



## Yosuke Utsumi

Physical Science Research Scientist

Kavli Institute for Particle Astrophysics and Cosmology

### Bio

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#### BIO

Yosuke Utsumi works on integration and testing for the Legacy Survey of Space and Time (LSST) camera. The LSST camera is the next generation US's astronomical camera for mapping out the deep universe that will take place at the Vera C. Rubin Observatory.

He has been working on many kinds of astronomical topics through various instrumentation projects, especially focusing on wide-field imaging. Developing the widest astronomical camera, Hyper Suprime-Cam (HSC) of the Subaru telescope operated by the National Astronomical Observatory of Japan, was his first professional experience. He was in charge of developing control software and conducting the camera commissioning. He also led a project to build a new astronomical observatory in Tibet with a 50cm telescope (Hiroshima University Operated Tibet Optical Robotic Imager; HinOTORI) under a collaboration with National Astronomical Observatories of China. He made its optical design, integration, and verification of the whole system and investigation of logistics between Japan and China. He also took an important role to make negotiations with both governments. His scientific interest started from investigating the activity of meteor storms by developing a forward scattering radar but now expanded to investigate Cosmology through weak lensing technique, to explore distant galaxies, and to find new types of astronomical transients associated with gravitational waves or high energy neutrino.

He holds a PhD in Science from the Graduate University for Advanced Studies in Japan. His name in Japanese Kanji Character: ## ##

#### ACADEMIC APPOINTMENTS

- Phys Sci Res Assoc, Kavli Institute for Particle Astrophysics and Cosmology

#### HONORS AND AWARDS

- The PASJ Excellent Paper Award, The Astronomical Society of Japan (2020/03/17)
- Prize for Science and Technology in Research Category, The Minister of Education, Culture, Sports, Science and Technology of Japan (2019/4/17)

#### LINKS

- My web page: <https://www.slac.stanford.edu/~youtsumi/>
- HinOTORI: Tibet Observatory: <http://hinotori.hiroshima-u.ac.jp>
- Hyper Suprime-Cam: <http://hsc.mtk.nao.ac.jp>
- LSST @ SLAC: <https://lsst.slac.stanford.edu>
- lsst: <https://www.lsst.org>

## Publications

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### PUBLICATIONS

- **Velocity Dispersions of Massive Quiescent Galaxies from Weak Lensing and Spectroscopy** *ASTROPHYSICAL JOURNAL*  
Utsumi, Y., Geller, M. J., Zahid, H. J., Sohn, J., Dell'Antonio, I. P., Kawanomoto, S., Komiyama, Y., Koshida, S., Miyazaki, S.  
2020; 900 (1)
- **A challenge to identify an optical counterpart of the gravitational wave event GW151226 with Hyper Suprime-Cam(dagger)** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Utsumi, Y., Tominaga, N., Tanaka, M., Morokuma, T., Yoshida, M., Asakura, Y., Finet, F., Furusawa, H., Kawabata, K. S., Liu, W., Matsubayashi, K., Moritani, Y., Motohara, et al  
2018; 70 (1)
- **Optical and NIR Observations for Gravitational Wave Event GW170817**  
Utsumi, Y.  
AAPPS Bulletin. Korea.  
2018 ; 28 (3): 31–33
- **J-GEM observations of an electromagnetic counterpart to the neutron star merger GW170817** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Utsumi, Y., Tanaka, M., Tominaga, N., Yoshida, M., Barway, S., Nagayama, T., Zenko, T., Aoki, K., Fujiyoshi, T., Furusawa, H., Kawabata, K. S., Koshida, S., Lee, et al  
2017; 69 (6)
- **A WEAK LENSING VIEW OF THE DOWNSIZING OF STAR-FORMING GALAXIES** *ASTROPHYSICAL JOURNAL*  
Utsumi, Y., Geller, M. J., Dell'Antonio, I. P., Kamata, Y., Kawanomoto, S., Koike, M., Komiyama, Y., Koshida, S., Mineo, S., Miyazaki, S., Sakurai, J., Tait, P. J., Terai, et al  
2016; 833 (2)
- **REDUCING SYSTEMATIC ERROR IN WEAK LENSING CLUSTER SURVEYS** *ASTROPHYSICAL JOURNAL*  
Utsumi, Y., Miyazaki, S., Geller, M. J., Dell'Antonio, I. P., Oguri, M., Kurtz, M. J., Hamana, T., Fabricant, D. G.  
2014; 786 (2)
- **Hyper Suprime-Cam: the Control System**  
Utsumi, Y., Kawanomoto, S., Tait, P., Jeschke, E., Furusawa, H., Kamata, Y., Koike, M., Komiyama, Y., Miyazaki, S., Morokuma, T., Nakata, F., Nakaya, H., Uraguchi, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2012
- **A LARGE NUMBER OF  $z > 6$  GALAXIES AROUND A QSO AT  $z = 6.43$ : EVIDENCE FOR A PROTOCLUSTER?** *ASTROPHYSICAL JOURNAL*  
Utsumi, Y., Goto, T., Kashikawa, N., Miyazaki, S., Komiyama, Y., Furusawa, H., Overzier, R.  
2010; 721 (2): 1680-1688
- **Subaru/HSC deep optical imaging of infrared sources in the AKARI North Ecliptic Pole-Wide field** *MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY*  
Oi, N., Goto, T., Matsuhara, H., Utsumi, Y., Momose, R., Toba, Y., Malkan, M., Takagi, T., Huang, T., Kim, S., Ohya, Y.  
2021; 500 (4): 5024–42
- **Blazar Radio and Optical Survey (BROS): A Catalog of Blazar Candidates Showing Flat Radio Spectrum and Their Optical Identification in Pan-STARRS1 Surveys** *ASTROPHYSICAL JOURNAL*  
Itoh, R., Utsumi, Y., Inoue, Y., Ohta, K., Doi, A., Morokuma, T., Kawabata, K. S., Tanaka, Y. T.  
2020; 901 (1)
- **Search for Optically Dark Infrared Galaxies without Counterparts of Subaru Hyper Suprime-Cam in the AKARI North Ecliptic Pole Wide Survey Field** *ASTROPHYSICAL JOURNAL*  
Toba, Y., Goto, T., Oi, N., Wang, T., Kim, S., Ho, S., Burgarella, D., Hashimoto, T., Hsieh, B., Huang, T., Hwang, H., Ikeda, H., Kim, et al  
2020; 899 (1)
- **Second data release of the Hyper Suprime-Cam Subaru Strategic Program** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Aihara, H., AlSayyad, Y., Ando, M., Armstrong, R., Bosch, J., Egami, E., Furusawa, H., Furusawa, J., Goulding, A., Harikane, Y., Hikage, C., Ho, P. P., Hsieh, et al

2019; 71 (6)

- **Stellar Population and Structural Properties of Dwarf Galaxies and Young Stellar Systems in the M81 Group** *ASTROPHYSICAL JOURNAL*  
Okamoto, S., Arimoto, N., Ferguson, A. N., Irwin, M. J., Bernard, E. J., Utsumi, Y.  
2019; 884 (2)
- **Subaru High-z Exploration of Low-luminosity Quasars (SHELLQs). X. Discovery of 35 Quasars and Luminous Galaxies at  $5.7 \leq z \leq 7.0$**  *ASTROPHYSICAL JOURNAL*  
Matsuoka, Y., Iwasawa, K., Onoue, M., Kashikawa, N., Strauss, M. A., Lee, C., Imanishi, M., Nagao, T., Akiyama, M., Asami, N., Bosch, J., Furusawa, H., Goto, et al  
2019; 883 (2)
- **Possible evolution of the circum-galactic medium around QSOs with QSO age and cosmic time revealed by Ly alpha haloes** *MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY*  
Momose, R., Goto, T., Utsumi, Y., Hashimoto, T., Chiang, C., Kim, S., Kashikawa, N., Shimasaku, K., Miyazaki, S.  
2019; 488 (1): 120–34
- **Cosmology from cosmic shear power spectra with Subaru Hyper Suprime-Cam first-year data** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Hikage, C., Oguri, M., Hamana, T., More, S., Mandelbaum, R., Takada, M., Kohlinger, F., Miyatake, H., Nishizawa, A. J., Aihara, H., Armstrong, R., Bosch, J., Coupon, et al  
2019; 71 (2)
- **Infrared luminosity functions based on 18 mid-infrared bands: revealing cosmic star formation history with AKARI and Hyper Suprime-Cam** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Goto, T., Oi, N., Utsumi, Y., Momose, R., Matsuhara, H., Hashimoto, T., Toba, Y., Ohyama, Y., Takagi, T., Chiang, C., Kim, S., Eser, E., Malkan, et al  
2019; 71 (2)
- **Quiescent Galaxy Size and Spectroscopic Evolution: Combining HSC Imaging and Hectospec Spectroscopy** *ASTROPHYSICAL JOURNAL*  
Damjanov, I., Zahid, H., Geller, M. J., Utsumi, Y., Sohn, J., Souchereau, H.  
2019; 872 (1)
- **Discovery of the First Low-luminosity Quasar at  $z > 7$**  *ASTROPHYSICAL JOURNAL LETTERS*  
Matsuoka, Y., Onoue, M., Kashikawa, N., Strauss, M. A., Iwasawa, K., Lee, C., Imanishi, M., Nagao, T., Akiyama, M., Asami, N., Bosch, J., Furusawa, H., Goto, et al  
2019; 872 (1)
- **Subaru High-z Exploration of Low-luminosity Quasars (SHELLQs). V. Quasar Luminosity Function and Contribution to Cosmic Reionization at  $z=6$**  *ASTROPHYSICAL JOURNAL*  
Matsuoka, Y., Strauss, M. A., Kashikawa, N., Onoue, M., Iwasawa, K., Tang, J., Lee, C., Imanishi, M., Nagao, T., Akiyama, M., Asami, N., Bosch, J., Furusawa, et al  
2018; 869 (2)
- **Multimessenger observations of a flaring blazar coincident with high-energy neutrino IceCube-170922A** *SCIENCE*  
Aartsen, M. G., Ackermann, M., Adams, J., Aguilar, J. A., Ahlers, M., Ahrens, M., Al Samarai, I., Altmann, D., Andeen, K., Anderson, T., Anseau, I., Anton, G., Argüelles, et al  
2018; 361 (6398): 146+
- **Subaru High-z Exploration of Low-luminosity Quasars (SHELLQs). IV. Discovery of 41 Quasars and Luminous Galaxies at  $5.7 \leq z \leq 6.9$**  *ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES*  
Matsuoka, Y., Iwasawa, K., Onoue, M., Kashikawa, N., Strauss, M. A., Lee, C., Imanishi, M., Nagao, T., Akiyama, M., Asami, N., Bosch, J., Furusawa, H., Goto, et al  
2018; 237 (1)
- **Multiwavelength study of X-ray luminous clusters in the Hyper Suprime-Cam Subaru Strategic Program S16A field (vol 70, S22, 2018)** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Miyaoaka, K., Okabe, N., Kitaguchi, T., Oguri, M., Fukazawa, Y., Mandelbaum, R., Medezinski, E., Babazaki, Y., Nishizawa, A. J., Hamana, T., Lin, Y., Akamatsu, H., Chiu, et al  
2018; 70 (3)
- **The HectoMAP Cluster Survey. I. redMaPPer Clusters** *ASTROPHYSICAL JOURNAL*  
Sohn, J., Geller, M. J., Rines, K. J., Hwang, H., Utsumi, Y., Diaferio, A.

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- 2018; 856 (2)
- **The HectoMAP Cluster Survey. II. X-Ray Clusters** *ASTROPHYSICAL JOURNAL*  
Sohn, J., Chon, G., Boehringer, H., Geller, M. J., Diaferio, A., Hwang, H., Utsumi, Y., Rines, K. J.  
2018; 855 (2)
  - **Subaru Hyper Suprime-Cam Survey for an optical counterpart of GW170817** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Tominaga, N., Tanaka, M., Morokuma, T., Utsumi, Y., Yamaguchi, M. S., Yasuda, N., Tanaka, M., Yoshida, M., Fujiyoshi, T., Furusawa, H., Kawabata, K. S., Lee, C., Motohara, et al  
2018; 70 (2)
  - **Two- and three-dimensional wide-field weak lensing mass maps from the Hyper Suprime-Cam Subaru Strategic Program S16A data** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Oguri, M., Miyazaki, S., Hikage, C., Mandelbaum, R., Utsumi, Y., Miyatake, H., Takada, M., Armstrong, R., Bosch, J., Komiyama, Y., Leauthaud, A., More, S., Nishizawa, et al  
2018; 70
  - **The Hyper Suprime-Cam SSP Survey: Overview and survey design** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Aihara, H., Arimoto, N., Armstrong, R., Arnouts, S., Bahcall, N. A., Bickerton, S., Bosch, J., Bundy, K., Capak, P. L., Chan, J. H., Chiba, M., Coupon, J., Egami, et al  
2018; 70
  - **Subaru High-z Exploration of Low-Luminosity Quasars (SHELLQs). II. Discovery of 32 quasars and luminous galaxies at  $5.7 < z \leq 6.8$**  *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Matsuoka, Y., Onoue, M., Kashikawa, N., Iwasawa, K., Strauss, M. A., Nagao, T., Imanishi, M., Lee, C., Akiyama, M., Asami, N., Bosch, J., Foucaud, S., Furusawa, et al  
2018; 70
  - **First data release of the Hyper Suprime-Cam Subaru Strategic Program** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Aihara, H., Armstrong, R., Bickerton, S., Bosch, J., Coupon, J., Furusawa, H., Hayashi, Y., Ikeda, H., Kamata, Y., Karoji, H., Kawanomoto, S., Koike, M., Komiyama, et al  
2018; 70
  - **The on-site quality-assurance system for Hyper Suprime-Cam: OSQAH** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Furusawa, H., Koike, M., Takata, T., Okura, Y., Miyatake, H., Lupton, R. H., Bickerton, S., Price, P. A., Bosch, J., Yasuda, N., Mineo, S., Yamada, Y., Miyazaki, et al  
2018; 70
  - **The first-year shear catalog of the Subaru Hyper Suprime-Cam Subaru Strategic Program Survey** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Mandelbaum, R., Miyatake, H., Hamana, T., Oguri, M., Simet, M., Armstrong, R., Bosch, J., Murata, R., Lanusse, F., Leauthaud, A., Coupon, J., More, S., Takada, et al  
2018; 70
  - **Hyper Suprime-Cam: System design and verification of image quality** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Miyazaki, S., Komiyama, Y., Kawanomoto, S., Doi, Y., Furusawa, H., Hamana, T., Hayashi, Y., Ikeda, H., Kamata, Y., Karoji, H., Koike, M., Kurakami, T., Miyama, et al  
2018; 70
  - **Multiwavelength study of X-ray luminous clusters in the Hyper Suprime-Cam Subaru Strategic Program S16A field** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Miyaoka, K., Okabe, N., Kitaguchi, T., Oguri, M., Fukazawa, Y., Mandelbaum, R., Medezinski, E., Babazaki, Y., Nishizawa, A. J., Hamana, T., Lin, Y., Akamatsu, H., Chiu, et al  
2018; 70
  - **A large sample of shear-selected clusters from the Hyper Suprime-Cam Subaru Strategic Program S16A Wide field mass maps** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Miyazaki, S., Oguri, M., Hamana, T., Shirasaki, M., Koike, M., Komiyama, Y., Umetsu, K., Utsumi, Y., Okabe, N., More, S., Medezinski, E., Lin, Y., Miyatake, et al  
2018; 70
  - **Hyper Suprime-Cam: Camera dewar design** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*
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- Komiyama, Y., Obuchi, Y., Nakaya, H., Kamata, Y., Kawanomoto, S., Utsumi, Y., Miyazaki, S., Uraguchi, F., Furusawa, H., Morokuma, T., Uchida, T., Miyatake, H., Mineo, et al  
2018; 70
- **Kilonova from post-merger ejecta as an optical and near-Infrared counterpart of GW170817** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Tanaka, M., Utsumi, Y., Mazzali, P. A., Tominaga, N., Yoshida, M., Sekiguchi, Y., Morokuma, T., Motohara, K., Ohta, K., Kawabata, K. S., Abe, F., Aoki, K., Asakura, et al  
2017; 69 (6)
  - **No Ly alpha emitters detected around a QSO at z=6.4: Suppressed by the QSO?** *MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY*  
Goto, T., Utsumi, Y., Kikuta, S., Miyazaki, S., Shiki, K., Hashimoto, T.  
2017; 470 (1): L117–L121
  - **CLUSTERING OF EXTREMELY RED OBJECTS IN THE SUBARU GTO 2DEG(2) FIELD** *JOURNAL OF THE KOREAN ASTRONOMICAL SOCIETY*  
Shin, J., Shim, H., Hwang, H., Ko, J., Lee, J., Utsumi, Y., Hwang, N., Park, B.  
2017; 50 (3): 61–70
  - **J-GEM follow-up observations of the gravitational wave source GW151226** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Yoshida, M., Utsumi, Y., Tominaga, N., Morokuma, T., Tanaka, M., Asakura, Y., Matsubayashi, K., Ohta, K., Abe, F., Chimasu, S., Furusawa, H., Itoh, R., Itoh, et al  
2017; 69 (1)
  - **Ghost in the Subaru Prime Focus Camera**  
Yagi, M., Utsumi, Y., Komiyama, Y., Lorente, N. P., Shortridge, K., Wayth, R.  
ASTRONOMICAL SOC PACIFIC.2017: 651–54
  - **GALAXY-SCALE GRAVITATIONAL LENS CANDIDATES FROM THE HYPER SUPRIME-CAM IMAGING SURVEY AND THE GALAXY AND MASS ASSEMBLY SPECTROSCOPIC SURVEY** *ASTROPHYSICAL JOURNAL*  
Chan, J. H., Suyu, S. H., More, A., Oguri, M., Chiueh, T., Coupon, J., Hsieh, B., Komiyama, Y., Miyazaki, S., Murayama, H., Nishizawa, A. J., Price, P., Tait, et al  
2016; 832 (2)
  - **SUBARU HIGH-z EXPLORATION OF LOW-LUMINOSITY QUASARS (SHELLQs). I. DISCOVERY OF 15 QUASARS AND BRIGHT GALAXIES AT  $5.7 < z < 6.9$**  *ASTROPHYSICAL JOURNAL*  
Matsuoka, Y., Onoue, M., Kashikawa, N., Iwasawa, K., Strauss, M. A., Nagao, T., Imanishi, M., Niida, M., Toba, Y., Akiyama, M., Asami, N., Bosch, J., Foucaud, et al  
2016; 828 (1)
  - **J-GEM follow-up observations to search for an optical counterpart of the first gravitational wave source GW150914** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Morokuma, T., Tanaka, M., Asakura, Y., Abe, F., Tristram, P. J., Utsumi, Y., Doi, M., Fujisawa, K., Itoh, R., Itoh, Y., Kawabata, K. S., Kawai, N., Kuroda, et al  
2016; 68 (4)
  - **A SPECTROSCOPICALLY CONFIRMED DOUBLE SOURCE PLANE LENS SYSTEM IN THE HYPER SUPRIME-CAM SUBARU STRATEGIC PROGRAM** *ASTROPHYSICAL JOURNAL LETTERS*  
Tanaka, M., Wong, K. C., More, A., Dezuka, A., Egami, E., Oguri, M., Suyu, S. H., Sonnenfeld, A., Higuchi, R., Komiyama, Y., Miyazaki, S., Onoue, M., Oyamada, et al  
2016; 826 (2)
  - **Hyper-luminous dust-obscured galaxies discovered by the Hyper Suprime-Cam on Subaru and WISE** *PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN*  
Toba, Y., Nagao, T., Strauss, M. A., Aoki, K., Goto, T., Imanishi, M., Kawaguchi, T., Terashima, Y., Ueda, Y., Bosch, J., Bundy, K., Doi, Y., Inami, et al  
2015; 67 (5)
  - **A HYPER SUPRIME-CAM VIEW OF THE INTERACTING GALAXIES OF THE M81 GROUP** *ASTROPHYSICAL JOURNAL LETTERS*  
Okamoto, S., Arimoto, N., Ferguson, A. N., Bernard, E. J., Irwin, M. J., Yamada, Y., Utsumi, Y.  
2015; 809 (1)
  - **PROPERTIES OF WEAK LENSING CLUSTERS DETECTED ON HYPER SUPRIME-CAM's 2.3 deg(2) FIELD** *ASTROPHYSICAL JOURNAL*  
Miyazaki, S., Oguri, M., Hamana, T., Tanaka, M., Miller, L., Utsumi, Y., Komiyama, Y., Furusawa, H., Sakurai, J., Kawanomoto, S., Nakata, F., Uraguchi, F., Koike, et al

2015; 807 (1)