

# TAKEHIKO SATOH

## PERSONAL DATA

Born in Tokyo, Japan, on 5<sup>th</sup> December 1962.

## CURRENT ADDRESS

Department of Solar System Sciences  
Institute of Space and Astronautical Science, JAXA  
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## EDUCATIONAL BACKGROUND

Bachelor of Science in Physics, awarded March 1987 (Science University of Tokyo).  
Master of Science in Physics, awarded March 1989 (Science University of Tokyo).  
Doctor of Science in Physics, awarded March 1992 (Science University of Tokyo).

## PROFESSIONAL EMPLOYMENT

Visiting Scientist, Institute for Astronomy, University of Hawaii, Honolulu, Hawaii, USA  
April 1992 - April 1993, and June 1993 - September 1993.  
Astrophysicist, Hughes STX Corporation at NASA Goddard Space Flight Center, Greenbelt,  
Maryland, USA, October 1993 - March 1997.  
Lecturer, Frontier Research Center for Computational Sciences, Science University of Tokyo  
Noda-shi, Chiba, Japan, April 1997 - April 2001.  
Associate Professor, Faculty of Education, Kumamoto University, Kumamoto-shi, Kumamoto,  
Japan, May 2001 - November 2006.  
Professor, Department of Solar System Sciences, Institute of Space and Astronautical Science,  
JAXA, Sagamihara-shi, Kanagawa, Japan,  
December 2006 – present.  
Professor, Department of Space and Astronautical Science, School of Physical Sciences,  
SOKENDAI, Sagamihara-shi, Kanagawa, Japan,  
December 2006 – present.

## RESEARCH PROJECTS

Principal Investigator, IR2 (2-mm) camera onboard Venus Climate Orbiter (Akatsuki)  
April 2001 – present.  
Project Scientist, Venus Climate Orbiter (Akatsuki)  
July 2016 – present.

## RESEARCH INTERESTS

Planetary atmospheres, magnetospheres, and surfaces. Atmospheric dynamics and aerosol

processes on major planets, such as Jupiter, Venus and Mars. Radiative transfer in planetary and stellar atmospheres. Variable phenomena in jovian planets: changes in clouds, large-scale disturbances, and auroral emissions. Single and multiple light-scattering theories and computational techniques. Instrument development for space missions and ground-based observations.

#### HONORARY AND PROFESSIONAL SOCIETY

One-year support of the research in residence at the University of Hawaii by Yamada Science Foundation (February 1992).

Research Aid of Inoue Foundation for Science (February 1994).

Asia Oceania Geosciences Society (Solar & Terrestrial Section Vice-President for 2011-2012; Section President for 2012-2014; Section Vice-President 2014-2015).

American Geophysical Union.

Division for Planetary Sciences, American Astronomical Society.

Society of Geomagnetism and Earth, Planetary and Space Sciences.

Japan Society of Planetary Sciences.

Astronomical Society of Japan.

#### SELECTED PUBLICATIONS

Takehiko Satoh and Kiyoshi Kawabata. Methane band photometry of the faded South Equatorial Belt of Jupiter. *Astrophysical Journal*, **384**:298–304, 1992.

J.E.P. Connerney, Richard Baron, Takehiko Satoh, and Tobias Owen. Images of excited  $H_3^+$  at the foot of the Io flux tube in Jupiter's atmosphere. *Science*, **262**:1035–1038, 1993.

Takehiko Satoh and Kiyoshi Kawabata. A change of upper cloud structure in Jupiter's South Equatorial Belt during the 1989–1990 event. *Journal of Geophysical Research*, **99**:8425–8440, 1994.

Takehiko Satoh, J.E.P. Connerney, and Richard Baron. Emission source model of Jupiter's  $H_3^+$  aurorae: A generalized inverse analysis of images. *Icarus*, **122**:1–23, 1996.

J.E.P. Connerney, Mario Acuna, Norman Ness, and Takehiko Satoh. New models of Jupiter's magnetic field constrained by the Io flux tube footprint. *Journal of Geophysical Research*, **103**:11929–11939, 1998.

Takehiko Satoh and J.E.P. Connerney. Jupiter's  $H_3^+$  emissions viewed in corrected jovimagnetic coordinates. *Icarus*, **141**:236–252, 1999.

Takehiko Satoh and J.E.P. Connerney. Spatial and temporal variations of Jupiter's  $H_3^+$  emissions deduced from image analysis. *Geophysical Research Letters*, **26**:1789–1792, 1999.

Masato Nakamura, Takehiko Satoh, and 18 co-authors. Planet-C: Venus Climate Orbiter mission of Japan. *Planetary and Space Science*, **55**:1831–1842, 2007.

Takehiko Satoh, Takeshi Imamura, G. L. Hashimoto, Naomoto Iwagami, Kazuaki Mitsuyama, Satoko Sorahana, Pierre Drossart, and Giuseppe Piccioni. Cloud structure in venus middle-to-lower atmosphere as inferred from VEX/VIRTIS 1.74- $\mu\text{m}$  data. *Journal of Geophysical Research*, **114**, E00B37, doi:10.1029/2008JE003184, 2009.

Iwagami, N., S. Takagi, S. Ohtsuki, M. Ueno, K. Uemizu, T. Satoh, T. Sakanoi, and G. L.

- Hashimoto, Science requirements and description of the 1  $\mu\text{m}$  camera onboard the Akatsuki Venus Orbiter, *Earth Planets Space*, **63**(6):487-492, 2011.
- Kouyama, T.; Imamura, T.; Nakamura, M.; Satoh, T.; Futaana, Y., Long-term variation in the cloud-tracked zonal velocities at the cloud top of Venus as deduced from Venus Express VMC images. *J. Geophys. Res.*, **118**(1), DOI: 10.1029/2011JE004013, 2013.
- Takao M. Sato, Takehiko Satoh and 8 co-authors. Cloud top structure of Venus revealed by Subaru/COMICS mid-infrared images. *Icarus*, **243**:386-399, 2014.
- Satoh, T., Ohtsuki, S., Iwagami, N., Ueno, M., Uemizu, K., Suzuki, M., Hashimoto, G. L., Sakanoi, T., Kasaba, Y., Nakamura, R., Imamura, T., Nakamura, M., Fukuhara, T., Yamazaki, A., Yamada, M., Venus' clouds as inferred from the phase curves acquired by IR1 and IR2 on board Akatsuki, *Icarus*, **248**:213–220, doi:10.1016/j.icarus.2014.10.030, 2015.
- Satoh, T., Nakamura, M., Ueno, M., Uemizu, K., Suzuki, M., Imamura, T., Kasaba, Y., Yoshida, S., and Kimata, M. Development and in-flight calibration of IR2: 2- $\mu\text{m}$  camera onboard Japan's Venus orbiter, Akatsuki. *Earth, Planets and Space*, 68:74, DOI: 10.1186/s40623-016-0451-z, 2016.
- Masato Nakamura, Takehiko Satoh, and 50 co-authors. Planet-C: Akatsuki returns to Venus. *Earth, Planets and Space*, 68:75, DOI: 10.1186/s40623-016-0457-6, 2016.