Joo Hyeon Kim

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Research Interests

Spectroscopic Observations and Data Reductions
Radiative Transfer Models for Atmospheres of Giant Planets

1. Educations

- Aug. 2007 D.Sc.(equal to Ph.D.) Astronomy and Space Science, Kyung Hee University, Republic of Korea
  Dissertation: The Near Infrared High-Resolution Spectroscopy of Jupter and Saturn (Advisor : Prof. Sang Joon Kim)
- Feb. 1999 M.Sc. Astronomy and Space Science, Kyung Hee University, Republic of Korea
- Feb. 1996 B.Sc. Astronomy and Space Science, Kyung Hee University, Republic of Korea

2. Professional Experiences

- NASA Postdoctoral Fellow(ORAU), Jet Propulsion Laboratory/Caltech-NASA, U.S. A. (2008~Present)
- Part-time Lecturer, Chung-Ang University, Republic of Korea (2007)
- Part-time Lecturer, Kyung Hee University, Republic of Korea (2001-2004, 2005-2007)
- Part-time Lecturer, Hanshin University, Republic of Korea (2004-2006)
- Research Assistant, Kyung Hee Astronomical Observatory, Republic of Korea (2002-2003)
- Administrative Assistant (Telescope and Instrument Manager and Operator), Kyung Hee Astronomical Observatory, Republic of Korea (1997-2000)
- Administrative Assistant, Department of Astronomy and Space Science, Kyung Hee University, Republic of Korea (1996-1997)

3. Fellowship and Award

- NASA Postdoctoral Program Fellow / ORAU (2008, 2009 Renewal), U.S.A.

4-1. Refereed Publications

- Sang J. Kim, T. R. Geballe, H.J. Seo, J. H. Kim (2009), Jupiter's Hydrocarbon Polar Brightening: Discovery of 3-micron Line Emission from South Polar CH_4, C_2H_2, and C_2H_6. Icarus, in press
- Haingja Seo, Sang Joon Kim, Joo Hyeon Kim, Thomas R. Geballe, Régis Courtin and Linda R. Brown (2008), Titan at 3 microns: Newly identified spectral features and an improved analysis of haze opacity. Icarus, Vol.199, pp.449-457.
- Sim, Chae Kyung, Sang Joon Kim, Joo Hyeon Kim, Haing Ja Seo, Aeran Jung, and Ji Hyun Kim (2008), Vertical Properties of The Global Haze on Titan Deduced from Methane Spectroscopy between 7100 and 9200A. Journal of Korean Astronomical Society, Vol.41, No.3, pp. 65-76.
- Seo, Haingja, Sang J. Kim, Sungwon Hwang, Aeran Jung, Ji Hyun Kim, Joo Hyeon Kim, Kap-Sung Kim, Jinny Lee, and Minhwan Jang (2007), Synthetic High-resolution Near-IR Spectra of the Sun for Planetary Data Reductions made from ATMOS/Spacelab-3 and Atlas-3. Icarus, Vol.192, pp.287-195.
- Kim, Joo Hyeon, Sang J. Kim, Thomas R. Geballe, Sungsoo S. Kim, and Linda R. Brown (2006), High-Resolution Spectroscopy of Saturn at 3 Microns: CH4, CH3D, C2H2, C2H6, PH3, Clouds, and Haze. Icarus, Vol. 185, pp.476-486.
- Kim, Joo Hyeon, Sang Joon Kim, Kang-Min Kim, Chae Kyung Sim, and Dong Hoon Son (2004), High Resolution Spectroscopy of Titan. Publications of The Korean Astronomical Society, Vol. 19, No. 1, pp.39-46.
- Son, Dong Hoon; Kim, Sang Joon, Kim, Joo Hyun, Kim, Kang-Min, Sung, Eon-Chang, Hyung, Siek (1997), CN, C2 Production rates of Comet Hale-Bopp (C/1995 O1). Publications of The Korean Astronomical Society, Vol. 12, No. 1, pp.99-109.

4-2. Book and Non-refereed publication

5-1. Conferences (As the first author)

Apr. 2009 Characteristics of the Clouds near the North Polar Vortex of Saturn Observed by Cassini/VIMS, The Spring Joint Meeting of The Korean Astronomical Society and The Korean Space Science Society

Dec. 2008 Thunderstorm-Related Clouds of Saturn Observed by Cassini/VIMS, AGU Fall Meeting

Oct. 2008 Thunderstorm-Related Clouds and Atmospheric Structures of Saturn Observed by Cassini/VIMS, DPS Meeting, AAS

Oct. 2007 High-Resolution Spectroscopy of Jupiter near 3 Microns, DPS Meeting, AAS

Oct. 2006 High- and Low-resolution near infrared spectroscopic observations of Jupiter, The Fall Meeting of The Korean Astronomical Society

Apr. 2006 The near infrared L-band spectroscopy of Jupiter, The Spring Meeting of The Korean Space Science Society

Sept.2005 3 Micron High-resolution Spectroscopy of Saturn, 37th DPS Meeting, AAS

Oct. 2003 Study on the detection of CH(A-X, B-X) emissions from Jupiter with BOES, The Fall Meeting of The Korean Astronomical Society

Sep. 2003 Longitudinal and Latitudinal Variations of $CH_4(v_3+v_4-v_4)$ emissions in the mesosphere of Saturn, KAO-ARCSEC Workshop on Astronomy with Large Telescopes,

May. 2003 Spectroscopic Observations of Saturn with SpeX/IRTF, The Spring Meeting of The Korean Space Science Society

Oct. 1999 The Classification and Survey Plan of Asteroids using The Observational Data of The GALEX, The Fall Joint Meeting of The Korean Astronomical Society and The Korean Space Science Society

Apr. 1998 The Reduction and Image Processing of The Infrared Spectroscopic Data of Chiron, The Spring Meeting of The Korean Astronomical Society

Apr. 1997 C_2 Image Observation of Comet Hale-Bopp, The Spring Meeting of The Korean Astronomical Society

5-2. Conferences (As a collaborator)

Apr. 2009 Saturn's north polar region at depth: The North Polar Hexagon and North Polar Cyclone observed over two years by Cassini/VIMS, General Assembly 2009, EGU

Oct. 2008 Seasonal Changes In Saturn's Clouds, DPS, AAS

Oct. 2008 The 3-Micron Continuum Features in High-resolution Spectra of Jupiter, DPS, AAS

Oct. 2008 Saturn's Dynamic Atmosphere at Depth: Physical Characteristics and Zonal Winds Derived from Clouds Near the 2-bar Level and Their Dynamical Implications from Cassini-Huygens/VIMS, DPS, AAS

Sept. 2008 In The Slow Winds of Saturn: Thunderstorms, the String of Pearls, and the Mid-Latitude Annular Cloud, EPSC (European Planetary Science Congress), Abstracts, Vol. 3, EPSC2008-A-00027

June 2008 Synthetic Solar Spectra for Planetary Data Reductions, AOGS

July 2008 Saturn's dynamic atmosphere at depth: Physical characteristics, winds, and spatial constraints on trace gas variability near the 3-bar level and their dynamical implications from Cassini-Huygens/VIMS, "Saturn After Cassini-Huygens" Symposium

Oct. 2007 High-resolution 3-micron Spectral Features of Titan Identified with Updated CH_3D and C_2H_6 Line Lists, DPS, AAS

Oct. 2006 Data reduction of planetary spectra using synthetic solar spectra in infrared region,

The Fall Meeting of The Korean Astronomical Society

Oct. 2006 CH3D absorption bands between 2.86 and 3.10 microns in the high-resolution spectra of Titan, 38th DPS, AAS

Oct. 2006 Synthetic solar spectra out of ATMOS data for the near- and mid-infrared ranges, 38th DPS, AAS

Apr. 2004 The line profile modeling of Infrared solar spectrum using the data of ATMOS, The Fall Meeting of The Korean Astronomical Society

Nov. 2001 Latitudinal Variations of the 2 um Absorption Features of $(H_2)_2$ Dimers in the Atmospheres of Jupiter and Saturn, 33rd DPS, AAS

Nov. 2001 Spectroscopic Observations Result of GEO-Stationary Satellites over The Korean Peninsula, The Fall Meeting of The Korean Space Science Society

Apr. 2000 The Observation System of Satellites and NEOs in : Introduction of The System and Preliminary Observation, The Spring Meeting of The Korean Astronomical Society

6. Talk, Colloquium and Presenatations at non-conference

Aug. 2008 "The Thunderstorm Clouds and Atmospheric Structures of Saturn", JPL Postdoctoral Research Day

May. 2003 "Observations using the Large Telescopes of Hawaii", Departmenet Regular Colloquium, Department of Astronomy and Space Science, Kyung Hee University, Republic of Korea

7. Professional Affiliations

Aug. 2008 ~ Present American Astronomical Society/Affiliate Member (DPS)

Aug. 2008 ~ Present American Geophysical Union

Oct., 1996 ~ Present Korean Astronomical Society

8. Recent Research & Observation Experiences (Feb., 2003~ Present)

- Study on clouds in the atmosphere of Saturn observed by Cassini/VIMS
- Observation Proposal Co-I for BOAO (Bohyunsan Optical Astronomy Observatory, Korea Astronomy and Space science Institute, Apr. 2007, Title: Study on unidentified lines and vertical structures from Saturn and Titan
- Observation Proposal Co-I for BOAO (Bohyunsan Optical Astronomy Observatory, Korea Astronomy and Space science Institute), Jan. 2007, Title: Study on unidentified lines and vertical structures from Saturn and Titan
- Research Assistant, Space Environment Laboratory for Solar-Terrestrial-Planetary Relationship , Advanced Basic Research Laboratory(ABRL), (Jan., 2003 ~ June, 2007)
- Research Assistant, Brain Korea21 (BK21), Ministry of Education & Human Resources

Development, (April 2005 ~ February 2006)

- Observation Proposal Co-I for UKIRT, Title: High Resolution 3 ㎛ Spectroscopy of Molecules and Haze in Jupiter and Saturn, 2006 (March 2006 Observations), Hawaii, U.S.A
- Observation Proposal Co-I for BOAO(Bohyunsan Optical Astronomy Observatory, Korea Astronomy and Space science Institute), 2006, Title: Study on Unidentified lines and the CH(A-X & B-X) emissions from Jupiter
- Observation Proposal Co-I for BOAO(Bohyunsan Optical Astronomy Observatory, Korea Astronomy and Space science Institute), 2005, Title: Study on Unidentified lines and the CH(A-X & B-X) emissions from Titan
- Observation Proposal Co-I for BOAO(Bohyunsan Optical Astronomy Observatory, Korea Astronomy and Space science Institute), 2004, Title: Study on the CH(A-X & B-X) emission from Jupiter and Comet C/2001Q4
- NASA IRTF observations for the study on CH_4 emissions from the mesosphere of Saturn, Feb., 2003, Hawaii, U.S.A.

9. Computer and Engineering Skills

Computer Skills : C, FORTRAN, IDL, and IRAF
Engineering Skills : Lathe and Drilling machine

10. References

Professor Sang Joon Kim (Kyung Hee University, Republic of Korea)
Dr. Kevin H.Baines (Jet Propulsion Laboratory, U.S.A.)
Dr. Thomas R. Geballe (Gemini Observatory, U.S.A.)
Professor Sungsoo S. Kim (Kyung Hee University, Republic of Korea)