

CURRICULUM VITAE

YUKO KAKAZU

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Personal Information

Citizenship: Japan
Languages: Japanese (native), English, French

Employment History

2011 Dec – present	Postdoctoral Scholar, University of Chicago Associate fellow, Kavli Institute for Cosmological Physics
2010 Jan – 2011 Dec	Postdoctoral Scholar, Caltech
2007 Dec – 2009 Dec	CNRS Postdoctoral Fellow, Instiut d’Astrophysique de Paris, France
2001 Sep – 2007 Dec	Research Assistant, Institute for Astronomy, University of Hawaii

Education

2003 – 2008	Ph.D., Astrophysics, May 2008 University of Hawaii, Honolulu, Hawaii USA Thesis Title: “ <i>A Wide-Field Survey for High-Redshift ($z > 5$) Quasars</i> ” Advisors: Esther M. Hu & Lennox L. Cowie
2001 – 2003	Master of Science, Astrophysics, May 2003 University of Hawaii, Honolulu, Hawaii USA
1996 – 2001	Bachelor of Science, Astrophysics, March 2001 Tohoku University, Japan
1999 – 2000	EAP (Education Abroad Program) University of California, Santa Cruz

Research Interests

- Chemical enrichment history
- Low-metallicity galaxies
- Photometric Redshift
- High- z galaxies and QSOs
- Brown Dwarfs

List of References

Dr. Peter Capak	Caltech, Spitzer Science Center email: capak@astro.caltech.edu
Prof. Esther M. Hu	Institute for Astronomy, University of Hawaii email: hu@ifa.hawaii.edu
Prof. Lennox L. Cowie	Institute for Astronomy, University of Hawaii email: cowie@ifa.hawaii.edu

Observing Experience

I have extensive experience in optical and near-infrared imaging and spectroscopy.

Optical/near-IR imaging:

Subaru/SuprimeCam (more than 30 nights, of which 9 nights as PI), Subaru/CISCO, UKIRT/UFTI (2 nights as PI), UKIRT/WFCAM (2 nights as PI), CFHT/MegaPrime (0.5 night as PI), UH2.2m/ULBCAM, QUIRC, MAGNUM

Optical/near-IR spectroscopy:

Keck/DEIMOS (8 nights as PI), Keck/ESI (1 night as PI), Subaru/MOIRCS (0.5 nights as PI), Subaru/CISCO
Palomar/TripleSpec (1.5 nights as PI)
Magellan/MagE (3 half nights as CoI)

University service, Outreach

Host of weekly colloquium lunches *University of Chicago, 2012 Fall - present*

Volunteer scientist *Adler Planetarium, Chicago, 2012 - present*

Summary of current research projects

• **Finding Low Metallicity Galaxies in DES (Dark Energy Survey):**

Collaborators: Josh Frieman (UChicago) & Huan Lin (Fermilab)

I have developed a new broad-band color selection technique for strong emission line metal-poor galaxies. The preliminary search in the DES early data appear promising and candidate galaxies will be observed in the upcoming spectroscopic followup observation.

• **Chemical evolution of galaxies at high redshift:**

Collaborators: Peter Capak & Nick Scoville (Caltech)

Using deep, medium-resolution Keck/DEIMOS spectra of ~ 500 galaxies, I have been investigating kinematics and metallicities of galaxies at high redshift ($4 < z < 6$). I am responsible for the reduction and calibration of a large spectroscopic survey data which were obtained with Keck/DEIMOS over 17 nights for about 3,000 targets.

• **Strong emission line, low-metallicity galaxies at $z < 2.5$:**

Collaborators: Peter Capak, Nick Scoville (Caltech), & Tohru Nagao (Kyoto, Japan)

I have been studying metal poor galaxies which are selected by narrow- and intermediate-band images from Subaru/SuprimeCam. Deep optical and near-IR spectra from Keck/DEIMOS and Palomar/TripleSpec are used.

• **History of star formation and mass accumulation of galaxies in the CFHT Legacy Survey**

Collaborators: Valerie de Lapparent, Damien Le Borne, & Michel Fioc (IAP, Paris, France)

I have measured photometric redshifts with the PEGASE galaxy synthetic model in an effort

to understand the mass assembly history of galaxies at $z < 1$ by galaxy type.

Past Research Projects

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|-------------|---|
| 2005–2008 | Spectroscopic Studies of Ultra-Strong Emission Line Galaxies (USELs)
<i>Collaborators: Esther M. Hu & Lennox L. Cowie (University of Hawaii)</i> |
| 2003 – 2007 | Ph.D. Dissertation: A Wide-Field Survey for High-Redshift Quasars
Institute for Astronomy, University of Hawaii
<i>Advisors: Esther M. Hu & Lennox L. Cowie</i> <ul style="list-style-type: none">• Awarded 22.5 nights on optical/near-IR telescopes on Mauna Kea as a PI.• Observed, reduced, and analyzed optical/near-IR imaging and spectroscopic data |
| 2001 – 2008 | An Ultra-Deep Survey for Ly alpha Emitting Galaxies at High-Redshift (Co-I)
<i>Advisor: Esther M. Hu (University of Hawaii)</i> <ul style="list-style-type: none">• Primary observer for Subaru/SuprimeCam imaging survey• Responsible for the data acquisition, reduction and analysis of Subaru imaging data |
| 2006 – 2008 | Optical and Near-Infrared Follow-up Observations of Gamma Ray Bursts
<i>Advisor: Lennox Cowie & Paul Price (University of Hawaii)</i> <ul style="list-style-type: none">• Conducted follow-up observations with the MAGNUM 2m telescope on Maui• Reduced and analyzed the data. |
| 2002 – 2003 | A Deep Survey for High-Redshift Quasars (Master thesis project II)
<i>Advisor: Esther M. Hu (University of Hawaii)</i> <ul style="list-style-type: none">• Developed a new color selection technique for high-z QSOs |
| 2001 – 2002 | Cosmic Structure in the SSA13 field (Master thesis project I)
<i>Advisor: Antoinette Songaila Cowie (University of Hawaii)</i> <ul style="list-style-type: none">• Obtained Keck/ESI spectra of QSOs and investigated Lyα forest lines• Applied Bayesian code to ultra-deep multiwavelength imaging data to derive photometric redshifts |
| 1998 – 2001 | Multi-Wavelength Observations of ISO 170μm sources
<i>Advisor: Yoshiaki Taniguchi (Tohoku University, Japan)</i> |
| 1999 – 2000 | Morphological Studies of Galaxies in HST DEEP data
<i>Advisor: David Koo (University of California, Santa Cruz)</i> |

Grants and Awards

2012	2nd prize in poster award at IAP-Subaru joint international conference
2012	International travel grant from the American Astronomical Society (AAS) (1,600 USD)
2012	Okinawa Uruma Foundation research grant (60,000 Yen)
2006	University of Hawaii URC (University Research Council) Student Excellence in Research Award <i>An annual prize awarded to one student at the doctoral level in University of Hawaii.</i>
2003	East Asian Young Astronomers Meeting in Taiwan <i>Funds for travel & accommodations</i>
1999 – 2000	EAP (Education Abroad Program) at University of California, Santa Cruz <i>Tuition waiver</i>