

# Our Team

## Hiroshi Karoji

Research Area: **Astronomy**

IPMU Professor

My job at IPMU is clearly defined: to manage the SuMIRe Project under the direction and leadership of Hitoshi Murayama, designated as PI of one of the 30 “FIRST” initiatives, a new funding program of the Japanese government to promote world-leading R&D in science and technology (see <http://www.ipmu.jp/node/490>).

I come from the National Astronomical Observatory of Japan’s *Subaru Telescope*, which has been my workplace for more than twenty years. I was involved in the development and construction of the entire telescope and all of its instruments, and later in its scientific operations. I feel most honored to have worked among those who ensured the success of this giant flagship of basic science in Japan.



I believe this is the reason why Dr. Murayama recruited me to realize two huge instruments that will be mounted on Subaru, namely *HSC* and *PFS*, referring respectively to ultra-wide field imaging and a multi-object spectrograph. These instruments are essential tools if we are to, “*uncover the origin of the universe and its future by exploring dark matter and dark energy*” (the SuMIRe rationale).

## Sourav K. Mandal

Research Area: **Theoretical Physics**

Postdoc

While the standard model of particle physics has been spectacularly successful in explaining various observations, it leaves open several big questions, including “What is the nature of dark matter?”, “Why are some particles much heavier than others?”, and “What controls the theory at the TeV scale?” My recent work has been to explore new astrophysical constraints on the nature of dark matter, and to understand how supersymmetry could answer



all three questions. I look forward to the next generation of experiments providing valuable insight into these mysteries.

## Tomoki Saito

Research Area: **Astronomy**

Postdoc

Galaxies are known to have existed, even 13 billion years or so ago. However, no one has witnessed them in the very first phase of their assembly. I have been working on a survey of such protogalaxy candidates, using large telescopes around the world. We are also developing a next-generation, wide-field camera for the Subaru Telescope in order that we can expand our survey. This will provide us with



crucial signposts for the forthcoming era of the 30-meter class telescope.

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