

Session Title	[MoA1] 6-1. High Priority Science from Cubesats: Thinking Inside the Box
Date	September 18 (Monday)
Time	17:00~18:30
Room	Room A+B (Yeongju Hall)
Session Chairs	Rudolf von Steiger (International Space Science Institute, Switzerland) Abigail Sheffer (National Academy of Sciences, USA)

[MoA1-1]

17:00~17:20

[Invited] A Report on Cube- and Small-Sats and the System Science of NASA's Living With a Star Program

Madhulika Guhathakurta

NASA Ames Research Center, USA

[MoA1-2]

17:20~17:40

[Invited] Small Satellites are Critical for Science and Society

Alan Morton Title

LM ATC, USA

[MoA1-3]

17:40~17:55

The CubeSat Paradigm: an Evolutionary Approach to Satellite Design

Richard P. Welle, David A. Hinkley, and Brian S. Hardy

The Aerospace Corporation, USA

[MoA1-4]

17:55~18:10

High Priority Solar Science and Lessons Learned from the Miniature X-ray Solar Spectrometer (MinXSS) CubeSat Mission

Thomas N. Woods¹, James P. Mason¹, Christopher S. Moore¹, Andrew Jones¹, Richard Kohnert¹, Scott Palo¹, Amir Caspi², Phillip C. Chamberlin³, and Stanley C. Solomon⁴

¹*University of Colorado, USA*, ²*Southwest Research Institute, USA*, ³*NASA Goddard Space Flight Center, USA*,

⁴*National Center for Atmospheric Research, USA*

[MoA1-5]

18:10~18:30

[Invited] Small Satellites for Space Science (4S) COSPAR Roadmap

Rudolf von Steiger¹ and Robyn M. Millan²

¹*International Space Science Institute, Switzerland*, ²*Dartmouth College, USA*

Session Title [TuA1] 3-2. New Magnetospheric Observations Enabled by Cubesats I

Date September 19 (Tuesday)

Time 09:30~11:00

Room Room A (Yeongju Hall A)

Session Chairs Dong-Hun Lee (Kyung Hee University, Korea)
Guan Le (NASA/GSFC, USA)

[TuA1-1]

09:30~09:45

[Invited] Recent Successes and Future Opportunities in Magnetospheric System Science Enabled by Small Satellites

Vassilis Angelopoulos

University of California, USA

[TuA1-2]

09:45~10:00

[Invited] Heliospheric Science with CubeSats

Shrikanth G Kanekal

NASA Goddard Space Flight Center, USA

[TuA1-3]

10:00~10:15

[Invited] Magnetospheric Imaging of Soft X-rays From the CuPID Cubesat Observatory

B. M. Walsh¹, H. Aryan², L. J. Billingsley², M. R. Collier², H. J. Connor², B. Dingwall³, J. Kujawski⁴, K. D. Kuntz⁵, F. S. Porter², D. G. Sibeck², S. L. Snowden², N. E. Thomas², D. L. Turner⁶, A. Weatherwax⁷, A. Yousuff⁴, and A. Zosuls¹

¹*Boston University, USA*, ²*NASA Goddard Space Flight Center, USA*, ³*NASA Wallops Flight Facility, USA*, ⁴*Drexel University, USA*, ⁵*Johns Hopkins University, USA*, ⁶*The Aerospace Corporation, USA*, ⁷*Merrimack College, USA*

[TuA1-4]

10:15~10:30

[Invited] Distributed Acquisition for Geomagnetic Research (DAGR) for SmallSats

Eftyhia Zesta¹, Guan Le¹, Todd Bonalsky¹, Deirdre Wendel¹, David Simpson¹, Ted Beach², Lindsay Allen², and Odile Clavier²

¹*NASA Goddard Space Flight Center, USA*, ²*CREARE, USA*

[TuA1-5]

10:30~10:45

[Invited] Travel-time Magnetoseismic Observations by Satellite Networks

Peter J. Chi

University of California Los Angeles, USA

[TuA1-6]

10:45~11:00

IGOSat Scintillator Payload for Measuring the Spectrum of Gamma Radiations and Electrons on Low-Earth Orbit

Hien Phan¹, Hana Benhizia¹, P.Laurent^{1,2}, H. Halloin¹, and I. Cojocari¹

¹*Université Paris Diderot, France*, ²*Commisariat à l'énergie et aux énergies alternative, France*

Session Title	[TuB1] 2. Solar System Exploration with Cubesats and SmallSats I
Date	September 19 (Tuesday)
Time	09:30~10:45
Room	Room B (Yeongju Hall B)
Session Chair	Hajime Yano (JAXA, Japan)

[TuB1-1]

09:30~09:45

[Invited] Deep Space Flight Results of the World's First Full-scale 50kg-class Deep Space Probe PROCYON by University of Tokyo

Ryu Funase¹, Atsushi Tomiki², and Yasuhiro Kawakatsu²

¹The University of Tokyo, Japan, ²Japan Aerospace Exploration Agency, Japan

[TuB1-2]

09:45~10:00

Space Research of KHUSAT CubeSat

Jung-Kyu Lee¹, Ho Jin¹, Jongho Seon¹, Dong-Hun Lee¹, Seongwhan Lee^{1,2}, Hyojeong Lee¹, Jehyuck Shin¹, Seonyeong Jeong³, and Ian Garrick-Bethell^{1,4}

¹Kyung Hee University, Korea, ²Intorule Inc., Korea, ³Korea Institute of Ocean Science & Technology, Korea, ⁴University of California, USA

[TuB1-3]

10:00~10:15

[Invited] LunaH-Map (Lunar Polar Hydrogen Mapper): Orbital Neutron Spectroscopy from a 6U CubeSat

C. Hardgrove¹, J. F. Bell III¹, R. Starr², A. Colaprete³, M. Robinson¹, D. Drake⁴, I. Lazbin⁵, G. West⁵, E. B. Johnson⁶, J. Christian⁶, A. Genova³, D. Dunham⁷, B. Williams⁷, D. Nelson⁷, A. Babuscia⁸, P. Scowen¹, K. M. Cheung⁸, A. Klesh⁸, M. Tsay⁹, S. Stem¹⁰, E. Cisneros¹, H. Kerner¹, S. T. West¹, R. J. Amzler¹, Z. Burnham¹, S. Puckett¹, N. Barba¹, and M. Beasley¹¹

¹Arizona State University, USA, ²Catholic University of America, USA, ³NASA Ames Research Center, USA, ⁴Techsource, USA, ⁵Arizona Space Technologies, USA, ⁶Radiation Monitoring Devices, USA, ⁷KinetX, USA, ⁸Jet Propulsion Laboratory/Caltech, USA, ⁹Busek Co., Inc., USA, ¹⁰Blue Canyon Technologies, USA, ¹¹Planetary Resources, USA

[TuB1-4]

10:15~10:30

Lunar Impact Flash and Near-Earth Asteroid Observing Camera on Deep-space 6U Spacecraft EQUULEUS

Shinsuke Abe¹, Masahisa Yanagisawa², Hajime Yano³, and Ryu Funase⁴

¹Nihon University, Japan, ²The University of Electro-Communications, Japan, ³Japan Aerospace Exploration Agency, Japan, ⁴The University of Tokyo, Japan

[TuB1-5]

10:30~10:45

Near Earth Asteroid (NEA) Scout

Julie Castillo-Rogez¹, Les Johnson², Jared Dervan², and Leslie McNutt²

¹Jet Propulsion Laboratory, USA, ²NASA George C. Marshall Space Flight Center, USA

Session Title	[TuC1] 3-1. Observations for the Upper Atmosphere with Micro- and Nano-Satellites I
Date	September 19 (Tuesday)
Time	09:30~11:00
Room	Room C (Baekrok Hall A)
Session Chairs	Young-Sil Kwak (KASI, Korea) Wookyoung Lee (KASI, Korea)

[TuC1-1]

09:30~09:45

[Invited] Observing the Ionosphere with Small Satellites

Larry J. Paxton and Hyosub Kil

Johns Hopkins University Applied Physics Laboratory, USA

[TuC1-2]

09:45~10:00

[Invited] The Ionospheric Climatology Seen by the COSMIC

Wenbin Wang, Alan Burns, Liying Qian, and Jing Liu

HAO/NCAR, USA

[TuC1-3]

10:00~10:15

[Invited] Topside Ionospheric Responses to Storms Observed by Low Earth Orbit Satellites

Jiahao Zhong and Jiuhou Lei

University of Science and Technology of China, China

[TuC1-4]

10:15~10:30

Inversion of the Ionospheric Current Density by Multi-point Synchronous Magnetic Field Measurements

Yiteng Zhang^{1,2}, Lei Li¹, Rui Gao¹, and Xin Meng¹

¹National Space Science of China, Chinese Academy of Science, China, ²University of Chinese Academy of Sciences, China

[TuC1-5]

10:30~10:45

An Implementation and Validation of VisionCube's Payload for Observing Transient Luminous Events

Seho Kim and Dongwon Jung

Korea Aerospace University, Korea

[TuC1-6]

10:45~11:00

Variability of Ionospheric Parameters During Low and High Solar Activity and Assessment of IRI Model

Dinesh Kumar Sharma¹, Malini Aggarwal², and Ananna Bardhan¹

¹Manav Rachna University, India, ²Indian Institute of Geomagnetism, India

Session Title	[TuD1] 1. New Paradigm for Earth Observation Based on CubeSats and SmallSats I
Date	September 19 (Tuesday)
Time	09:30~11:00
Room	Room D (Baekrok Hall B)
Session Chairs	Jason Hyon (NASA/JPL, USA) Shuanggen Jin (Shanghai Astronomical Observatory, China)

[TuD1-1]

09:30~09:50

[Invited] The NASA ESTO InVEST Program and Survey of Recent Flight Results

Charles D. Norton¹, J. Vanderlei Martins², Pamela S. Millar³, William H. Swartz⁴, and Dong L. Wu⁵

¹Jet Propulsion Laboratory, California Institute of Technology, USA, ²University of Maryland Baltimore County, USA, ³NASA Earth Science Technology Office, USA, ⁴Johns Hopkins University Applied Physics Laboratory, USA, ⁵NASA Goddard Space Flight Center, U

[TuD1-2]

09:50~10:10

CYGNSS Operations: Managing a Constellation of 8 Micro-satellites in Low Earth Orbit

Jillian Redfern

Southwest Research Institute, USA

[TuD1-3]

10:10~10:30

TOM – Telematics Earth Observation Small Satellite Formation Mission

K. Schilling¹ and K. Zakšek²

¹University of Würzburg, Germany, ²Zentrum für Telematik, Germany

[TuD1-4]

10:30~10:45

The Payload of 3U Cubesat to Observe Gamma Flashes from Earth and Space

S. Jeong, I. H. Park, N. Vedenkin, V. Agaradahalli, and M. B. Kim

SungKyunkwan University, Korea

[TuD1-5]

10:45~11:00

The Cyclone Global Satellite System (CYGNSS) Mission; Opening the Door to New Science Opportunities

Randy Rose¹, Chris Ruf², and Scott Gleason¹

¹Southwest Research Institute, USA, ²University of Michigan, USA

Session Title [TuA2] 3-2. New Magnetospheric Observations Enabled by Cubesats II

Date September 19 (Tuesday)

Time 11:30~13:00

Room Room A (Yeongju Hall A)

Session Chairs Peter Chi (UCLA, USA)

Larry Kepko (NASA/GSFC, USA)

[TuA2-1]

11:30~11:45

[Invited] The Australian INSPIRE-2 / AU03 CubeSat for the QB50 Project

Iver H. Cairns¹ and the INSPIRE-² team

¹University of Sydney, Australia

[TuA2-2]

11:45~12:00

[Invited] Observations of High-m Ultra-Low Frequency Waves by Low-Earth Orbit Satellites

Guan Le¹ and Peter J. Chi²

¹NASA Goddard Space Flight Center, USA, ²University of California, USA

[TuA2-3]

12:00~12:15

[Invited] Magnetospheric Constellation: Leveraging Space 2.0 for Big Science

Larry Kepko

NASA Goddard Space Flight Center, USA

[TuA2-4]

12:15~12:30

A Super-cluster Cubesat System to Measure the Magnetic Reconnection Layer in the Magnetosphere

Masaaki Yamada¹, Hantao Ji¹, and Michael Paluszek²

¹Princeton University, USA, ²Princeton Satellite System, USA

[TuA2-5]

12:30~12:45

Multi-point Magnetosheath High-speed Jet Observations

Ferdinand Plaschke¹, Carsten Scharlemann^{2,3}, Peter Beck⁴, August Fenz^{2,3}, David Fischer¹, Werner Magnes¹, Rumi Nakamura¹, Alexander Reissner³, Marcus Rennhofer⁵, and Bernhard Seifert³

¹Space Research Institute, Austrian Academy of Sciences, Austria, ²University of Applied Sciences Wiener Neustadt, Austria, ³FOTEC, Austria, ⁴Seibersdorf Laboratories, Austria, ⁵Austrian Institute of Technology, Austria

[TuA2-6]

12:45~13:00

A Multipurpose Mini Space Particle Telescope (MINI-SPT) with High Accuracy, Energy, Time-of-flight and Tracking Measurements Capabilities

Behcet Alpat^{1,2}, Tulun Ergin³, and Emrah Kalemci¹

¹Sabanci University, Turkey, ²Istituto Nazionale di Fisica Nucleare, Italy, ³Tubitak Uzay, Turkey

Session Title	[TuB2] 2. Solar System Exploration with Cubesats and SmallSats II
Date	September 19 (Tuesday)
Time	11:30~13:00
Room	Room B (Yeongju Hall B)
Session Chair	James Bell (Arizona State University, USA)

[TuB2-1]

11:30~11:45

[Invited] Korea Pathfinder Lunar Orbiter Mission: Mission Overview & Science Goals

Eunhyeuk Kim

Korea Aerospace Research Institute, Korea

[TuB2-2]

11:45~12:00

Aoba-VELOX 5 Mission for the Observation of the Lunar Horizon Glow

Jose Rodrigo Cordova Alarcon¹, Necmi Cihan Örgür¹, Sangkyun Kim¹, Tran Quang Vinh², Lim Wee Seng², Bui Tran Duy Vu², Cheng Tee Hiang², and Mengu Cho¹

¹Kyushu Institute of Technology, Japan, ²Nanyang Technology Institute, Singapore

[TuB2-3]

12:00~12:15

CuSP: The CubeSat Mission for Studying Solar Particles

Frédéric Allegrini¹ and the CuSP Team

¹Southwest Research Institute, USA

[TuB2-4]

12:15~12:30

ARKA Small Explorer for Space Observations of the Sun

Sergey Bogachev¹, Sergey Kuzin¹, Andrey Perzov¹, and Alexander Shakhanov²

¹Lebedev Institute of the Russian Academy of Sciences, Russia, ²Lavochkin Association, Russia

[TuB2-5]

12:30~12:45

CubeSAT X-ray Telescope (CubeX) for Elemental Abundance Mapping of Airless Bodies and X-ray Pulsar Navigation

Jaesub Hong¹, Suzanne Romaine², Almus Kenter², Rebecca A. Masterson³, Larry Nittler⁴, Keith Gendreau⁵, Branden Allen¹, Ralph Kraft², Ian Crawford⁶, Martin Elvis², Richard Binzel³, William Boynton⁷, Jonathan Grindlay¹, and Brian Ramsey⁸

¹Harvard University, USA, ²Smithsonian Astrophysical Observatory, USA, ³Massachusetts Institute of Technology, USA, ⁴Carnegie Institution Of Washington, USA, ⁵NASA Goddard Space Flight Center, USA, ⁶Birkbeck College, UK, ⁷University Of Arizona, USA

[TuB2-6]

12:45~13:00

India's Mission to Mars Cost Less than the Movie Gravity: Multidimensional View in Engineering Education

Pavan Kumar¹ and Meenu Rani²

¹Kumaun University, India, ²G.B. Pant National Institute of Himalayan Environment & Sustainable Development, India

Session Title	[TuC2] 3-1. Observations for the Upper Atmosphere with Micro- and Nano-Satellites II
Date	September 19 (Tuesday)
Time	11:30~13:00
Room	Room C (Baekrok Hall A)
Session Chairs	Geonhwa Jee (Korea Polar Research Institute, Korea) Qian Wu (National Center for Atmospheric Research, USA)

[TuC2-1]

11:30~11:45

[Invited] Spectral Analyses of Airglow Imaging

Takuji Nakamura^{1,2}, Takashi S. Matsuda^{1,2}, Mitsumu K. Ejiri^{1,2}, Masaki Tsutsumi^{1,2}, Yoshihiro Tomikawa^{1,2}, and Masaru Kogure^{1,2}

¹National Institute of Polar Research, Japan, ²The Graduate University for Advanced Studies, Japan

[TuC2-2]

11:45~12:00

[Invited] Study on Atmosphere-Ionosphere Coupling as Earthquake Precursor with using Satellite In-Situ and Remote Observations

Kwangsun Ryu¹, K.-I. Oyama², C. H. Chen³, L. Bankov⁴, D. Minakshi⁵, J. Y. Liu⁶, T. Kodama⁷, and H. Liu²

¹KAIST, Korea, ²Kyushu University, Japan, ³National Cheng Kung University, Taiwan, ⁴Bulgarian Academy of Sciences, Bulgaria, ⁵Gauhati University, India, ⁶National Central University, Taiwan, ⁷Japan Aerospace Exploration Agency, Japan

[TuC2-3]

12:00~12:15

The Role of Satellite-based Observations in Understanding the Vertical and Lateral Coupling of MLT Region Over Southern Hemisphere: An Overview

Eswaraiah Sunkara, Yong Ha Kim, and Jaewook Lee

Chungnam National University, Korea

[TuC2-4]

12:15~12:30

[Invited] COSMIC Observation and Model Simulation of the Semi-Annual Oscillation in Ionosphere

Qian Wu¹, W. S. Schreiner², B. Ho², H.-L. Liu¹, B. Emery¹, and Liying Qian¹

¹NCAR, USA, ²UCAR, USA

[TuC2-5]

12:30~12:45

Responses of Nitric Oxide to High-speed Solar Wind Stream in the Stratosphere and Lower Mesosphere

Ji-Hee Lee¹, Young-Sil Kwak^{2,3}, Geonhwa Jee^{1,3}, Young-Sook Lee², Sang-bum Hong¹, Heejin Hwang¹, and Dae-Yong Lee⁴

¹Korea Polar Research Institute, Korea, ²Korea Astronomy and Space Science Institute, Korea, ³Korea University of Science and Technology, Korea, ⁴Chungbuk National University, Korea

[TuC2-6]

12:45~13:00

LFSC-Daedalus: A Low-Flying Spacecraft for the Exploration of the Lower Thermosphere and Ionosphere

Theodoros E. Sarris¹, Elsayed R. Talaat², Vaios Lappas³, Emmanuel T. Sarris³, and Errico Armandillo⁴

¹Democritus University of Thrace, Greece, ²NASA HQ, USA, ³Space Programmes Unit, Greece, ⁴European Space Agency, The Netherlands

Session Title	[TuD2] 1. New Paradigm for Earth Observation Based on CubeSats and SmallSats II
Date	September 19 (Tuesday)
Time	11:30~13:00
Room	Room D (Baekrok Hall B)
Session Chairs	shuanggen Jin (Shanghai Astronomical Observatory, China) Anthony Freeman (NASA/JPL, USA)

[TuD2-1]

11:30~11:45

Modelling the J2-Perturbed LEO Solar Power Satellite Formation

Aswathi M. and Shanmugha Sundaram G. A.

Amrita University, India

[TuD2-2]

11:45~12:00

16U BUS for EO Missions

Vedenkin Nikolay¹, Kim Paulo¹, and Malinin Alexander²

¹SatByul Co., Ltd., Korea, ²JSC DAURIA AEROSPACE, Russia

[TuD2-3]

12:00~12:15

Precursor Mission to do 3D Ionosphere Mapping via CubeSats with an Atomic Clock onboard

Kateryna Aheieva¹, Rahmi Rahmatillah¹, Ryotaro Ninagawa¹, Hirokazu Masui¹, Takashi Yamauchi¹, Sangkyun Kim¹, Mengu Cho¹, Chow Chee Lap², Tse Man Siu², and Li King Ho Holden²

¹Kyushu Institute of Technology, Japan, ²Nanyang Technological University, Singapore

[TuD2-4]

12:15~12:30

RAVAN: A Pathfinder Demonstrating a Miniature New Instrument for Measuring Earth's Energy Budget

William H. Swartz¹, Steven R. Lorentz², Philip M. Huang¹, John Carvo³, Nolan M. Reilly¹, Sonia M. Reilly¹, and Dong L. Wu⁴

¹Johns Hopkins University Applied Physics Laboratory, USA, ²L-¹ Standards and Technology, USA, ³Blue Canyon Technologies, USA, ⁴NASA Goddard Space Flight Center, USA

[TuD2-5]

12:30~12:45

Downlink Earth Observation Data: Performance, Limitations and Decisions

Mikhail Ryazanskiy and Nikolay Vedenkin

SatByul Co., Ltd., Korea

[TuD2-6]

12:45~13:00

Technique for Remote Sensing of Droplets of Sulfuric Acid in the Stratosphere

Wenbo Sun¹, Gorden Videen², Yongxiang Hu³, and Rosemary R. Baize³

¹Science Systems and Applications, Inc., USA, ²US Army Research Laboratory, USA, ³NASA Langley Research Center, USA

Session Title	[TuA3] 3-3. Interaction of Solar Wind and Earth's Bow Shock: Recent Progresses in Observations and Modeling
Date	September 19 (Tuesday)
Time	15:00~16:30
Room	Room A (Yeongju Hall A)
Session Chair	EnSang Lee (Kyung Hee University, Korea)

[TuA3-1] 15:00~15:15

[Invited] Impact of Shock Front Non-stationarity on Particle Dynamics at the Earth's Bow Shock

Zhongwei Yang¹, Ying D. Liu¹, and George K. Parks²

¹National Space Science Center, CAS, China, ²University of California Berkeley, USA

[TuA3-2] 15:15~15:30

SERB, a Small Satellite Dedicated to the Sun Earth Relationship

M. Meftah, P. Keckhut, A. Hauchecorne, S. Bekki, A. Sarkissian, and L. Damé

CNRS-LATMOS, Université Paris-Saclay, France

[TuA3-3] 15:30~15:45

Scientific Goals of Small Scale MagNetospheric and Ionospheric Plasma Experiments (SNIPE) Mission

Junga Hwang, Jaejin Lee, Jongdae Shon, Jaeheung Park, Young-Sil Kwak, Uk-Won Nam, and Won-Kee Park

Korea Astronomy and Space Science Institute, Korea

[TuA3-4] 15:45~16:00

[Invited] Potential Collaboration Between ERG (Arase) and Other Small Satellites

Yukinaga Miyashita¹, Yoshizumi Miyoshi², and Iku Shinohara³

¹Korea Astronomy and Space Science Institute, Korea, ²Nagoya University, Japan, ³Japan Aerospace Exploration Agency, Japan

[TuA3-5] 16:00~16:15

[Invited] Dayside Transient Event

S. H. Lee¹, D. G. Sibeck¹, M. V. D. Silveira¹, K.-J. Hwang^{1,2}, C. M. Carr³, S. Schwartz³, I. J. Cohen⁴, B. L. Giles¹, R. B. Torbert⁵, C. T. Russell⁶, H. Wei⁶, M. Lester⁷, and J. L. Burch⁸

¹NASA Goddard Space Flight Center, USA, ²University of Maryland, USA, ³Imperial College, UK, ⁴The Johns Hopkins University Applied Physics Laboratory, USA, ⁵University of New Hampshire, USA, ⁶University of California, USA, ⁷University of Leicester, UK, ⁸S

[TuA3-6] 16:15~16:30

Multifractal Detrended Fluctuation Analysis of Solar Wind Plasma and Interplanetary Magnetic Field during Geomagnetic Storms

D. K. Sondhiya

Barkatullah University, India

Session Title	[TuB3] 2. Solar System Exploration with Cubesats and SmallSats III
Date	September 19 (Tuesday)
Time	15:00~16:30
Room	Room B (Yeongju Hall B)
Session Chair	Young-Jun Choi (KASI, Korea)

[TuB3-1]

15:00~15:15

[Invited] The Planetary Science Enabled by the New Generation of SmallSats and Miniaturized Scientific Instruments Study Summary

John D. Baker

Jet Propulsion Laboratory, USA

[TuB3-2]

15:15~15:30

On Self-Aware Adaptive Mesh Spacecraft Fleets

K. H. Glassmeier, M. Berekovic, R. Ernst, S. Fekete, A. Jankowski, H. Michalik, E. Stoll, and U. Motschmann
Technische Universität Braunschweig, Germany

[TuB3-3]

15:30~15:45

Small Satellites for X-ray Exploration of the Solar System

Yuichiro Ezo¹, Yoshizumi Miyoshi², Satoshi Kasahara³, Tomoki Kimura⁴, Kumi Ishikawa⁵, Masaki Fujimoto⁵, Kazuhisa Mitsuda⁵, Takaya Ohashi¹, Hironori Sahara¹, and G. Branduardi-Raymont⁶

¹*Tokyo Metropolitan University, Japan*, ²*Nagoya University, Japan*, ³*University of Tokyo, Japan*, ⁴*RIKEN, Japan*, ⁵*ISAS/JAXA, Japan*, ⁶*University College London, UK*

[TuB3-4]

15:45~16:00

Search for Stable Orbits Around 1999 KW4

Thais C. Oliveira and Antonio F. B. A. Prado

National Institute for Space Research, Brazil

[TuB3-5]

16:00~16:15

Overview of Instrumental Package Combined with Nuclear- and Hyper- spectrometers for Geological Investigations of Near-earth Objects

Hiroshi Nagaoka¹, Nobuyuki Hasebe¹, Shoji Torii¹, Tomoyuki Miyashita¹, Kaoru Shimamoto¹, Tohru Ohta¹, Timothy J. Fagan¹, Masayuki Naito¹, Junya Ishii¹, Daisuke Aoki¹, Takuto Adachi¹, Mana Shikishima¹, Eido Shibamura¹, Akira Hitachi¹, Sota Shimizu², Makiko Ohtake³, Kyeong Ja Kim⁴, Jesús Martínez-Frías⁵, José A. Matias Lopes⁶, Valery V. Dmitrenko⁷, and Sergey Ulin⁷

¹*Waseda University, Japan*, ²*Keio University, Japan*, ³*Japan Aerospace Exploration Agency, Japan*, ⁴*Korea Institute of Geoscience and Mineral Resources, Korea*, ⁵*CSIC-Complutense University of Madrid, Spain*, ⁶*University of Coimbra, Portugal*, ⁷*National Research Nuclear University MEPhI, Russia*

[TuB3-6]

16:15~16:30

A New Concept of Asteroid Mitigation using Expulsion Payload in Spacecraft System

C.Sathiyavel¹ and Bakkiyaraj²

¹MSME, India, ²Anna University, India

Session Title	[TuC3] 3-1. Observations for the Upper Atmosphere with Micro- and Nano-Satellites III
Date	September 19 (Tuesday)
Time	15:00~16:30
Room	Room C (Baekrok Hall A)
Session Chairs	Hyosub Kil (JHU/APL, USA) Jaeheung Park (KASI, Korea)

[TuC3-1]	15:00~15:15
[Invited] Signatures of Medium-scale Traveling Ionospheric Disturbances in Swarm Satellite Observations	
Hyosub Kil ¹ , Woo Kyoung Lee ² , Larry J. Paxton ¹ , Young-Sil Kwak ² , and Geonhwa Jee ³	
¹ Johns Hopkins University Applied Physics Laboratory, USA, ² Korea Astronomy and Space Science Institute, Korea, ³ Korea Polar Research Institute, Korea	

[TuC3-2]	15:15~15:30
[Invited] On Characterizing of Ionospheric Holes Made by North Korea Ballistic Missiles using 4D-var	
Nicholas Ssessanga and Yong Ha Kim	
Chungnam National University, Korea	

[TuC3-3]	15:30~15:45
Statistical Analysis of UV Emissions from TIMED GUVI Data	
Susanna Bekker and Iliya Ryakhovskiy	
Institute of Geosphere Dynamics RAS, Russia	

[TuC3-4]	15:45~16:00
Simultaneous Registration of VLF Signals by Onboard Instruments of “Chibis-M” Microsatellite And by Ground-based Receivers	
I.A. Ryakhovsky ¹ , B.G. Gavrilov ¹ , S.I. Klimov ² , Yu.V. Poklad ¹ , Yu.I. Zetzer ¹ , and S.Z. Bekker ¹	
¹ Institute of Geospheres Dynamics, Russia, ² Space Research Institute, Russia	

[TuC3-5]	16:00~16:15
Quasi-thermal Noise and Shot Noise Spectroscopy on a CubeSat in Earth’s Ionosphere	
Ronald Maj and Iver H. Cairns	
University of Sydney, Australia	

[TuC3-6]	16:15~16:30
Korean Region Ionosphere Modeling using Ionospheric Data Assimilation Four-Dimensional (IDA4D) Algorithm	
Chalachew Kindie Mengist ^{1,2} , Yong Ha Kim ¹ , and Nicholas Ssessanga ¹	
¹ Chungnam National University, Korea, ² Adama Science and Technology University, Ethiopia	

Session Title	[TuD3] 1. New Paradigm for Earth Observation Based on CubeSats and SmallSats III
Date	September 19 (Tuesday)
Time	15:00~16:30
Room	Room D (Baekrok Hall B)
Session Chairs	Anthony Freeman (NASA/JPL, USA) Jason Hyon (NASA/JPL, USA)

[TuD3-1] 15:00~15:15

[Invited] (Proposed) Space Environments and Effects Monitoring with a Cubesat for JPL Earth and Planetary Science Missions

Insoo Jun, Maria De Soria-Santacruz Pich, and Wousik Kim
Jet Propulsion Laboratory, USA

[TuD3-2] 15:15~15:30

NewSpace-derived Small Platforms are Generating Opportunities for Research Projects

Hélène Boithias
Airbus, France

[TuD3-3] 15:30~15:45

International Constellation of CubeSats/SmallSats for Hazards Early Detection

Y. Tony Song
Jet Propulsion Laboratory, USA

[TuD3-4] 15:45~16:00

Big Data Framework Design for Nanosatellite Constellation Using Multi-Dimensional Array Database

Sanghyuck Han¹, Yeonju Choi¹, and Jae-Pil Park^{2,3}

¹Korea Aerospace Research Institute, Korea, ²Yonsei University, Korea, ³NARA Space Technology, Korea

[TuD3-5] 16:00~16:15

Relative Orbital Motion of Two Charged Objects near a Spaceborne Radially-Directed Rotating Magnetic Dipole

Chao Peng and Shuquan Wang
Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, China

[TuD3-6] 16:15~16:30

A Novel CubeSat Constellation for Enhanced Remote Sensing

Kishore Pasi¹, Kishore J.K¹, and Rama Rao T²

¹ISAC/ISRO, India, ²SRM University, India

Session Title	[P1] Poster Session I
Date	September 19 (Tuesday)
Time	16:30~18:30
Room	Event Hall A

[P1-1]

16:30~18:30

Ultra-small Space Cluster for Scientific Experiments

Vedenkin Nikolay¹, Pozanenko Alexei², and Partsevsky Nikita³

¹SatByul Co., Ltd., Korea, ²Space Research Institute, Russia, ³JSC DAURIA AEROSPACE, Russia

[P1-2]

16:30~18:30

Small Satellite as an Orbital Platform for the Study of the Long-term Influence of Space Conditions on Higher Plant

Vasyl Brykov¹, Boris Rassamakin², Olga Artemenko¹, Natalia Zaimenko³, and Elizabeth Kordyum¹

¹M.G. Kholodny Institute of Botany, NASU, Ukraine, ²National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic

Institute", Ukraine, ³M.M. Gryshko National Botanical Garden, NASU, Ukraine

[P1-3]

16:30~18:30

Adaptation of the NeQuick 2 Ionospheric Model to the Region near Geomagnetic of 28°

Nchimunya Mwiinga and Patrick Sibanda

University of Zambia, Lusaka, Zambia

[P1-4]

16:30~18:30

The Study on Spatial Correlation of EMIC Waves by using Multi Satellite Observations

Sung-Hwan Lee¹, Dong-Hun Lee¹, and Hyomin Kim²

¹Kyung Hee University, Korea, ²Center for Solar-Terrestrial Research, USA

[P1-5]

16:30~18:30

Reference Orbit Construction for Stable Tetrahedral Satellite Formation

Yaroslav Mashtakov¹, Anatoli Petrukovich², and Sergey Shestakov¹

¹Keldysh Institute of Applied Mathematics of Russian Academy of Sciences, Russia, ²Space Research Institute of Russian Academy of Sciences, Russia

[P1-6]

16:30~18:30

Temporal and Spatial Characteristics of the High-m Poloidal Alfvén Wave

Jiwon Choi, Dong-Hun Lee, Khan-Hyuk Kim, Ensang Lee, and Yong-Jae Moon

Kyung Hee University, Korea

[P1-7]

16:30~18:30

EMIC Waves Accompanied by a Sudden Decrease in Ambient Magnetic Fields

Hyomin Kim¹, Khan-Hyuk Kim², Louis Lanzerotti¹, Andrew Gerrard¹, Dong-Hun Lee², Dae-Young Lee³, and Rualdo Soto-Chavez¹

¹New Jersey Institute of Technology, USA, ²Kyung Hee University, Korea, ³Chungbuk National University, Korea

[P1-8]

16:30~18:30

Spectrometry of Charged Particle Flows Aboard Small Spacecraft

Timofeev V. E.¹ and Khristiforova A. G.²

¹*Yu. G. Shafer Institute of Cosmophysical Research and Aeronomy, SB RAS, Russia*, ²*Zhataysky College, Russia*

[P1-9]

16:30~18:30

Resonant Absorption and Amplification of Magnetohydrodynamic Waves in a Stratified Plasma with Inhomogeneous Shear Flows

Seulong Kim and Kihong Kim

Ajou University, Korea

[P1-10]

16:30~18:30

Passage of ICMEs, Their Associated Shock Structure and Transient Modulation of Galactic Cosmic Rays

Anand Kumar¹ and Badruddin^{1,2}

¹*Aligarh Muslim University, India*, ²*King Abdul Aziz University, Saudi Arabia*

[P1-11]

16:30~18:30

Statistical Analysis of Ion Heating in the Downstream Region of the Quasi-perpendicular Bow Shock

Hee-Eun Kim¹, Ensang Lee¹, George K. Parks², Naiguo Lin², Khan-Hyuk Kim¹, and Dong-Hun Lee¹

¹*Kyung Hee University, Korea*, ²*University of California, USA*

[P1-12]

16:30~18:30

Numerical Tests of Steepening Shocks' Formation and Interaction with the Stationary Magnetopause in the Solar Wind

Kyung-Im Kim¹, Dong-Hun Lee¹, Ensang Lee¹, and Dongsu Ryu²

¹*Kyung Hee University, Korea*, ²*UNIST, Korea*

[P1-13]

16:30~18:30

Groups of Meteorite-producing Carbonaceous Chondrites and Their Sources

N. A. Konovalova, A. A. Ibrohimov, and T. M. Kalashnikova

Institute of Astrophysics of the Academy of Sciences of the Republic of Tajikistan, Tajikistan

[P1-14]

16:30~18:30

Sensitivity of Cassini Radio Ranging Measurements to a Hypothetical Distant Planet

Ryan S. Park, William M. Folkner, Robert A. Jacobson, and James G. Williams

Jet Propulsion Laboratory, California Institute of Technology, USA

[P1-15]

16:30~18:30

Estimation of Interior Density Distribution for Small Bodies

Masanori Kanamaru and Sho Sasaki

Osaka University, Japan

[P1-16]

16:30~18:30

Thermal Snap on the Bench of a Telescope for Small Satellites

Asanuma Norihiro and Miyashita Tomoyuki
Waseda University, Japan

[P1-17]

16:30~18:30

A Preliminary Design of the Korea Pathfinder Lunar Orbiter Magnetometer (KMAG)

Jehyuck Shin¹, Ho Jin¹, Hyojeong Lee¹, Jung-Kyu Lee¹, Seongwhan Lee², Mangyu Lee¹, Seungah Lee¹, Khan-Hyuck Kim¹, Derac Son³, and Ian Garrick-Bethell^{1,4}

¹*Kyung Hee University, Korea*, ²*Intorule Inc., Korea*, ³*Sensorpia Inc., Korea*, ⁴*University of California, USA*

[P1-18]

16:30~18:30

Analysis on Optimal Delta-Vs to Deploy a Lunar CubeSat Impactor During the Mother-ship's Flight Inside of Lunar Sphere of Influences

Young-Joo Song¹, Ho Jin², and Bang-Yeop Kim¹

¹*Korea Aerospace Research Institute, Korea*, ²*Kyung Hee University, Korea*

[P1-19]

16:30~18:30

Physical Properties of the Superbolide of Tajikistan by Results of Combined Satellite and Ground-based Observations

M. Narziev, and H. Khujanazarov

Institute of Astrophysics of the Academy of Sciences of the Republic of Tajikistan, Tajikistan

[P1-20]

16:30~18:30

Science Data Management for Korea Lunar Exploration Program: Development Plan and Key Functions

Joo Hyeon Kim, Yeon Ju Choi, and Bang-Yeop Kim

Korea Aerospace Research Institute, Korea

[P1-21]

16:30~18:30

Applications of a Tether Fixed in the Moon to Maneuver Spacecrafts

Jorge Martins Nascimento and Antonio F. B. A. Prado

Instituto Nacional de Pesquisas Espaciais, Brazil

[P1-22]

16:30~18:30

Gamma-ray and Neutron Spectrometer for Microsatellites; Numerical Estimation of Elemental Compositions

M. Naito, J. Ishii, N. Hasebe, H. Nagaoka, and E. Shibamura

Waseda University, Japan

[P1-23]

16:30~18:30

Waseda SAT-X: --- Miniaturized Deep Space Probe ---

T. Miyashita, N. Hasebe, S. Torii, S. Shimamoto, T. Ohta, T. J. Fagan, H. Nagaoka, M. Naito, and Y. Sato

Waseda University, Japan

[P1-24]

16:30~18:30

Magnetic Field Measurements on the Lunar Surface: Lessons Learned and Future Prospects

Peter J. Chi

University of California Los Angeles, USA

[P1-25]

16:30~18:30

Spectrophotometry of Comets 41P/Tuttle-Giacobini-Kresak, C/2014 Q2 (Lovejoy) and C/2013 US10 (Catalina)

Ponomarenko V. A., Simon A. O., and Churyumov K. I.

Taras Shevchenko National University of Kyiv, Ukraine

[P1-26]

16:30~18:30

Dynamic Theory of Charged Dust Grains above The Lunar Surface

S.B. Rakesh Chandran¹, S.R. Rajesh¹, A. Abraham¹, R. Devika Hari¹, Gopika V. Unnithan¹, G. Renuka², and Chandu Venugopal³

¹University of Kerala, India, ²Kerala State Council for Science, Technology and Environment, India, ³M.G. University, India

[P1-27]

16:30~18:30

Study of Gravity Wave Activity and Phase Speed Over the East Antarctic

Masaru Kogure^{1,2}, Takuji Nakamura^{1,2}, Yoshihiro Tomikawa^{1,2}, Masaki Tsutsumi^{1,2}, Takanori Nishiyama^{1,2}, and Mitsumu K. Ejiri^{1,2}

¹The Graduate University for Advanced Studies, Japan, ²National Institute of Polar Research, Japan

[P1-28]

16:30~18:30

Tropical Ionization Trough Identified by Swarm Satellite Observations

Woo Kyoung Lee¹ and Hyosub Kil²

¹Korea Astronomy and Space Science Institute, Korea, ²Johns Hopkins University Applied Physics Laboratory, USA

[P1-29]

16:30~18:30

Satellite Observations of Variability of Tropical Mesopause and Comparison with Meteor Radar Observations

G. Venkat Chalapathi¹, S. Eswaraiah², M. Venkat Ratnam³, P. Vishnu Prasanth⁴, and S.V.B. Rao⁵

¹Loyola Degree College, India, ²Chungnam National University, Korea, ³National Atmospheric Research Laboratory, India, ⁴Sri Vidyankethan Engineering College, India, ⁵Sri Venkateswara University, India

[P1-30]

16:30~18:30

Ionospheric Anomalies Response to Earthquakes of Different Magnitudes during Solar Minimum

Taehun Choi and Sun Mie Park

Korea Science Academy of KAIST, Korea

[P1-31]

16:30~18:30

Ionospheric Response of X2.2 Solar Flare Occurred on 15 February, 2011 as Observed Over South Korea

Malini Aggarwal¹, K. S. Cho², and Y. S. Kwak²

¹Indian Institute of Geomagnetism, India, ²Korea Astronomy and Space Science Institute, Korea

[P1-32]

16:30~18:30

Understanding of the Sources of the Middle-latitude F-region Field-aligned Irregularities through Ground-based and Satellite Simultaneous Observations

Young-Sil Kwak¹, Hyosub Kil², Tae-Yong Yang³, Jeaheung Park¹, Jong-Min Choi², Tony Kim⁴, and Vladimir Sotnikov⁴

¹Korea Astronomy and Space Science Institute, Korea, ²Johns Hopkins University Applied Physics Laboratory, USA, ³Korea Polar Research Institute, Korea, ⁴Air Force Research Laboratory, USA

[P1-33]

16:30~18:30

Spatial and Temporal Analysis of Tropospheric Nitrogen Dioxide Column Densities over Pakistan

Rabbia Murtaza and Muhammad Fahim Khokhar

National University of Sciences and Technology, Pakistan

[P1-34]

16:30~18:30

Seasonal Dynamics of Vegetation and Dust Emission in Dryland

Buho Hoshino¹, Yuki Sofue², and Kenji Kai³

¹Rakuno Gakuen University, Japan, ²Chiba University, Japan, ³Nagoya University, Japan

[P1-35]

16:30~18:30

Environmental Applications of Remote Sensing and GIS in Egypt

Ahmed M. El-Zeiny

National Authority for Remote Sensing and Space Sciences, Egypt

[P1-36]

16:30~18:30

Potential of Bare Land Of Thatta District for Jatropha Curcas Cultivation Using Geospatial Techniques

Muhammad Arslan, Arjumand Zaidi, and Saad Malik

Institute of Space Technology, Pakistan

[P1-37]

16:30~18:30

Development of a Soft Gamma-ray Detector for the Study of Terrestrial Gamma-ray Flashes

Ahlam Al Qasim, Aisha Al Mannaei, Fatema Al Khouri, Adriano Di Giovanni, Francesco Arneodo, Philip Panicker, and Mallory Roberts

New York University Abu Dhabi, United Arab Emirates

[P1-38]

16:30~18:30

Characteristics of Asian Outflow Aerosols based on Satellite and Ground based Observations

Sung-Kyun Shin and Kwon-Ho Lee

Gangneung-Wonju National University, Korea

[P1-39]

16:30~18:30

The Toolchain for Development of Radiation Monitoring Telescopes

N. P. Chirskaya, I. A. Zolotarev, L. S. Novikov, and V. I. Tulupov

Lomonosov Moscow State University, Russia

[P1-40]

16:30~18:30

Influence of Dust Storm on Atmospheric Aerosols over Greater Noida

Manish Sharma¹, Rajesh Kumar¹, and Ramesh. P. Singh²

¹Sharda University, India, ²Chapman University, USA

[P1-41]

16:30~18:30

Analysis of Satellite-derived Albedo Products Across an African Savanna Fence-line Contrast

Naveen R Shahi, Barend F.N. Erasmus, and Michel Verstraete

University of Witwatersrand, South Africa

[P1-42]

16:30~18:30

Correlation between Satellite Observations of Aerosol Optical Depth and Particulate Matter Concentrations at Surface in Lahore and Multan, Pakistan

Tehreem Mustansar and Fahim Khokhar

National University of Sciences and Technology, Pakistan

[P1-43]

16:30~18:30

Analysis of Cloud Structure Dynamics during Cloud Burst Events Over India

P Samantray^{1,2} and K C Gouda¹

¹CSIR ⁴PI, India, ²Visvesvaraya Technological University, India

[P1-44]

16:30~18:30

Developmental Tasks And Synthesis Of Geospace Self-organizing Sensor Networks

Vladimir Mochalov

IKIR FEB RAS, Russia

[P1-45]

16:30~18:30

GIS and Remote Sensing based LULC Feature Extraction for Topographic Map Updating in Sylhet City, Bangladesh

Shiblee SM Sujauddin Pathan

Digital Mapping Centre, Bangladesh

[P1-46]

16:30~18:30

Automated Radiometric Calibration for SuperView-1 01&02 Over Baotou Site

Chuanrong Li^{1,2}, Lingli Tang^{1,2}, Lingling Ma^{1,2}, and Shi Qiu^{1,2}

¹Key Laboratory of Quantitative Remote Sensing Information Technology, CAS, China, ²Academy of Opto-Electronics, CAS, China

[P1-47]	16:30~18:30
Seismo-Ionosphere Precursors Observed for Nepal Earthquake	
Sanjay Kumar <i>Banaras Hindu University, India</i>	
[P1-48]	16:30~18:30
Space Weather Influence on High Latitude Ionospheric TEC during the Low Solar Activity, Antarctica	
Purushottam Bhawre ¹ and P. K. Purohit ² <i>¹Barkatullah University, India, ²National Institute of Technical Teachers' Training and Research, India</i>	
[P1-49]	16:30~18:30
Investigation of Solar Flare Effects on GPS TEC and Their Positional Dependence at Low, Mid and High Latitudes	
Azad A. mansoori ¹ , Aslam A. M. ¹ , and P. K. Purohit ² <i>¹Barkatullah University, India, ²National Institute of Technical Teachers' Training and Research, India</i>	
[P1-50]	16:30~18:30
Effect of X and M Class Solar Flare on Ionospheric Current at Dip Equator	
N. M. N. Annadurai and N. S. A. Hamid <i>Universiti Kebangsaan Malaysia, Malaysia</i>	
[P1-51]	16:30~18:30
Compact Dayglow Photometer for Spaceborne Aeronomy	
C. Vineeth and T. K. Pant <i>Vikram Sarabhai Space Centre, India</i>	
[P1-52]	16:30~18:30
Variability of Total Electron Content and Scintillation (S4) Over Auroral Region at Maitri, Antarctica during Solar Minimum	
Prakash Khatarkar, Madhuri Singh, and S. D. Mishra <i>Atal Bihari Vajpayee Hindi University, India</i>	
[P1-53]	16:30~18:30
Classification of Regional Ionospheric Disturbance Based on Machine Learning Techniques	
Merve Begüm Terzi ¹ , Orhan Arıkan ¹ , Secil Karatay ² , and Feza Arıkan ³ <i>¹Bilkent University, Turkey, ²Kastamonu University, Turkey, ³Hacettepe University, Turkey</i>	
[P1-54]	16:30~18:30
Anomalies in Ion Density and Temperature during Moderate and High Magnitude Seismic Activity	
Ananna Bardhan ^{1,2} , D. K. Sharma ² , and S. Kumar ¹ <i>¹Manav Rachna International University, India, ²Manav Rachna University, India</i>	
[P1-55]	16:30~18:30
The Biospheric Life Support - Integrating Biological Regeneration into Protection of Humans in Space	
Maurício Teixeira Rocha <i>Student, Brazil</i>	

Session Title	[WeA1] 3-5. Radiation Belts Observations using Small Satellites: What Would be the Best Way to Fill Data Gaps?
Date	September 20 (Wednesday)
Time	09:30~11:00
Room	Room A (Yeongju Hall A)
Session Chairs	Vincent Maget (ONERA, France) Bernard Blake (The Aerospace Corporation, USA)

[WeA1-1]

09:30~09:45

Generation of VLF Waves to Provide Efficient Interaction with Energetic Electrons in a Radiation Belt

V. I. Sotnikov and T. C. Kim

Air Force Research Laboratory, USA

[WeA1-2]

09:45~10:00

[Invited] Observations of Energetic Electron Precipitation with the FIREBIRD Cubesats

John Sample¹, Dave Klumpar¹, Mykhaylo Shumko¹, Arlo Johnson¹, and Harlan Spence²

¹Montana State University, USA, ²University of New Hampshire, USA

[WeA1-3]

10:00~10:15

[Invited] Utilizing GNSS Radio Occultation Sensors on Space Weather CubeSat Missions

Rebecca L. Bishop

The Aerospace Corporation, USA

[WeA1-4]

10:15~10:30

[Invited] A Compact Instrument Design to Measure both Ion and Electron Radiation Belt Seed Populations and Ring Current in the Range 0-80 keV

B. Lavraud¹, A. Cara¹, D. Payan², T. Camus¹, Y. Ballot³, O. Chassela¹, H. Tap⁴, O. Bernal⁴, M. Berthomier⁵, P. Devoto¹, A. Fedorov¹, J. Rouzaud¹, J.-A. Sauvaud¹, J. Rubiella-Romeo¹, H.-C. Seran¹, and et J.-D Techer⁵

¹IRAP/CNRS/Université de Toulouse, France, ²Centre National d'Etudes Spatiales, France, ³EREMS, France, ⁴ENSEEIH, France, ⁵LPP, France

[WeA1-5]

10:30~10:45

[Invited] The Project "Universat" of the System of Small Satellites for Monitoring of the Space Threats

M. I. Panasyuk, V. M. Lipunov, M. V. Podsolko, V. V. Kalegaev, V. I. Osedlo, I. V. Yashin, S. I. Svertilov, E. S. Gorbovskoy, V. L. Petrov, and A. M. Amelyushkin

M. V. Lomonosov Moscow State University, Russia

[WeA1-6]

10:45~11:00

[Invited] NIMPH Nano Satellite

B. J. Escudier¹, A. Rissons¹, S. Lizy-Destrez¹, and A. Fernandez²

¹ISAE-SUPAERO, France, ²LAAS, France

Session Title	[WeB1] 2. Solar System Exploration with Cubesats and SmallSats IV
Date	September 20 (Wednesday)
Time	09:30~11:00
Room	Room B (Yeongju Hall B)
Session Chair	Ryu Funase (University of Tokyo, Japan)

[WeB1-1]

09:30~09:45

Trajectory Design for the SmallSat Lunar Exploration utilizing Piggyback Ride of the Mars Probe

Yongjun Song¹, Young-Joo Song², and Ho Jin¹

¹*Kyung Hee University, Korea*, ²*Korea Aerospace Research Institute, Korea*

[WeB1-2]

09:45~10:00

Lunar Dust Accumulation Analyser

Vishal Singh, Suvin Nair, Aishwerya Singh Gahlot, and Ravneet Kaur

University of Petroleum and Energy Studies, India

[WeB1-3]

10:00~10:15

Simulation of Lunar Surface Charging and Dust Lofting with Attitude Control of a Cubesat Mission for the Observation of the Lunar Horizon Glow

Necmi C. Orger, J. Rodrigo Cordova Alarcon, Kazuhiro Toyoda, and Mengyu Cho

Kyushu Institute of Technology, Japan

[WeB1-4]

10:15~10:30

NanoSWARM: A NASA Discovery-class Mission to Measure Lunar Magnetic Fields, Solar Wind, and Polar Volatiles

Ian Garrick-Bethell^{1,2}, Ho Jin², Christopher T. Russell³, Andrew R. Poppe⁴, David J. Lawrence⁵, Steven Warwick⁶, and the NanoSWARM team

¹*University of California, Santa Cruz, USA*, ²*Kyung Hee University, Korea*, ³*University of California, Los Angeles, USA*, ⁴*University of California, Berkeley, USA*, ⁵*Johns Hopkins University Applied Physics Laboratory, USA*, ⁶*Northrop Grumman, USA*

[WeB1-5]

10:30~10:45

Exploration of Phobos and Deimos

Jaya Krishna, S Vijayan, S Ganesh, and B Sivaraman

Physical Research Laboratory, India

[WeB1-6]

10:45~11:00

The Homoclinic and Heteroclinic Connections of Planar Symmetric Resonant Orbits in the Restricted Three-Body Earth-Moon System

Chao Peng¹ and Yang Gao¹

Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences, China

Session Title	[WeC1] 3-1. Observations for the Upper Atmosphere with Micro- and Nano-Satellites IV
Date	September 20 (Wednesday)
Time	09:30~11:00
Room	Room C (Baekrok Hall A)
Session Chairs	Geonhwa Jee (Korea Polar Research Institute, Korea) Hyosub Kil (JHU/APL, USA)

[WeC1-1]

09:30~09:45

Rayleigh Lidar and Satellite Observations of Middle Atmosphere Thermal Structure Characteristics and Gravity Wave Activity Over Reunion Islands (20.8°S, 55.5°E), France: Climatology and Comparison Study

Vishnu Prasanth P¹, H. Bencherif², V. SivaKumar³, S. Eswaraiyah⁴, P. Keckhut⁵, G. Venkat Chalapathi⁶, and D. Narayana Rao⁷

¹Sree Vidyanikethan Engineering College, India, ²Laboratoire de l'Atmosphère et des Cyclones, France, ³University of KwaZulu Natal, South Africa, ⁴Chungnam National University, Korea, ⁵Laboratoire Atmosphères Milieux Observations Spatiales, France, ⁶Layol

[WeC1-2]

09:45~10:00

Equatorial Electrodynamics Perturbation During the Geomagnetic Storms During the Maximum Phase of the Current Solar Cycle 24

A. Abdelnasser, A. M. Mahrous, and I. Fathy, Mayuresh Sarpotdar, Helwan University, Egypt

[WeC1-3]

10:00~10:15

Meteor Research in the View of Space Science Tasks Related to Small Satellites

Svitlana V. Kolomiyets

Kharkov National University of Radio Electronics, Ukraine

[WeC1-4]

10:15~10:30

The Dynamics of Collisional Buneman Instability Development in the Earth Ionosphere

Eduard V. Rostomyan

Inst of Radiophysics and Electronics Armenian National Ac. Sci. Armenia, Armenia

[WeC1-5]

10:30~10:45

Solar Flares; Highly Energetic Solar Transient, Affecting Upper Atmospheric Constituents

Sharad C Tripathi

Oriental Institute of Science and Technology, India

[WeC1-6]

10:45~11:00

Longitudinal Variability in the IRI-B0 Profile Parameters from COSMIC Ionospheric Occultations

S. K. Panda¹ and H. Haralambous²

¹Koneru Lakshmaiah University, India, ²Frederick University, Cyprus

Session Title	[WeD1] 4-2. Use of Cubesat, and Microsat, for GRB, Gravitational Wave and Neutrino Counterparts and Science I
Date	September 20 (Wednesday)
Time	09:30~10:55
Room	Room D (Baekrok Hall B)
Session Chair	Pietro Ubertini (IAPS-INAF, Italy)

[WeD1-1]	09:30~09:50
[Invited] The Hermes Project (High Energy Rapid Modular Ensemble of Satellites): Probing Spacetime Quantum Foam and Hunting for Gravitational Wave Electromagnetic Counterpart	
Luciano Burderi ¹ , Fabrizio Fiore ² , and Tiziana Di Salvo ³	
¹ Università degli Studi di Cagliari, Italy, ² INAF – Osservatorio Astronomico di Roma, Italy, ³ Università degli Studi di Palermo, Italy	

[WeD1-2]	09:50~10:05
The SAGE Experiment: Detecting Gravitational Waves with CubeSats	
Sylvestre Lacour ^{1,2} , Aglae Kellerer ² , Matthias Nowak ¹ , and Frederic Vincent ¹	
¹ Observatoire de Paris, LESIA, France, ² University of Cambridge, UK	

[WeD1-3]	10:05~10:20
SAGE : A Test Bed for the Detection of Gravitational Waves with CubeSats	
Aglae Kellerer ¹ , Sylvestre Lacour ^{1,2} , and Mathias Nowak ²	
¹ University of Cambridge, UK, ² Observatoire de Paris, LESIA, France	

[WeD1-4]	10:20~10:40
[Invited] High Resolution Energetic X-ray Imager (HREXI) for a Prototype 12U CubeSat	
Jaesub Hong ¹ , Branden Allen ¹ , Jonathan Grindlay ¹ , Scott Barthelmy ² , and Fiona Harrison ³	
¹ Harvard University, USA, ² NASA Goddard Space Flight Center, USA, ³ California Institute of Technology, USA	

[WeD1-5]	10:40~10:55
A CubeSAT Gamma-ray Spectrometer to Map the 511 keV Positron Annihilation Line	
Manel Errando	
Washington University, USA	

Session Title	[WeA2] 3-6. New Opportunities for Solar Physics with Small Satellites
Date	September 20 (Wednesday)
Time	11:30~13:00
Room	Room A (Yeongju Hall A)
Session Chair	Eun-Kyung Lim (KASI, Korea)

[WeA2-1]

11:30~11:45

[Invited] PROBA-3: a Formation Flying Solar Coronagraph Mission

Andrei Zhukov^{1,2}

¹Royal Observatory of Belgium, Belgium, ²Moscow State University, Russia

[WeA2-2]

11:45~12:00

Efficient Measurements of Solar Flare Hard X-ray Spectra and Polarization with CubeSats

W. Hajdas and H. Xiao

Paul Scherrer Institut, Switzerland

[WeA2-3]

12:00~12:15

SphinX-NG: 1U Nanocube Module for Studies of Solar X-rays

J. Sylwester, J. Bakala, M. Kowaliński, M. Siarkowski, S. Gburek, P. Podgórski, and B. Sylwester

Space Research Center PAS, Poland

[WeA2-4]

12:15~12:30

[Invited] Balloon-borne Investigation of the Temperature and Speed of Electrons in the Corona (BITSE)

Nat Gopalswamy and the BITSE Team

NASA Goddard Space Flight Center, USA

[WeA2-5]

12:30~12:45

[Invited] Observing the Solar Wind from 2.5-8 R_{sun} using Remote Sensing

Joseph M. Davila

NASA Goddard Space Flight Center, USA

[WeA2-6]

12:45~13:00

Toward Next Generation Solar Coronagraph

K.-S. Cho¹, S.-C. Bong¹, S. Choi¹, H. Yang¹, J.-H. Kim¹, J.-H. Baek¹, Y.-D. Park¹, S. W. Clarke², J. M. Davila³, N. Gopalswamy³, Y.-J. Moon⁴, and J. Chae⁵

¹Korea Astronomy and Space Science Institute, Korea, ²NASA Headquarters, USA, ³NASA Goddard Space Flight Center, USA, ⁴KyungHee University, Korea, ⁵Seoul National University, Korea

Session Title	[WeD2] 4-2. Use of Cubesat, and Microsat, for GRB, Gravitational Wave and Neutrino Counterparts and Science II
Date	September 20 (Wednesday)
Time	11:30~12:35
Room	Room D (Baekrok Hall B)
Session Chair	Michel Boer (CNRS, France)

[WeD2-1]

11:30~11:50

[Invited] A CubeSat Gamma-ray Detector

David Murphy¹, Alexey Uliyanov¹, Gerard Fitzpatrick¹, Antonio Martin-Carillo¹, Sheila McBreen¹, Deirdre Coffey¹, Dirk Meier², David Steenari², Arne Fredriksen², Brian Shortt³, Nick Nelms³, and Lorraine Hanlon¹

¹University College Dublin, Ireland, ²Integrated Detector Electronics AS, Norway, ³ESA/ESTEC, Netherlands

[WeD2-2]

11:50~12:05

UFFO/Lomonosov for Observation of the Early Photons from GRBs

S. Jeong, I. H. Park on behalf of the UFFO Collaboration

Sungkyunkwan University, Korea

[WeD2-3]

12:05~12:20

Development of the Digital System on a Wide Field X-ray Imaging Detector Aboard Kanazawa-SAT³

Yasuaki Kagawa¹, Daisuke Yonetoku¹, Tatsuya Sawano¹, Tatehiro Mihara², Kazuki Yoshida¹, Masao Ina¹, Kaichi Ota¹, Koutarou Kyutoku³, and Hirokazu Ikeda⁴

¹Kanazawa University, Japan, ²RIKEN, Japan, ³KEK, Japan, ⁴ISAS/JAXA, Japan

[WeD2-4]

12:20~12:35

Optical Properties of Black Holes in the Presence of a Plasma

Ahmadjon Abdujabbarov

Institute of Nuclear Physics, Uzbekistan

Session Title	[WeA3] 6-3. Space Science and Engineering by Scientific Ballooning
Date	September 20 (Wednesday)
Time	15:00~16:30
Room	Room A (Yeongju Hall A)
Session Chairs	Kwanjung Yee (Seoul National University, Korea) Sandip Chakrabarti (S. N. Bose National Centre for Basic Sciences, India)

[WeA3-1]

15:00~15:15

[Invited] US Scientific Ballooning and Its Prospects

Eun-Suk Seo

University of Maryland, USA

[WeA3-2]

15:15~15:30

[Invited] Scientific Ballooning in Japan

Tetsuya Yoshida

Japan Aerospace Exploration Agency, Japan

[WeA3-3]

15:30~15:45

Numerical Prediction of Scientific Balloon Trajectories While Considering Various Uncertainties

Yongseon Lee, Jungpyo Kang, Gyujin Shim, and Kwanjung Yee

Seoul National University, Korea

[WeA3-4]

15:45~16:00

[Invited] Scientific Ballons: Historical Remark and Future Perspectives

Pietro Ubertini

IAPS-INAF, Italy

[WeA3-5]

16:00~16:15

European Stratospheric Ballooning – Latest Operations and Future Plans

Mattias Abrahamsson¹ and André Vargas²

¹SSC, Sweden, ²CNES, France

[WeA3-6]

16:15~16:30

High-Altitude Balloon Program at the Indian Institute of Astrophysics: Problems, Achievements and Experience

Margarita Safonova¹, Jayant Murthy², A.G. Sreejith², Joice Mathew², Mayuresh Sarpotdar², Ambily Suresh², K. Nirmal², and Ajin Prakash²

¹M.P.Birla Institute of Fundamental Research, India, ²Indian Institute of Astrophysics, India

Session Title	[WeC3] 6-2. Education and Capacity Building in Science and Engineering Using Small Satellites I
Date	September 20 (Wednesday)
Time	15:00~16:20
Room	Room C (Baekrok Hall A)
Session Chair	Loren Chang (National Central University, Taiwan)

[WeC3-1]

15:00~15:20

[Invited] Samara University Experience on Capacity Building in Space Science and Engineering

Igor V. Belokonov

Samara University, Russia

[WeC3-2]

15:20~15:40

[Invited] CubeSat Development Lessons Learned

Jordi Puig-Suari, Ryan Nugent, and John Bellardo

California Polytechnic State University, USA

[WeC3-3]

15:40~16:00

[Invited] Designing, Building and Operating Small Satellites in a University Environment

Scott Palo, Thomas Woods, Richard Kohnert, and James Mason

University of Colorado, USA

[WeC3-4]

16:00~16:20

Multiple Mini Satellites Launch Opportunities with Dedicated VEGA Launcher New Mission Concepts

A. Gabrielli, E. D'Aversa, R.C. Pellegrini, S. Ianelli, and M. Albano

Italian Space Agency, Italy

Session Title	[WeD3] 4-2. Use of Cubesat, and Microsat, for GRB, Gravitational Wave and Neutrino Counterparts and Science III
Date	September 20 (Wednesday)
Time	15:00~16:10
Room	Room D (Baekrok Hall B)
Session Chair	Jaesub Hong (Harvard University, USA)

[WeD3-1]

15:00~15:20

[Invited] MICROSCOPE: 7 Months of a Very Complex Commissioning Phase Toward Ultimate Performance

PY. Guidotti¹, Y. André¹, V. Cipolla¹, P. Prieur¹, A. Robert¹, P. Danto¹, M. Rodrigues², P. Touboul², and G. Metris³

¹Centre National d'Etudes Spatiales, France, ²Office National d'Etudes et de Recherches Aérospatiales, France, ³Observatoire de la Côte d'Azur, France

[WeD3-2]

15:20~15:40

[Invited] Skyhopper: a CubeSat with a NIR Telescope

Jochen Greiner¹, Michele Trenti², and Sylvio Klose³

¹Max-Planck Institute for extraterrestrial Physics, Germany, ²Melbourne University, Australia, ³Thüringer Landessternwarte Tautenburg, Germany

[WeD3-3]

15:40~15:55

Microsatellites for GRB and TGF Observations

S. I. Svertilov, A. F. Iyudin, V. V. Bogomolov, M. I. Panasyuk, and I. V. Yashin

Moscow State University, Russia

[WeD3-4]

15:55~16:10

High Energy Astronomy with Meteorological Balloons

Sandip K. Chakrabarti^{1,2}, R. Sarkar², D. Bhawmick², and A. Bhattacharyya²

¹S.N. Bose National Centre for Basic Sciences, India, ²Indian Centre for Space Physics, India

Session Title	[ThA1] 3-4. New Idea for Space Weather Research with Micro- and Nano-Satellites I
Date	September 21 (Thursday)
Time	09:30~09:45
Room	Room A (Yeongju Hall A)
Session Chair	Jaejin Lee (KASI, Korea)

[ThA1-1]

09:30~09:45

[Invited] Dellinger: NASA GSFC's First 6U Cubesat

Larry Kepko

NASA Goddard Space Flight Center, USA

[ThA1-2]

09:45~10:00

[Invited] petitSat – a 6U CubeSat to Study Plasma Density Enhancements

Jeff Klenzing¹, Chuck Clagett¹, Ryan Davidson², Greg Earle³, Sarah Jones¹, Carlos Martinis⁴, Nick Paschalidis¹, and Rob Pfaff¹

¹NASA Goddard Space Flight Center, USA, ²Utah State University, USA, ³Virginia Tech, USA, ⁴Boston University, USA

[ThA1-3]

10:00~10:15

[Invited] CONNEX The Magnetosphere-Ionosphere Connections Explorer

Geoffrey Reeves¹, Eric Dors¹, and the CONNEX Satellite Team

¹Los Alamos National Laboratory, USA

[ThA1-4]

10:15~10:30

The Scintillation Prediction Observations Research Task (SPORT): An International Science Mission using a CubeSat

James Spann¹, Charles Swenson², Otavio Durão³, Luis Loures⁴, Rod Heelis⁵, Rebecca Bishop⁶, Guan Le⁷, Mangalathayil Abdu⁴, Linda Krause¹, Clezio Denardin³, Lidia Shibuya⁴, Joseph Casas¹, Shelia Nash-Stevenson¹, Polinaya Muralikrishana³, Joaquim Costa³, Marcelo Banik de Padua³, Cristiano Wrasse³, and G. Fry¹

¹NASA/MSFC, USA, ²USU, USA, ³INPE, Brazil, ⁴ITA, Brazil, ⁵UTD, USA, ⁶Aerospace, USA, ⁷NASA/GSFC, USA

[ThA1-5]

10:30~10:45

The SNIPE (Small scale magNetospheric and Ionospheric Plasma Experiments) Mission

Jaejin Lee, Young-Sil Kwak, Junga Hwang, Jaeheung Park, and Jongdae Sohn

¹Korea Astronomy and Space Science Institute, Korea

[ThA1-6]

10:45~11:00

Small-Size Mission SUITS/SWUSV Addressing Solar Spectral Variability, Space Weather, Extreme Events and Solar-Climate Relations

L. Damé¹, A. Hauchecorne¹, S. Bekki¹, M. Meftah¹, A. Irbah¹, P. Keckhut¹, E. Quémerais¹, A. Sarkissian¹, M. Marchand¹, R. Thiéblemont¹, D. Bolsée², N. Pereira², G. Cessateur², W. Schmutz³, A. Haberreiter³, J. Gröbner³, R. Wimmer-Schweingruber⁴, S. Dewitte⁵

¹LATMOS, France, ²BIRA-IASB, Belgium, ³PMOD/WRC, Switzerland, ⁴University of Kiel, Germany, ⁵Royal Meteorological Institute of Belgium, Belgium, ⁶University of Athens, Greece

Session Title	[ThuB1] 5-1. Payload Technologies for Small Satellite Missions I
Date	September 21 (Thursday)
Time	09:30~11:00
Room	Room B (Yeongju Hall B)
Session Chair	Regina Lee (York University, Canada)

[ThuB1-1]

09:30~09:45

[Invited] MICROSCOPE: High Technology in Space for Fundamental Physics. A long and Complex Payload Development for a Breath Taking Final Success in Flight

P. Danto¹, Y. André¹, V. Cipolla¹, PY. Guidotti¹, A. Robert¹, M. Rodrigues², V. Lebat², F. Liorzou², and P. Touboul²

¹Centre National d'Etudes Spatiales, France, ²Office National d'Etudes et de Recherches Aerospatiales, France

[ThuB1-2]

09:45~10:00

Ultra-compact Design of Optics and Sensors for Earth Observation Cubesats

Mikhail Ryazanskiy¹, Mariia Tumarina², Nikolay Vedenkin¹, I. H. Park², Alexander Milov³, and Gi Han Hong¹

¹SatByul Co., Ltd., Korea, ²Sungkyunkwan university, Korea, ³Dauria Satellite Technology, Russia

[ThuB1-3]

10:00~10:15

Geological Prospection of Asteroids: Studying Multiple Asteroids Surfaces during One Mission

Pamela Such¹ and Pablo Sobron²

¹INSUGEO-CONICET, Argentina, ²SETI-NASA, USA

[ThuB1-4]

10:15~10:30

Performance Test of the Schwarzschild-Chang Off-axis Telescope

Woojin Park¹, Soojong Pak¹, Seunghyuk Chang², Byeongjoon Jeong³, Kwang Jo Lee¹, and Seonwoo Lee¹

¹Kyung Hee University, Korea, ²Korea Advanced Institute of Science and Technology, Korea, ³Korea Basic Science Institute, Korea

[ThuB1-5]

10:30~10:45

Heavy Duty UV Telescope for Space Weather and Solar Variability Studies

L. Damé¹, M. Meftah¹, N. Rouanet¹, P. Gilbert¹, P. Etcheto², and J. Berthon²

¹LATMOS, France, ²CNES, France

[ThuB1-6]

10:45~11:00

Theoretical Study of Spherical Langmuir Probe in Maxwellian Plasma

Shankar Bhattarai

Tribhuvan University, Nepal

Session Title	[ThC1] 6-2. Education and Capacity Building in Science and Engineering Using Small Satellites II
Date	September 21 (Thursday)
Time	09:30~10:55
Room	Room C (Baekrok Hall A)
Session Chair	Loren Chang (National Central University, Taiwan)

[ThC1-1]

09:30~09:50

[Invited] Capacity Building for Sharing Low-Cost CubeSat Ground Stations

Thomas N. Woods, James P. Mason, Richard Kohnert, Amal Chandran, Scott Palo, and Colden Rouleau
University of Colorado, USA

[ThC1-2]

09:50~10:05

The INSPIRE Program at the University of Colorado: An Overview

Amal Chandran and Mike McGrath
University of Colorado, USA

[ThC1-3]

10:05~10:20

Lessons Learned Building INSPIRESat-1 through a Three Way International Collaboration

Loren C. Chang¹, Chi-Kuang Chao¹, and Amal Chandran²

¹National Central University, Taiwan, ²University of Colorado, USA

[ThC1-4]

10:20~10:40

[Invited] BIRDS Program: CubeSat Constellation for Cross-Border Inter-University Collaboration on Space Research and Education

Mengu Cho, George Maeda, Sangkyun Kim, and Hirokazu Masui
Kyushu Institute of Technology, Japan

[ThC1-5]

10:40~10:55

EduCube: The 1U Educational CubeSat

David Murphy¹, Daniel Vagg², David Lynn¹, Sheila McBreen¹, Antonio Martin-Carrillo¹, and Lorraine Hanlon¹

¹University College Dublin, Ireland, ²Parameter Space, Ireland

Session Title	[ThD1] 4-1. Advances in Astrophysical Research with Small Satellites I
Date	September 21 (Thursday)
Time	09:30~11:00
Room	Room D (Baekrok Hall B)
Session Chair	Kwang-il Seon (KASI, Korea)

[ThD1-1]

09:30~09:50

[Invited] Observation of Near-infrared Background with Small Space Mission

Toshio Matsumoto^{1,2}

¹Japan Aerospace Exploration Agency, Japan, ²Korea Astronomy and Space Science Institute, Korea

[ThD1-2]

09:50~10:10

[Invited] SPHEREx: The First NIR All-sky Spectral Survey Mission

Jeffrey T. Booth¹, James J. Bock², and the SPHEREx Team

¹Jet Propulsion Laboratory, USA, ²California Institute of Technology, USA

[ThD1-3]

10:10~10:30

[Invited] High-z Gamma-Ray Bursts for Unraveling the Dark Ages Mission – HiZ-GUNDAM

Daisuke Yonetoku and HiZ-GUNDAM Working Group

Kanazawa University, Japan

[ThD1-4]

10:30~10:45

Survey Observations with Compact Near-infrared Space Telescope, MIRIS

Jeonghyun Pyo¹, Il-Joong Kim¹, Woong-Seob Jeong^{1,2}, Dae-Hee Lee^{1,2}, Bongkon Moon¹, Youngsik Park¹, Sung-Joon Park¹, Won-Kee Park¹, Duk-Hang Lee¹, Uk-Won Nam¹, Wonyong Han^{1,2}, Kwang-Il Seon^{1,2}, Toshio Matsumoto³, Min Gyu Kim⁴, and Hyung Mok Lee⁴

¹Korea Astronomy and Space Science Institute, Korea, ²University of Science and Technology, Korea, ³ISAS/JAXA, Japan, ⁴Seoul National University, Korea

[ThD1-5]

10:45~11:00

Near-Infrared Imaging Spectrometer (NISS) onboard NEXTSat-1 for the CIB Study

Woong-Seob Jeong^{1,2}, Bongkon Moon¹, Sung-Joon Park¹, Dae-Hee Lee¹, Jeonghyun Pyo¹, Won-Kee Park¹, Il-Joong Kim¹, Youngsik Park¹, Duk-Hang Lee¹, Kyeongyeon Ko^{1,2}, Mingyu Kim³, Ukwon Nam¹, Minjin Kim^{1,2}, Jongwan Ko¹, Myungshin Im³, Hyung Mok Lee³, Jeong-Eun Lee⁴, Goo-Hwan Shin⁵, Jangsoo Chae⁵, and Toshio Matsumoto^{1,6}

¹Korea Astronomy and Space Science Institute, Korea, ²University of Science and Technology, Korea, ³Seoul National University, Korea, ⁴Kyung Hee University, Korea, ⁵KAIST, Korea, ⁶ISAS/JAXA, Japan

Session Title	[ThA2] 3-4. New Idea for Space Weather Research with Micro- and Nano-Satellites II
Date	September 21 (Thursday)
Time	11:30~13:00
Room	Room A (Yeongju Hall A)
Session Chair	Kyoung-Joo Hwang (NASA/GSFC and UMBC/GPHI, USA)

[ThA2-1]

11:30~11:45

Space Weather Monitoring With Group of Nanosatellites

S. V. Kuzin¹, V. I. Mayorova², S. A. Bogachev¹, S. Yu. Dyatkov¹, A. A. Pertsov¹, A. S. Kirichenko¹, N. A. Nerovny², V. G. Melnikova², A. A. Borovikov², M. Yu. Koretskii², and E. D. Timakova²

¹*P.N. Lebedev Physical Institute of Russian Academy of Science, USA*, ²*Bauman Moscow State Technical University, Russia*

[ThA2-2]

11:45~12:00

Solar Events Associated With SSC in 2002

B. Schmieder¹, K. Bocchialini², M. Menvielle³, and et al

¹*Observatoire de Paris, France*, ²*Institut d'Astrophysique Spatiale, France*, ³*Université Versailles Saint Quentin, France*

[ThA2-3]

12:00~12:15

SmallSat Mission Study for ESA's Distributed Space Weather Sensor System

Stefan Kraft and Juha-Pekka Luntama

European Space Agency, Germany

[ThA2-4]

12:15~12:30

The CubIXSS (CubeSat Imaging X-ray Solar Spectrometer) Mission Concept

Amir Caspi¹, Albert Y. Shih², Harry P. Warren³, Thomas N. Woods⁴, James P. Mason⁴, Marek Stęślicki⁵, Janusz Sylwester⁵, Craig E. DeForest¹, and Glenn T. Laurent¹

¹*SwRI, USA*, ²*NASA Goddard Space Flight Center, USA*, ³*NRL, USA*, ⁴*CU/LASP, USA*, ⁵*PAS/SRC, Poland*

[ThA2-5]

12:30~12:45

[Invited] First Japanese Formation Flight Mission using Compact/Micro Satellites for Investigating the Space-Earth Coupling Processes

Masafumi Hirahara¹, Yoshifumi Saito², Hirotsugu Kojima³, Nobutaka Bando², and Yuichi Tsuda²

¹*Nagoya University, Japan*, ²*Japan Aerospace Exploration Agency, Japan*, ³*Kyoto University, Japan*

[ThA2-6]

12:45~13:00

[Invited] The Statistical Estimation of Space Weather Forecasting Accuracy

Juncheol Moon, Jaehyung Lee, and Jangsuk Choi

National Radio Research Agency, Korean Space Weather Center, Korea

Session Title	[ThB2] 5-1. Payload Technologies for Small Satellite Missions II
Date	September 21 (Thursday)
Time	11:30~13:00
Room	Room B (Yeongju Hall B)
Session Chair	Regina Lee (York University, Canada)

[ThB2-1]

11:30~11:45

[Invited] A GNSS Payload with Low-cost Commercial-of-the Shelf Receivers

Michael J Meindl¹, Marcel Joss², Erich Styger², and Markus Rothacher¹

¹ETH Zurich, Switzerland, ²Lucerne University of Applied Sciences and Arts, Switzerland

[ThB2-2]

11:45~12:00

[Invited] A Conceptual Study of Small Payload on ISS and Small Satellites for Space Experiment

Joohee Lee, Jongwon Lee, and Younkyu Kim

¹Korea Aerospace Research Institute, Korea

[ThB2-3]

12:00~12:15

1U CubeSat for Space Exploration under 100,000 USD

Daniel Vera, Ericson López, and et al.

Escuela Politécnica Nacional, Ecuador

[ThB2-4]

12:15~12:30

The Acceleration of GPS Cold Start in LEO Orbit

Pavel Kovář

Czech Technical University in Prague, Czech Republic

[ThB2-5]

12:30~12:45

In-Orbit Demonstration of Quantum Technologies

Bruno Leone

European Space Agency, UK

[ThB2-6]

12:45~13:00

Water Level Monitoring using Nanosatellite

Vishnu Anand Muruganandan, Ji Hyun Park, and In-Seuck Jeung

Seoul National University, Korea

Session Title	[ThC2] 6-2. Education and Capacity Building in Science and Engineering Using Small Satellites III
Date	September 21 (Thursday)
Time	11:30~12:50
Room	Room C (Baekrok Hall A)
Session Chair	Amal Chandran (University of Colorado at Boulder, USA)

[ThC2-1] 11:30~11:50

[Invited] Education and Training in Space Science and Technology using Small Satellite Programs in Korea

Seong-Ook Park

KAIST, Korea

[ThC2-2] 11:50~12:05

IGOSat - 3U Educational CubeSat for Measuring the TEC and Detecting High Energy Particles

Hana Benhizia and Hubert Halloin

Laboratoire AstroParticule et Cosmologie, France

[ThC2-3] 12:05~12:20

Satellite Driver

Wee-Seng Lim

Nanyang Technological University, Singapore

[ThC2-4] 12:20~12:35

ESAT, the First Step Towards a Satellite Project

Ignacio Barrios Tascón, Ana Laverón Simavilla, Jacobo Rodríguez Otero, and Ignacio Tinao Pérez-Miravete

Universidad Politécnica de Madrid, Spain

[ThC2-5] 12:35~12:50

The Jordanian CubeSat Project: A Tool for Capacity Building, Education and Research

Hanna A. Sabat^{1,2} and Awni M. Khasawneh^{1,2}

¹The Regional Centre for Space Science and Technology Education for Western Asia, Jordan, ²The Royal Jordanian Geographic Centre, Jordan

Session Title	[ThD2] 4-1. Advances in Astrophysical Research with Small Satellites II
Date	September 21 (Thursday)
Time	11:30~13:00
Room	Room D (Baekrok Hall B)
Session Chair	Daisuke Yonetoku (Kanazawa University, Japan)

[ThD2-1]

11:30~11:45

[Invited] Far-ultraviolet Observations of the Galactic Interstellar Medium with FIMS/SPEAR

Kwang-Il Seon¹, Wonyong Han¹, Kyoung-Wook Min², Jerry Edelstein³, and FIMS/SPEAR members

¹Korea Astronomy and Space Science Institute, Korea, ²Korea Advanced Institute of Space Science Institute, Korea, ³University of California, USA

[ThD2-2]

11:45~12:00

Observing the UV Sky from Small Satellites

Jayant Murthy

Indian Institute of Astrophysics, India

[ThD2-3]

12:00~12:15

A Next-generation Compton Telescope - The Compton Spectrometer and Imager (COSI)

Hsiang-Kuang Chang

National Tsing Hua University, Taiwan

[ThD2-4]

12:15~12:30

A Cubesat for UV Astronomy?

Noah Brosch¹, Ana Ines Gomez de Castro², Jayant Murthy³, Erez Ribak⁴, Ehud Behar⁴, and Vladimir Balabanov⁴

¹Tel Aviv University, Israel, ²Complutense University, Spain, ³Indian Institute of Astrophysics, India, ⁴Technion, Israel

[ThD2-5]

12:30~12:45

Status Update of POLIX - An X-ray Polarimeter on a Small Satellite Mission

Rishin P V¹, Gopala Krishna M R¹, Biswajit Paul¹, Duraichelvan R¹, Meena G², Mohamed Ibrahim¹, Abhilash P K¹, Varun B¹, Nirmal I¹, Rajagopala G¹, Pooja V¹, Sandhya P¹, Mamatha T S¹, Arasi S¹, and Nagaraja H. N.¹

¹Raman Research Institute, India, ²ISRO Satellite Centre, India

[ThD2-6]

12:45~13:00

Wide-field Ultraviolet Imager for Astronomical Transient Studies

Joice Mathew, S. Ambily, Ajin Prakash, Mayuresh Sarpotdar, K. Nirmal, A.G. Sreejith, Margarita Safonova, and Jayant Murthy

Indian Institute of Astrophysics, India

Session Title	[P2] Poster Session II
Date	September 20 (Wednesday)
Time	16:30~18:30
Room	Event Hall A

[P2-1]

16:30~18:30

Estimation of Equatorial Plasma Bubble Zonal Drift Velocities Over Southeast Asia using Ground-based Instruments

I. Sarudin¹, N. S. A. Hamid¹, M. Abdullah¹, and S. M. Buhari²

¹Universiti Kebangsaan Malaysia, Malaysia, ²Universiti Teknologi Malaysia, Malaysia

[P2-2]

16:30~18:30

Development of Small Scale MagNetospheric Ionospheric Plasma Experiments (SNIPE)

Jongdae Sohn, Jaejin Lee, Junga Hwang, Uk-Won Nam, Won-Kee Park, Young-Sil Kwak, and Jaeheung Park
Korea Astronomy and Space Science Institute, Korea

[P2-3]

16:30~18:30

The CIRCUS NanoSat

K. Issautier, D. Tiphène, M. Dekkali, A. Zaslavsky, C. Briand, B. Cecconi, and Y. Hello

LESIA, Observatoire de Paris, PSL Research University, CNRS, Sorbonne Universités, UPMC Univ. Paris 0⁶, Univ. Paris Diderot, Sorbonne Paris Cité, France

[P2-4]

16:30~18:30

Study on the Modification of Ionosphere Prior to Large Earthquake - Need of Satellite Constellation -

K. -I. Oyama^{1,2,3}, C. H. Chen², L. Bankov⁴, K. Ryu⁵, M. Devi⁶, and J. Y. Liu⁷

¹Kyushu University, Japan, ²National Cheng Kung University, Taiwan, ³Coltd Asia Space Environment Research Consortium. Japan, ⁴Bulgarian Academy of Sciences, Bulgaria, ⁵Korea Advanced Institute of Science and Technology, Korea, ⁶Gauhati University, India,

[P2-5]

16:30~18:30

PIC Simulation of the Velocity Shear Driven Instability: Kelvin-Helmholtz Instability

E. Choi^{1,2}, K-J. Hwang^{1,2}, and David G. Sibeck¹

¹NASA Goddard Space Flight Center, USA, ²University University of Maryland, USA

[P2-6]

16:30~18:30

Contribution of the Czech Republic to the Space Coronagraph ASPIICS onboard the Proba-3 Mission of ESA

Stanislav Gunár¹, Petr Heinzel¹, Radek Peřestý², Radek Melich³, Sonja Jejčič¹, and Miloslav Druckmüller⁴

¹Astronomical Institute of the Czech Academy of Sciences, Czech Republic, ²SERENUM a.s., Czech Republic, ³Institute of Plasma Physics of the Czech Academy of Sciences, Czech Republic, ⁴Faculty of Mechanical Engineering of the Brno University of Technology

[P2-7]

16:30~18:30

Comparison of Relative Sunspot Number Measured from Single Station in Malaysia with Network Data

N. Rasmani¹, N. S. A. Hamid¹, and F. Kamarudin²

¹Universiti Kebangsaan Malaysia, Malaysia, ²National Space Agency, Malaysia

[P2-8]

16:30~18:30

The Precursors of the Earthquakes on Well Given Cosmic Device on Centre of the Strong Earthquake of the City Izmit (Turkey)

O. A. Alimov, and M. I. Gulyamov

Institute of Astrophysics of the Academy of Sciences of the Republic of Tajikistan, Tajikistan

[P2-9]

16:30~18:30

Impact of Solar Proton Events on High Latitude Ionospheric Conditions

Aslam. A. M.¹ and A. K. Gwal²

¹Barkatullah University, India, ²AISECT University, India

[P2-10]

16:30~18:30

Radiation Belt Studies with RADEM Directionality Detector

Patryk Socha, Wojtek Hajdas, Alankrita Mrigakshi, Hualin Xiao, Reinhold Kramert, and Radosław Marcinkowski

PSI, Switzerland

[P2-14]

16:30~18:30

KazEOSat-2 Operation Experience

Daniyar Kangozhin, Assyl Bakasheva, and Bakhitgul Akhmetova

Kazakhstan Gharysh Sapary, Kazakhstan

[P2-15]

16:30~18:30

Korea Space Activities, Achievements and Strategic Plan

Oh Hyun Rho¹ and Jin Young Huh²

¹The National Academy of Sciences, Korea, ²Seoul National University, Korea

[P2-16]

16:30~18:30

Small Spacecraft Systems Virtual Institute (S³VI)

Bruce D. Yost

NASA Ames Research Center, USA

[P2-17]

16:30~18:30

Analysis of LAPAN-TUBSAT Satellite Anomaly in 2010

Neflia and Dhani Herdiwijaya

Bandung Institute of Technology, Indonesia

[P2-18]

16:30~18:30

Monitoring Satellite Health using Satellite Anomaly Information System (SIAS)

Neflia¹ and Nizam Ahmad²

¹Bandung Institute of Technology, Indonesia, ²National Institute of Aeronautics and Space, Indonesia

[P2-19]

16:30~18:30

Establishing the New Zealand Centre for Space Science Technology

Peter McComb¹, Greg Bodeker², and Jared Lewis²

¹MetOcean Solutions, New Zealand, ²Bodeker Scientific, New Zealand

[P2-20]

16:30~18:30

Proposed Space Engineering Projects for Improved Geophysical Study

Nguyen Xuan Anh¹ and Hien Bich Vo²

¹Vietnam Academy of Science and Technology, Vietnam, ²Vietnamese German University, Vietnam

[P2-21]

16:30~18:30

Teaming project named EXCELSIOR (HORIZON 2020)

Diofantos G. Hadjimitsis

Cyprus University of Technology, Cyprus

[P2-22]

16:30~18:30

Design, Development and Functional Testing of a Star Sensor Cum Asteroid Tracker

Mayuresh Sarpotdar, Joice Mathew, Ajin Prakash, Margarita Safonova, and Jayant Murthy

Indian Institute of Astrophysics, India

[P2-23]

16:30~18:30

High-resolution Satellite Camera for Earth Observation and Astronomy

Mariia Tumarina¹, I. H. Park¹, Mikhail Ryazanskiy², and Min Bin Kim¹

¹Sungkyunkwan University, Korea, ²SatByul Co., Ltd., Korea

[P2-24]

16:30~18:30

Optical Telescope Design for a Cubesat

Young-Soo Kim, Jihun Kim, Jeong Gyun Jang, Jeong-Yeol Han, Jakyoungh Nah, and Uk Won Nam

Korea Astronomy and Space Science Institute, Korea

[P2-25]

16:30~18:30

Delay Tolerant Network (DTN) Enabled Software Defined Radio (SDR) and Satellite Constellations

Thong Thai¹, Kajendra Seevananthan¹, Roman Ronge², and Regina Lee¹

¹York University, Canada, ²Aflare Systems, Canada

[P2-26]

16:30~18:30

Statistical Design Model (SDM) of Satellite Thermal Control Subsystem

Mehran Mirshams, Ehsan Zabihian, and Mahdi Aarabi Chamalishahi

K.N. Toosi University of Technology, Iran

[P2-27]

16:30~18:30

Communications Satellite to Support a Border Country Monitoring System

Jorge MartinsNascimento

Instituto Nacional de Pesquisas Espaciais, Brazil

[P2-28]

16:30~18:30

Assessment of Compliance LAPAN-A2/ORARI Satellite of Space Law by using Debris Assessment Software (DAS) 2.0

Novia Ekawanti and Dhani Herdiwijaya

Bandung Insitute of Technology, Indonesia

[P2-29]

16:30~18:30

Continuation of Satellite Observation of NO₂ Over South Asia using Ozone Monitoring Instrument during the Time Period of 2004-2016

M. Sarfraz and M. F. Khokhar

National University of Science and Technology, Pakistan

[P2-30]

16:30~18:30

Spatio-Temporal Trends of Anthropogenic SO₂ from Smelters in Norilsk, Russia

Zunaira Jabeen and M F Khokhar

National University of Science and Technology, Pakistan

[P2-31]

16:30~18:30

Small Satellite and Their Services For The Development Of Developing Countries

Muhammad Arslan

Institute of Space Technology, Pakistan

[P2-33]

16:30~18:30

Balloon UV Observatory: High Altitude Balloon Experiments at Indian Institute of Astrophysics

A. G. Sreejith, K. Nirmal, S. Ambily, Joice Mathew, Mayuresh Sarpotdar, Ajin Prakash, Margarita Safonova, and Jayant Murthy

Indian Institute of Astrophysics, India

[P2-34]

16:30~18:30

Collection of Stratospheric Samples using Balloon-Borne Payload System SAMPLE

Margarita Safonova¹, Ajin K. Prakash¹, Joice Mathew¹, A. G. Sreejith¹, Mayuresh Sarpotdar¹, S. Ambily¹, K. Nirmal¹, Jayant Murthy¹, Dipshika Chakravortty², and Annapurni Rangarajan²

¹*Indian Institute of Astrophysics, India*, ²*Indian Institute of Science, India*

[P2-35]

16:30~18:30

Measurement of Limb Radiance and Trace Gases in UV over Tropical Region by Balloon-Borne Instruments - Flight Validation and Initial Results

Margarita Safonova¹, A. G. Sreejith², Joice Mathew², Mayuresh Sarpotdar², K. Nirmal², S. Ambily², Ajin Prakash², and Jayant Murthy²

¹*M.P.Birla Institute of Fundamental Research, India*, ²*Indian Institute of Astrophysics, India*

[P2-36]

16:30~18:30

Development of the Wireless Communication System for High Altitude Scientific Balloon

Gyujin Shim, Jungpyo Kang, and Kwanjung Yee

Seoul National University, Korea

[P2-37]

16:30~18:30

Trend of Cosmic Ray Intensity with Solar Activity using Low Cost Meteorological Balloons

R. Sarkar¹, Sandip K. Chakrabarti^{1,2}, D. Bhawmick¹, A. Bhattacharyya¹, and P. S. Pal¹

¹S.N. Bose National Centre for Basic Sciences, India, ²Indian Centre for Space Physics, India

[P2-39]

16:30~18:30

X-ray Observation of Extraterrestrial Sources using Weather Balloons

Ritabrata Sarkar¹, Sandip K. Chakrabarti^{1,2}, Debashis Bhowmick¹, and Arnab Bhattacharya¹

¹Indian Centre for Space Physics, India, ²S. N. Bose National Centre for Basic Sciences, India

[P2-39]

16:30~18:30

A Novel Approach of Payload Attitude Measurement in Space Exploration using Weather Balloon

Ritabrata Sarkar¹, Sandip K. Chakrabarti^{1,2}, Debashis Bhowmick¹, and Arnab Bhattacharya¹

¹Indian Centre for Space Physics, India, ²S. N. Bose National Centre for Basic Sciences, India

[P2-40]

16:30~18:30

Heating Versus Cooling in the Moderate Redshift Galaxy Clusters 3C 444 and ZwCl 2701

Nilkanth D. Vagshette¹, Madhav K. Patil², and Sachindra Naik²

¹Maharashtra Udayyagiri Mahavidyalaya, India, ²Swami Ramanand Teerth Marathwada University, India

[P2-41]

16:30~18:30

Near Ultraviolet Spectrograph for CubeSat

A. G. Sreejith, Joice Mathew, Mayuresh Sarpotdar, Ajin Prakash, K. Nirmal, S. Ambily, Margarita Safonova, and Jayant Murthy

Indian Institute of Astrophysics, India

[P2-42]

16:30~18:30

Wide-field Ultraviolet Imager for Small Satellites

S. Ambily, Mayuresh Sarpotdar, Joice Mathew, Ajin Prakash, A. G. Sreejith, K. Nirmal, Margarita Safonova, and Jayant Murthy

Indian Institute of Astrophysics, India

[P2-43]

16:30~18:30

Imaging Simulation of a Near-infrared Imaging Spectrometer for Star Formation History

Minjin Kim^{1,2}, Woong-Seob Jeong^{1,2}, Jeonghyun Pyo¹, Il-Joong Kim¹, Sung-Joon Park¹, Bongkon Moon¹, Dae-Hee Lee^{1,2}, Won-Kee Park¹, Dukhang Lee^{1,2}, Kyeongyeon Ko^{1,2}, Mingyu Kim^{1,3}, Youngsik Park¹, Jongwan Ko^{1,2}, Myungshin Im³, Hyung Mok Lee³, Jeong-Eun Lee⁴, Goo-Hwan Shin⁵, Jangsoo Chae⁵, and Toshio Matsumoto^{1,6}

¹Korea Astronomy and Space Science Institute, Korea, ²University of Science and Technology, Korea, ³Seoul National University, Korea, ⁴Kyung Hee University, Korea, ⁵KAIST, Korea, ⁶JAXA, Japan

[P2-44]

16:30~18:30

Feasibility Study of a Future Korean Space Telescope

Dae-Hee Lee^{1,2}, Chang Hee Ree¹, Yong-Seon Song¹, Woong-Seob Jeong^{1,2}, Hong-Kyu Moon¹, Mingyu Kim³, Jeonghyun Pyo¹, Bongkon Moon¹, and Wonkee Park¹

¹Korea Astronomy and Space Science Institute, Korea, ²University of Science and Technology, Korea, ³Seoul National University, Korea

[P2-45]

16:30~18:30

MIRIS Paschen- α Galactic Plane Survey: Results in Cepheus

Il-Joong Kim¹, Jeonghyun Pyo¹, Woong-Seob Jeong¹, Kwang-il Seon¹, Min Gyu Kim², Dukhang Lee¹, Won-Kee Park¹, Sung-Joon Park¹, Bongkon Moon¹, Youngsik Park¹, Dae-Hee Lee¹, and Wonyong Han¹

¹Korea Astronomy and Space Science Institute, Korea, ²Seoul National University, Korea

[P2-46]

16:30~18:30

Signal Processing Electronics of POLIX - A Thomson X-ray Polarimeter

Gopala Krishna M R¹, Rishin P V¹, Biswajit Paul¹, Varun¹, Meena G², Rajagopala G¹, Pooja Verma¹, Sandhya P¹, Mamatha T S¹, Arasi Sathyamurthy¹, and Nagaraja H N¹

¹Raman Research Institute, India, ²ISRO Satellite Centre, India

[P2-47]

16:30~18:30

Capabilities of X-ray Instruments for Variability Study and Role of Small Satellites

Broja G. Dutta^{1,2}

¹W.B. State University, India, ²Indian Centre for Space Physics, India

[P2-48]

16:30~18:30

Stellar Populations and Evolution with CubeSats (SPEC)

Alessandra Di Cecco^{1,2}, Maria Cristina Falvella², Santi Cassisi¹, and Alessandro Gabrielli²

¹National Institute for Astrophysics, Italy, ²Italian Space Agency, Italy

[P2-49]

16:30~18:30

Study of Silicon Photomultipliers in the Range of 350 – 800 nm for Future Small Satellites

K. Lacombe¹, J. Knödseder¹, B. Houret¹, T. Gimenez², and P. Ramon¹

¹Research Institute in Astrophysics and Planetology, France, ²Centre National d'Etudes Spatiales, France

[P2-50]

16:30~18:30

X-ray Spectral Analysis of 2015 Outburst of V404 Cygni with the TCAF Solution

Jie-Rou Shang¹, D. Debnath², and Hsiang-Kuang Chang¹

¹National Tsing Hua University, Taiwan, ²Indian Centre for Space Physics, India

[P2-51]

16:30~18:30

An Attempt To Calculate Average Redshift Of Optically Dark Grbs

Veena Motwani¹ and S.N.A. Jaaffrey²

¹Mohanlal Sukhadia University, India, ²Bhopal Noble University, India

Session Title	[FrA1] 3-4. New Idea for Space Weather Research with Micro- and Nano-Satellites III
Date	September 22 (Friday)
Time	09:30~11:00
Room	Room A (Yeongju Hall A)
Session Chair	Junga Hwang (KASI, Korea)

[FrA1-1] 09:30~09:45

[Invited] Space Environment Instrumentation and Experiments Developed for the AeroCube CubeSat Bus

Drew L. Turner, T. Paul O'Brien, J. Bernard Blake, Rebecca Bishop, Justin Lee, Jim Clemmons, Bill Crain, Brian Hardy, Daren Rowen, and David Hinkley

¹The Aerospace Corporation, USA

[FrA1-2] 09:45~10:00

Problems of the DC Probe Measurement for Ionosphere Study and Its Solution

Koiichiro Oyama^{1,2,3}, Hui-Kuan Fang¹, and Alfred Chen¹

¹National Cheng Kung University, Taiwan, ²Kyushu University, Japan, ³Colt., Asia Space Environment Research Consortium, Japan

[FrA1-3] 10:00~10:15

[Invited] Miniaturized Plasma Wave Receiver System Targeting the use in Micro- and Nano-satellites

Hirotsugu Kojima¹, Mitsunori Ozaki², Yoshiya Kasahara², Satoshi Yagitani², Takahiro Zushi¹, Yuya Tokunaga², and Tsubasa Takahashi²

¹Kyoto University, Japan, ²Kanazawa University, Japan

[FrA1-4] 10:15~10:30

ASHI: an All-Sky Heliospheric Imager for Inclusion on a Near-Earth Small Satellite

B. V. Jackson¹, A. Buffington¹, P. P. Hick¹, H.-S. Yu¹, and M. M. Bisi²

¹University of California, USA, ²STFC Rutherford Appleton Laboratory, UK

[FrA1-5] 10:30~10:45

[Invited] Solar Terrestrial Environment Monitor (STEM): A Potential Heliophysics Mission at L5

Ying Liu¹, Benoit Lavraud², and the STEM team

¹National Space Science Center, Chinese Academy of Sciences, China, ²Universite de Toulouse, France

[FrA1-6] 10:45~11:00

[Invited] Multi-scale Investigations of Dayside Dynamics and High-latitude Ionospheric Responses

Kyoung-Joo Hwang^{1,2}, D. G. Sibeck¹, Jaejin Lee³, Jeffrey Klenzing¹, J. L. Burch⁴, B. L. Giles¹, D. Gershman^{1,2}, R. E. Ergun⁵, Y. Khotyaintsev⁶, and C. T. Russell⁷

¹NASA Goddard Space Flight Center, USA, ²University of Maryland, USA, ³Korea Astronomy and Space Science Institute, Korea, ⁴Southwest Research Institute, USA, ⁵University of Colorado, USA, ⁶Swedish Institute of Space Physics, Sweden, ⁷University of Califo

Session Title [FrB1] 5-2. Microsystems Technology for Space Applications I

Date September 22 (Friday)

Time 09:30~10:45

Room Room B (Yeongju Hall B)

Session Chairs Regina Lee (York University, Canada)

Mark A. Post (University of Strathclyde, UK)

[FrB1-1]

09:30~09:45

[Invited] In-Orbit Demonstration of an MEMS-based Cold-Gas Micropropulsion Module

Zhao Li¹, Shufan Wu¹, Kristoffer Palmer², Johan Sundqvist², Ana Zaldivar Salaverri², Tor-Arne Grönland²,
Xiwang Xia¹, Baopeng Kang¹, and Yanping Bai¹

¹Shanghai Engineering Centre for Microsatellites, China, ²NanoSpace AB, Sweden

[FrB1-2]

09:45~10:00

Safe and Low Cost Green Propellant Propulsion System

Nikolay Vedenkin¹ and Igor Borovik²

¹SatByul Co., Ltd., Korea, ²MAI, Russia

[FrB1-3]

10:00~10:15

3U CubeSat for Exploration of Gamma-Flashes from Earth and Space

Vedenkin Nikolay, Krasnov Alexei, and Yang Seehyung

SatByul Co., Ltd., Korea

[FrB1-4]

10:15~10:30

Micro-spectrometer Design for Nanosatellite Applications

Hugh Podmore¹, Alan Scott², Pavel Cheben³, Andrew Lohman¹, Zachary Corriveau¹, Thong Thai¹, Juan
Guzman¹, and Regina Lee¹

¹York University, Canada, ²Honeywell Aerospace, Canada, ³National Research Council, Canada

[FrB1-5]

10:30~10:45

The Study of Micro Laser Propulsion Technology

Shaoxia Jia, Jian Cai, Jinghua Yang, Ting Jin, and Kaifa Zheng

Institute of Microelectronics of Chinese Academy of Sciences, China

Session Title	[FrD1] 4-1. Advances in Astrophysical Research with Small Satellites III
Date	September 22 (Friday)
Time	09:30~11:00
Room	Room D (Baekrok Hall B)
Session Chair	Woong-Seob Jeong (KASI, Korea)

[FrD1-1]

09:30~09:45

CHEOPS: a Small ESA Mission for Exoplanet Characterisation

C. Corral van Damme¹, N. Rando¹, K. Isaak¹, J. Asquier¹, F. Ratti¹, R. Southworth², and F. Safa¹

¹European Space Agency, The Netherlands, ²European Space Agency, Germany

[FrD1-2]

09:45~10:00

BRITE-Constellation: Nanosatellites for Precision Photometry of Bright Stars

Gregg Wade¹ and the BRITE Executive Science Team

¹Royal Military College of Canada, Canada

[FrD1-3]

10:00~10:15

PicSat: a Photometry CubeSat for β Pictoris Observation

Lester David, Sylvestre Lacour, Vincent Lapeyrere, Mathias Nowak, Antoine Crouzier, Phillipe Perrot, Guillaume Schworer, Sanaa Rayane, Thierry Lemoult, and Philippe Trebuchet

LESIA Observatoire de Paris, France

[FrD1-4]

10:15~10:30

NANESSE, a Nanosatellite for Asteroseismology of Alpha Cen

Sébastien Salmon and Valérie Van Grootel

Université de Liège, Belgium

[FrD1-5]

10:30~10:45

Fine-Pointing Stability Characterization for the Transiting Exoplanet Survey Satellite (TESS)

Tam Nguyen, Edward Morgan, Roland Vanderspek, Alan Levine, Miranda Kephart, Kerri Cahoy, and George Ricker

Massachusetts Institute of Technology, USA

[FrD1-6]

10:45~11:00

Exploring a Low-cost CubeSat for Bright Star Spectrophotometric Characterization

Sarah Tuttle¹ and Charlie Conroy²

¹University of Washington, USA, ²Harvard University, USA

Session Title	[FrA2] 3-4. New Idea for Space Weather Research with Micro- and Nano-Satellites IV
Date	September 22 (Friday)
Time	11:30~13:00
Room	Room A (Yeongju Hall A)
Session Chair	Geoffrey Reeves (Los Alamos National Laboratory, USA)

[FrA2-1] 11:30~11:45

Solar Neutron Detector for a Microsatellite

Kazutaka Yamaoka and Hiroyasu Tajima
Nagoya University, Japan

[FrA2-2] 11:45~12:00

[Invited] Source of the Low Altitude Hiss in the Ionosphere

Lunjin Chen
University of Texas at Dallas, USA

[FrA2-3] 12:00~12:15

Novel and Simple Energy and Species Separation Method with Planar-Array Detectors: Applied to APDs to Measure Suprathermal Particles

Kristie LLera^{1,2}, K. Ogasawara², M. I. Desai^{1,2}, and S. Kanekal³

¹University of Texas, USA, ²Southwest Research Institute, USA, ³NASA Goddard Space Flight Center, USA

[FrA2-4] 12:15~12:30

Position and Directional Sensitive Detection of Space Radiation with Miniaturized Payloads on Board Small Satellites

Carlos Granja
Nuclear Physics Institute, Czech Academy of Sciences, Czech Space Research Center, Czech Republic

[FrA2-5] 12:30~12:45

TBA

TBA

TBA

[FrA2-6] 12:45~13:00

High Precision Relative Position Sensing System for Formation Flying Spacecraft

Anne-Marie d. Novo-Gradac, Guangning Yang, Steven X. Li, and Joseph M. Davila
NASA Goddard Space Flight Center, USA

Session Title	[FrB2] 5-2. Microsystems Technology for Space Applications II
Date	September 22 (Friday)
Time	11:30~13:00
Room	Room B (Yeongju Hall B)
Session Chairs	Regina Lee (York University, Canada) Mark A. Post (University of Strathclyde, UK)

[FrB2-1] 11:30~11:45

[Invited] Boosting Fault-Tolerance in High-Performance COTS-based Miniaturized Satellite Computers

Christian M. Fuchs, Todor Stefanov, Nadia M. Murillo, and Aske Plaat
Leiden University, The Netherlands

[FrB2-2] 11:45~12:00

Technology Demonstration Payload of Sub-wavelength Antireflection Surface (SWAS) for Satellite Solar Power Production Increase

Hugh Podmore, Konstantin Bolshakov, and Regina Lee
York University, Canada

[FrB2-3] 12:00~12:15

Hydronic Deorbiting Device

Vedenkin Nikolay¹, Borovik Igor², Pushkin Konstantin², and Chudina Yuliya²
¹SatByul Co., Ltd., Korea, ²Moscow Aviation Institute, Russia

[FrB2-4] 12:15~12:30

Autonomous Navigation for Small Satellites : Unlocking New Science Cases and Commercial Applications

Marco Agnan¹, Boris Segret², Daniel Hestroffer^{2,3}, Jordan Vannitsen^{1,4}, Gary Quinsac^{2,3}, and Jiun-Jih Miao⁵
¹ODYSSEUS Space Co., Ltd, Taiwan, ²Observatory of Paris, France, ³Paris Science Lettre Research University, France, ⁴National Cheng Kung University, Taiwan

[FrB2-5] 12:30~12:45

“OrbiSat” – Cubesat Kit based on Raspberry-Pi

Roman Zharkih, Anton Vlaskin, Maxim Kozelskiy, Anton Sivkov, Alexander Purikov, Dmitry Andreenkov, Igor Zharenov, and Zaynulla Zhumaev
SPUTNIX, Russia

[FrB2-6] 12:45~13:00

The Non-pyrotechnic Door Release Mechanism for Cubesat Deployer

Jiaolong Zhang^{1,2} and Jun Zhou^{1,2}

¹Northwestern Polytechnical University, China, ²Shaanxi Engineering Laboratory for Microsatellites, China