

# Curriculum Vitae

## Tatsuaki Okada

Associate Professor of ISAS/JAXA

### 1. Personal Information:

Name: Tatsuaki Okada, Ph.D  
Date of Birth: 2 August 1968  
Birth Place: Urawa, Saitama, Japan.  
Nationality: Japanese  
Affiliation: Department of Planetary Science,  
The Institute of Space and Astronautical Science,  
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### 2. Education:

1996 Ph.D. in Planetary Science, at Department of Earth and Planetary Physics, Faculty of Science, University of Tokyo, 1996.  
1993 M.Sc in Planetary Science, at Geophysical Institute, Faculty of Science, University of Tokyo  
1991 B.Sc. in Geophysics, at Geophysical Institute, Faculty of Science, University of Tokyo.

### 3. Professional Experience:

2008-present, Visiting Associate Professor, University of Aizu  
2008-present, Associate Professor, JAXA Space Exploration Center  
2006-present, Associate Professor, Department of Planetary Science, Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency(JAXA).  
2006-present, Associate Professor, Department of Space and Astronautical Science, Graduate School for Advanced Studies (Sokendai).  
2003-2006, Assistant Professor, Department of Planetary Science, ISAS/JAXA.  
2002-2006, Assistant Professor, Department of Earth and Planetary Science, University of Tokyo.  
1999-2003, Assistant Professor, Division of Planetary Science, ISAS  
1996-1999, Research Fellow, the Japan Society for the Promotion of Science.

#### 4. Research

##### Planetary X-ray Study

Planetary X-ray experiment is my major work for its instrumentation, observation, and data analysis. X-ray experiment of asteroid 25143 Hayabusa is the most highlighted scientific result for our study that shows ordinary chondrite is likely for S-class asteroid.

Laboratory experiment and numerical studies of surface roughness effects in X-ray fluorescence, simulating the planetary remote X-ray spectrometry that observes X-rays from the regolith surface.

##### Instrumentation for Planetary Exploration

1995 - present HAYABUSA/ XRS (X-ray spectrometer ), launched in 2003.

1996 - present SELENE(Kaguya)/ XRS (X-ray spectrometer ), launched in 2007.

2003 - present SELENE-2/ XRF/XRD instrument

#### 5. Grants and Awards

##### Grant-in-Aid for Young Scientist(A), 2005-2007

Development of miniaturized Carbon-nano-tube based field emission X-ray tube for X-ray diffraction and fluorescence analyzer onboard the future planetary mission.

##### JSPS Research Fellow (PD), 1996-1999

For research of X-ray spectrometry and development of X-ray spectrometer for Hayabusa / SELENE missions

##### JSPS Research Fellow (DC1), 1993-1995

For research of X-ray spectrometry of planetary surface and instrumentation.

#### 6. Publication Lists (Last 5 years, 10 Peer-Reviewed papers, in English)

1. Maruyama, Y., Ogawa, K., Okada, T., Kato, M.: Laboratory experiments of particle size effect in X-ray fluorescence and implications to remote X-ray spectrometry of lunar regolith surface, *Earth Planets Space*, 60, pp.293-297, 2008.
2. Ogawa, K., Okada, T., Shirai, K., Kato, M.: Numerical estimation of lunar x-ray emission for x-ray spectrometer onboard SELENE, *Earth Planets Space*, 60, pp.283-292, 2008.
3. Shirai, K., Okada, T., Yamamoto, Y., Arai, T., Ogawa, Shirai, H., K., Iwasaki, M., Arakawa, M., Grande, M., Kato, M.: Instrumentation and performance evaluation of the XRS on SELENE orbiter, *Earth Planets Space*, 60, pp.277-281, 2008.

4. Ogawa, K., and Okada, T.: CNT-field emitter based compact X-ray tube for space mission, *Advances in Geosciences*, 3: Planetary Science (PS), in press.
5. Yamamoto, Y., Okada, T., Shiraishi, H., Shirai, K., Arai, T., Ogawa, K., Iwasaki, M., Grande, M., Kato, M.: Current status of X-ray spectrometer development in the SELENE project, *Adv. Space Res.*, 42, 305-309, 2008.
6. Arai, T., Okada, T., Yamamoto, Y., Ogawa, K., Shirai, K., Kato, M.: Sulfur abundance of asteroid 25143 Itokawa observed by X-ray fluorescence spectrometer onboard Hayabusa, *Earth Planets Space*, 60, pp. 21-31, 2008.
7. Okada, T., Shirai, K., Yamamoto, Y., Arai, T., Ogawa, K., Hosono, K., Kato, M.: X-ray fluorescence spectrometry of asteroid Itokawa by Hayabusa, *Science* 312, pp. 1338-1341, 2006.
8. Okada, T., Shirai, K., Yamamoto, Y., Arai, T., Ogawa, K., Hosono, K., Kato, M.: Instrumentation and observation of the XRS onboard HAYABUSA, *Advances in Geosciences*, 3: Planetary Science (PS), pp. 231-240, 2006.
9. Okada, T., Sasaki, S., Sugihara, T., Saiki, K., Akiyama, H., Ohtake, M., Takeda, H., Hasebe, N., Kobayashi, M., Haruyama, J., Shirai, K., Kato, M., Kubota, T., Kunii, Y., Kuroda, Y., the SELENE-B Rover Science Group: Lander and rover exploration on the lunar surface: A study for SELENE-B mission, *Adv. Space Res.*, 37, pp. 88-92, 2006.
10. Shirai, K., Aoki, M., Okada, T., Yamamoto, Y., Arai, T., Kato, M.: X-ray fluorescence/diffraction analyzer for the SELENE-B lander/rover mission, *Adv. Space Res.*, 31, pp. 2363-2369, 2003.