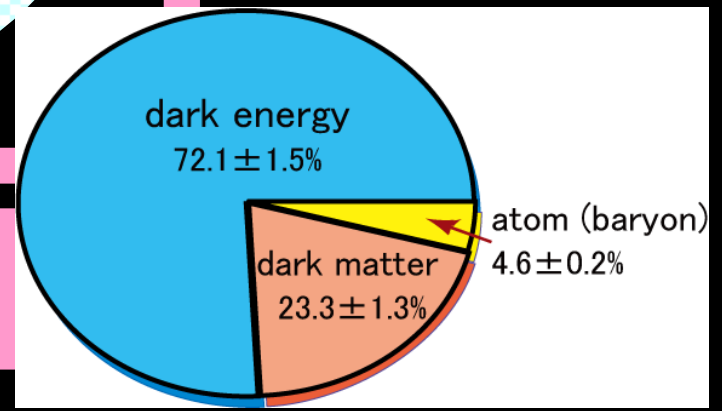


CMB
Gravitational lens
Baryon oscillation

Modified gravity
Extra-dimension
backreaction

Edingburgh U.
Royal Obs.
coordinator
John Peacock

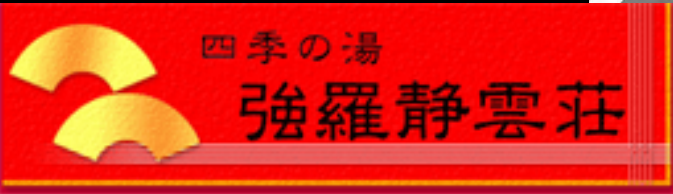
Theoretical model
Baryon oscillation
Weak lens mapping



7th SS: 2007@Gora, Hakone



JSPS 日本学術振興会
Core-to-Core Program
DENET
International Research
Network for Dark Energy



- Nemanja Kaloper (UC Davis)
- David Parkinson (Univ. of Sussex)
- Mamoru Doi (IoA, Univ. of Tokyo)



8th SS: 2008@Asamushi, Aomori



- Kazuya Koyama (Univ. of Portsmouth)
- Alan Heavens (Univ. of Edinburgh)
- Andrei Frolov (Simon Fraser Univ.)



9th SS: 2009@Ginowan, Okinawa



JSPS 日本学術振興会
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- Alexei Starobinsky (Landau Institute)
- Michael Seiffert (JPL)
- Will Percival (Univ. of Portsmouth)

10th SS: 2010@Kochi



JSPS 日本学術振興会
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- Dragan Huterer (University of Michigan)
- Jerome Martin (Institut d'Astrophysique de Paris)
- Massimo Meneghetti (Universita di Bologna)

11th SS: 2011@Aso, Kumamoto



- Roy Maartens (University of Portsmouth)
- Shirley Ho (Berkeley/ Carnegie Mellon University)
- Toru Yamada (Tohoku University)
- Alexei Starobinsky (Landau Institute)

JSPS 日本学術振興会
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12th SS: 2012@Urabandai, Fukushima



- Shirley Ho (Berkeley/ Carnegie Mellon University)
- Bernard Carr (Queen Mary, University of London)

13th SS: 2013@Zao, Yamagata



- Tomonori Totani (University of Tokyo)
- Liyi Gu (University of Tokyo)

14th SS: 2014@Matsumoto, Nagano



- Christophe Ringeval (Universite catholique de Louvain)
- David Polarski (Université Montpellier II)
- Bernard Carr (Queen Mary, University of London)
- Kiyotomo Ichiki (Nagoya University)

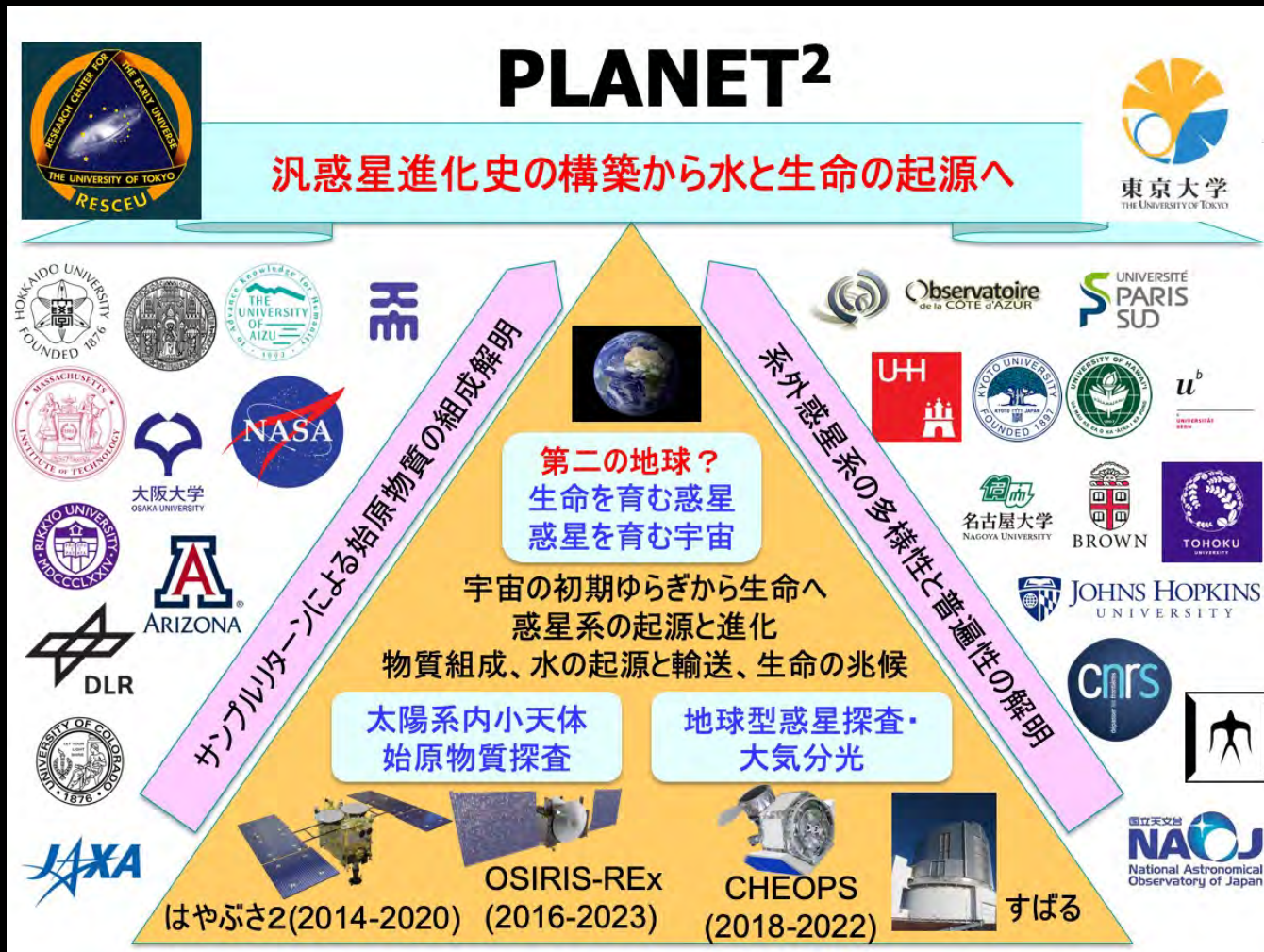
15th SS: 2015@Nikko, Tochigi



- Martin Lemoine (IAP)
- Ruth Gregory (Durham University)
- Rennan Barkana (Tel Aviv University / Lagrange Institute, IAP)

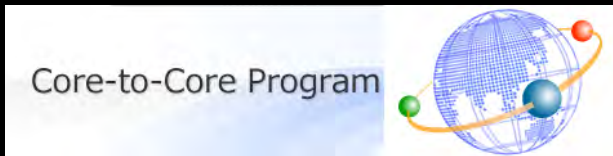


JSPS core-to-core program (2016-2020)



- PI: Seiji Sugita (Dept. of Earth and Planet Sciences, Univ. of Tokyo)
- co-PIs: Masahiro Ikoma, Yasushi Suto

16th SS: 2016@Hida Takayama, Gifu



- David Ehrenreich (Geneve University)
- Tristan Guillot (Observatory of Cote d'Azur)
- Seth Jacobson (Observatory of Cote d'Azur)
- Olivier Barnouin (Johns Hopkins University)
- Stefan Schröder (German Aerospace Center)
- Gongjie Li (Harvard University)
- Alexei Starobinsky (Landau Institute/RESCEU)
- Robert Brandenberger (McGill University)
- Salvatore Vitale (MIT)



17th SS: 2017@Yamaguchi

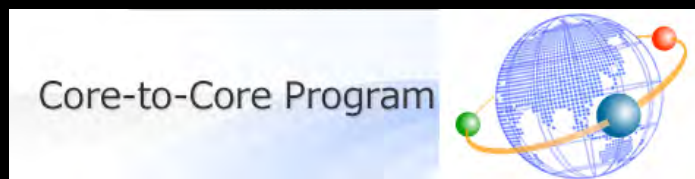
Core-to-Core Program



- Kei-ichi Maeda (Kyoto University)
- Kunihito Ioka (Yukawa Institute for Theoretical Physics)
- Aaron Zimmerman (Canadian Institute for Theoretical Astrophysics)



18th SS: 2018@Hakodate, Hokkaido

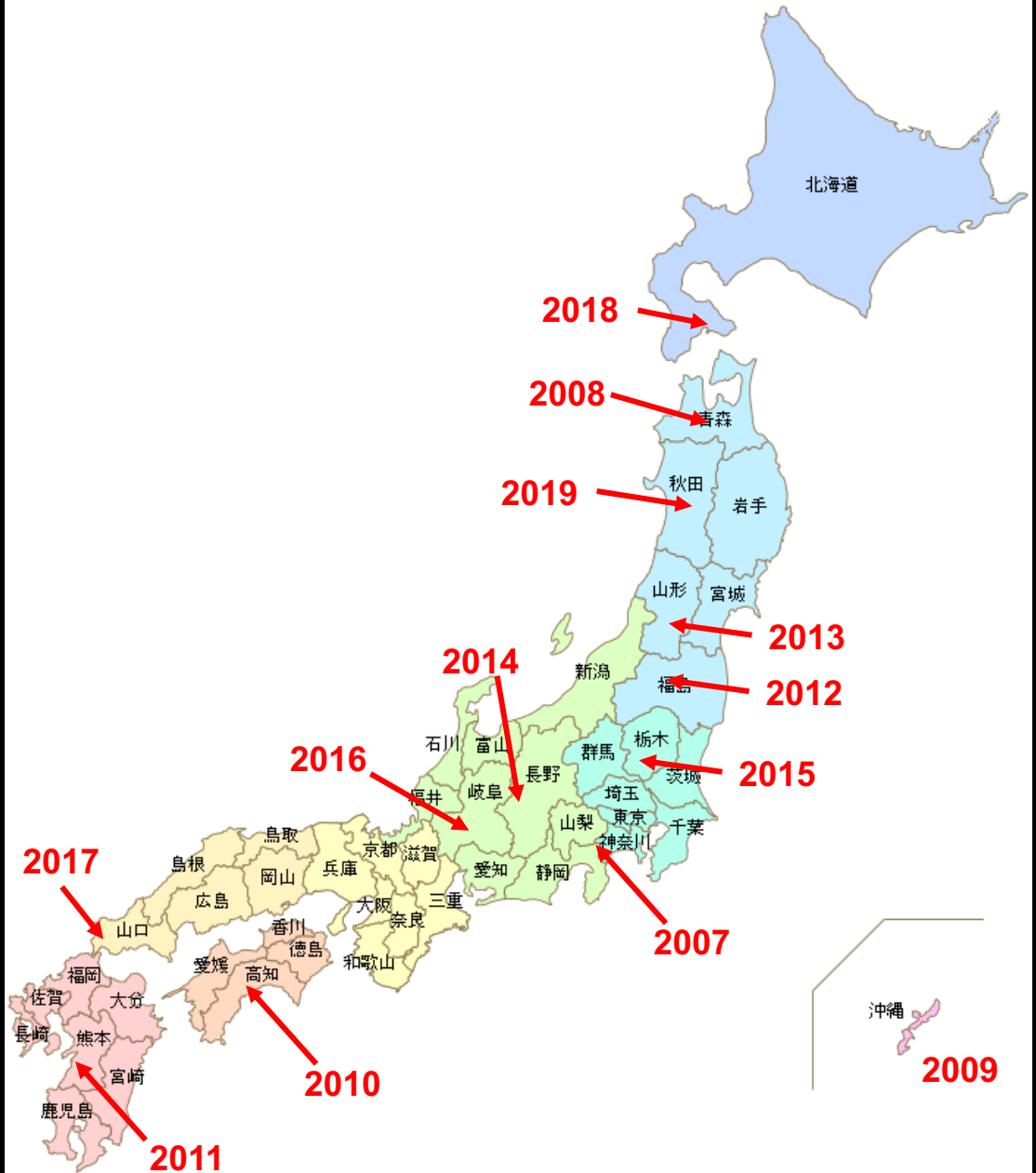


- Re'em Sari (Hebrew University)
- Haibo Yu (University of California Riverside)
- Kohta Murase (Penn State University)



RESCEU Summer School Locations (2007-2019)

Where is next ?



19th SS: 2019@Kakunodate, Akita

Core-to-Core Program



- **Konstantin Batygin (Caltech)**
 - Core nucleated accretion theory of giant planet formation
 - Angular momentum evolution of giant planets and the hot Jupiter radius inflation problem
 - Chaos and long-term dynamical evolution of planetary systems
- **Patrick Brady (University of Wisconsin-Milwaukee)**
 - introduction to gravitational waves and their detection.
 - how gravitational waves carry information about black holes, neutron stars and the universe.
 - what has been learned from gravitational wave observations and what we will learn in the future.
- **Tanmay Vachaspati (Arizona State University)**
 - Cosmic strings
 - Primordial magnetic fields

RESCEU Summer School

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Great location

+

Great Onsen (hot spring)

+

Great Food

+

Wonderful lectures and participants

Enjoy !