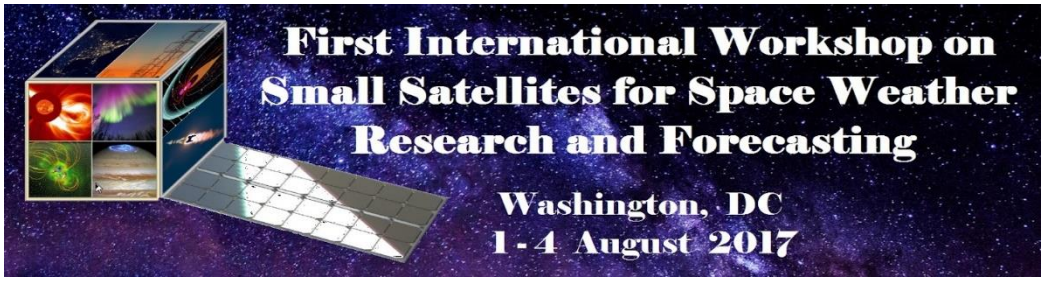


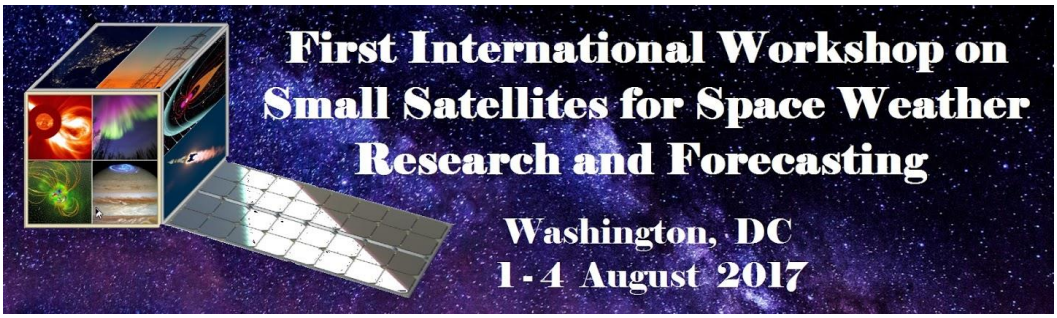
Tuesday, August 1, 2017

Time	Description/Session
7:30 AM	Breakfast
8:30 AM	**Welcome Remarks** **Session 1: Observations and understanding of specific space weather conditions (solar & interplanetary phenomena, geospace currents and fields, energetic particles, etc.) that can be investigated using small satellites.**
	Organizers: Teresa Nieves-Chinchilla, Vadim Uritsky
9:00 AM	**The role of small satellites toward the understanding of space weather** (Invited) Presentation ***Harlan Spence*** *(UNH, USA)*
9:25 AM	**Auroral electrical conductivities: A key observable in space weather specification and forecasting** (Invited) Abstract Presentation ***Robert Robinson*** *(The Catholic University of America, USA)*
9:50 AM	**AMICal and ATISE : Two cubesats optical payload for space weather monitoring** Abstract Presentation ***Mathieu Barthelemy*** *(Univ. Grenoble Alpes, France), Vladimir Kalegaev (Moscow State University, Russia), Konstantin Protassov (UGA, France)*
10:15 AM	**NOAA/NXS Space Weather Observational Needs: Current and Future** (invited) Presentation ***Douglas Biesecker*** *(NOAA, USA)*
10:40 AM	Break

11:00 AM	**Giant prominence eruption associated with fast CME on 2014 September 26** Abstract Presentation ***Aabha Monga*** *(ARIES, India), Ramesh Chandra (Kumaun University, India), Wahab Uddin (ARIES, India)*
11:25 AM	**Observations of the Radiation Belts by the FIREBIRD-II Dual Cubesats** Abstract Presentation ***Arlo Johnson*** *(Montana State University, USA) Dave Klumpar (Montana State University, USA), Mykhaylo Shumko (Montana State University, USA), John Sample (Montana State University, USA)*
11:50 AM	**Norwegian Space Weather Small Satellite Initiatives** Abstract Presentation ***Anja Stromme*** *(Norwegian Space Center, Norway)*
12:15 PM	**Tracking of the main properties of the auroral oval using small satellites as one of the key elements of space weather forecast** Abstract Presentation ***Marina Stepanova*** *(Universidad de Santiago de Chile, Chile)*
12:40 PM	**Near-Earth Currents: An Opportunity for Small Satellites** Abstract Presentation ***Ian Cohen*** *(JHU/APL, USA), Brian Anderson (JHU/APL, USA), Jesper Gjerloev (JHU/APL, USA)*
1:05 PM	Break for Lunch
2:30 PM	**Session 2: Identification of gaps in the operational space weather observing system and how to address these via the integration of small satellite - based information into general space weather modeling and forecasting infrastructure.**
	Organizers: David Jackson, Robert Robinson
2:40 PM	**Small satellite enabled new heliophysics science and prospects for improving our space weather capabilities.** (Invited) Presentation *Antti Pulkkinen (NASA/GSFC, USA)*
3:05 PM	**Small Satellites in NOAA's Future Space Weather Observations** (Invited) Abstract Presentation *Margaret Caulfield (NOAA/NESDIS, USA)*
3:30 PM	**WMO Space Weather Observation Requirements: Can Smallsats fill the gaps?** (Invited) Abstract Presentation ***David Jackson*** *(Met Office, UK), Toshi Kurino (World Meteorological Organization, Switzerland); Terry Onsager (NOAA/SWPC, USA)*
3:55 PM	Break

4:15 PM	**Using Small Satellites to Investigate Energy Input into the Ionosphere-Thermosphere by ULF Waves and Improve Space Weather Forecasting** Abstract Presentation ***Olga P. Verkhoglyadova*** *(NASA/JPL, USA), A.J. Mannucci (JPL/Caltech, USA); X. Meng (JPL/Caltech, USA); R.M. McGranaghan (JPL/Caltech, USA; UCAR, USA)*
4:40 PM	**Operational Analysis of Radiation Conditions in the near-Earth Space** Presentation ***Vladimir Kalegaev*** *(Skobeltsyn Institute of Nuclear Physics, Russia), V.Osedlo (MSU/SINP, Russia); M.Panasyuk (MSU/SINP, Russia), M.Podzolko (MSU/SINP, Russia), I. Yashin (MSU/SINP, Russia)*
5:05 PM	Wine and Cheese at CUA Space Weather Center

Posters
The Interaction between Coronal Mass Ejections (CMEs) and Coronal Holes (CHs) during the Solar Cycle 23 and its Geomagnetic Consequences Abstract ***Amaal Mohamed*** *(NRIAG, Egypt), Nat Gopalswamy (NASA/GSFC, USA)*
Main CME drivers behind Geomagnetic Storms in 2016 ***David Bialy*** *(American Univerisity, USA), Teresa Nieves-Chinchilla ((The Catholic University of America, USA), Silvina Guidoni (The Catholic University of America, USA)*
Study of Geomagnetic Field Response to Solar Wind Forcing ***Seunghoon Kim, Xin Li*** *(Queensborough Community College of CUNY, USA), Chigomezyo M. Ngwira (NASA/GSFC, USA)*
The Magnetic Evolution of Coronal Hole Bright Points ***Yang He*** *(CUNY, USA), Karin Muglach (NASA/GSFC, USA)*



Wednesday, August 2, 2017

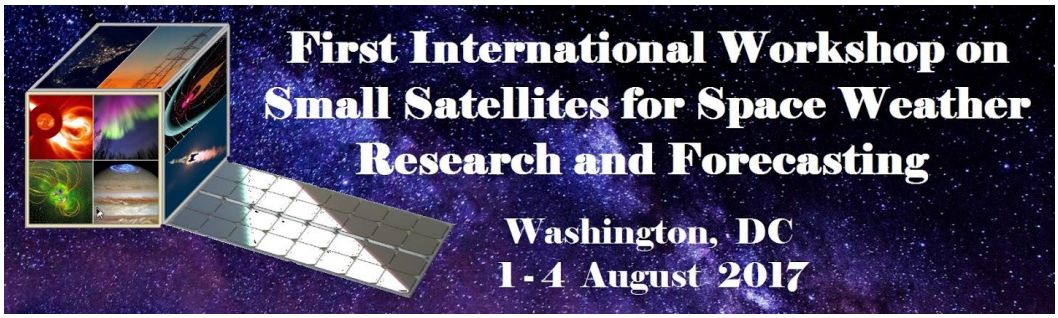
Time	Description/Session
7:30 AM	Breakfast
8:30 AM	**Session 3: Past and ongoing small satellite missions relevant to space weather research and applications: Lessons learned.**
	Organizers: Antonio Castro, Robert Robinson
8:40 AM	**Successes and Lessons Learned from University CubeSat Science Missions** (Invited) Presentation ***Therese Moretto Jorgensen*** *(University of Bergen, Norway)*
9:05 AM	**The FIREBIRD Mission: Lessons Learned and Scientific Highlights From More Than 60 Satellite-months of on Orbit Operations Measuring Energetic Particles in a Polar Low Earth Orbit** (Invited) Abstract Presentation ***David M. Klumpar*** *(MSU, USA), Harlan Spence (UNH, USA), and the entire FIREBIRD team*
9:30 AM	**The Impact of Radiation Belt Electron Precipitation on Atmospheric NOx and O3: Insights from the NSF FIREBIRD CubeSats** Abstract Presentation ***Katharine A. Duderstadt*** *(UNH, USA), J.B. Blake (Aerospace Corp, USA), A.B. Crew (Stanford, USA), C.-L. Huang (UNH, USA), A. Johnson (MSU, USA), D.M. Klumpar (MSU, USA), D.R. Marsh (NCAR, USA), J.G. Sample (MSU, USA), M. Shumko (MSU, USA), S. Smith (UNH, USA), H.E. Spence (UNH, USA)*
9:55 AM	**The Colorado Student Space Weather Experiment: A 3U CubeSat Measuring Energetic Particles in Near-Earth Space** Abstract Presentation ***Quintin Schiller*** *(NASA/GSFC, USA), X. Li (CU/LASP), S. Palo (CU/LASP), R. Kohnert (LASP)*

10:20 AM	**Estimating the state of the upper atmosphere with the CYGNSS and QB50 missions** Abstract ***Charles Bussy-Virat*** *(University of Michigan, USA), Aaron J. Ridley, (University of Michigan USA)*
10:55 AM	Break
11:15 AM	**Session 4: Next generation small satellite missions for observations and monitoring of space weather phenomena.**
	Organizers: Silvina Guidoni, Ricardo Tubio-Pardavila
11:25 AM	**The Scintillation Prediction Observations Research Task (SPORT): An International Science Mission using a CubeSat** (Invited) Abstract Presentation ***James Spann*** *(NASA/GSFC, USA) Charles Swenson (USU, USA), Otavio Durão (INPE, Brazil), Luis Loures (ITA, Brazil), Rod Heelis (UTD, USA), Rebecca Bishop (The Aerospace Corporation, USA), Guan Le (NASA/GSFC, USA), Mangalathayil Abdu (ITA, Brazil), Linda Krause (NASA/MSFC, USA), Clezio Denardin (INPE, Brazil), Lidia Shibuya (ITA, Brazil), Joseph Casas (NASA/MSFC, USA), Shelia Nash-Stevenson(NASA/MSFC, USA), Polinaya Muralikrishana (INPE, Brazil), Joaquim Costa (INPE, Brazil), Marcelo Banik de Padua (INPE, Brazil), Cristiano Wrasse (INPE, Brazil), G. Fry (NASA/MSFC, USA)*
11:50 AM	**Dellingr: NASA GSFC's first 6U CubeSat** (Invited) ***Larry Kepko*** *(NASA/GSFC, USA)*
12:15 PM	Break for Lunch
1:45 PM	**The Low-Latitude Ionosphere/Thermosphere Enhancements in Density (LLITED) Mission** Abstract ***Rebecca L. Bishop*** *(The Aerospace Corporation, USA), J. Clemmons (The Aerospace Corporation, USA); Aroh Barjatya (Embry-Riddle, USA); Richard Walterscheid (The Aerospace Corporation, USA)*
2:10 PM	**Project "Universat" of the System of Small Satellites for Monitoring of Natural and Artificial Space Threats** Abstract Presentation ***Vladislav I. Osedlo*** *(SINP MSU, Russia), M. I. Panasyuk (SINP MSU), M. V. Podsolko (SINP MSU), V. V. Kalegaev (SINP MSU), I. V. Yashin (SINP MSU), S. I. Svertilov (SINP MSU), V. L. Petrov (SINP MSU), A. M. Amelyushkin (SINP MSU), V. M. Lipunov (SAI MSU), E. S. Gorbovskoy (SAI MSU)*
2:35 PM	**petitSat - a 6U CubeSat to examine the link between MSTIDs and ionospheric plasma density enhancements** Abstract Presentation ***Jeff Klenzing*** *(NASA/GSFC, USA), Chuck Clagett (NASA/GSFC, USA); Luis dos Santos (NASA/GSFC, USA), Ryan Davidson (USU, USA), Greg Earle (VT, USA); Sarah Jones (NASA/GSFC, USA), Carlos Martinis (BU, USA), Nick Paschalidis (NASA/GSFC, USA); and Rob Pfaff (NASA/GSFC, USA)*

3:00 PM	**The CubeSat Imaging X-ray Solar Spectrometer (CubIXSS) Mission Concept** Abstract Presentation ***Amir Caspi*** *(SWRI, USA), C. DeForest, G.T. Laurent (SwRI, USA); A.Y. Shih, R.A. Schwartz (NASA/GSFC, USA); H. Warren (NRL, USA); T.N. Woods, J. P. Mason (CU/LASP, USA); S. Palo (CU/AES, USA); M. Stęślicki, J. Sylwester, S. Gburek, T. Mrozek, M. Kowalinski (PAN/CBK, Poland); G. Torre (FHNW, Switzerland); G. Crowley (ASTRA, USA); M. Schattenburg (MITLL, USA)*
3:25 PM	Break
3:50 PM	**Compact Radiation Belt Explorer - A new cubesat to study microbursts in the radiation belts** ***Ashley D. Jones*** *(The Catholic University of America, USA), S. Kanekal (NASA/GSFC, USA), M. Desai (SwRI, USA)*
4:15 PM	**Microsatellite Constellations for L5 and Solar Polar Orbits for Space Weather Monitoring** Presentation ***Angelos Vourlidas*** *(JHU/APL, USA), Paulett Liewer (JPL, USA), Neil Murphy (JPL, USA)*

Posters
Microsatellite Constellations for L5 and Solar Polar Orbits for Space Weather Monitoring ***Angelos Vourlidas*** *(JHU/APL, USA), Paulett Liewer (JPL, USA), Neil Murphy (JPL, USA)*

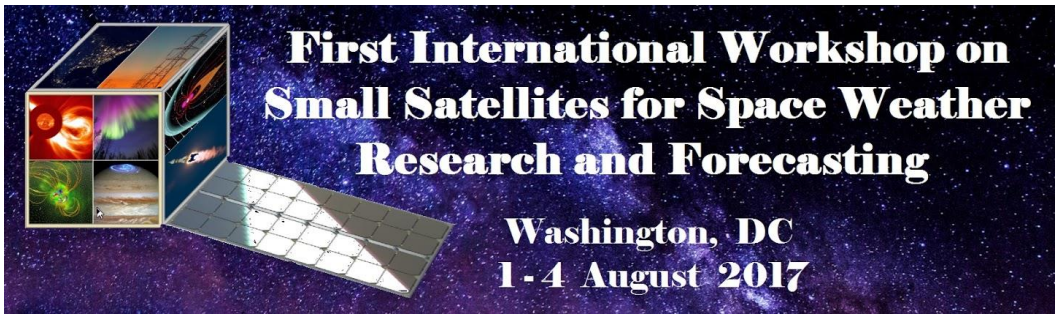
5:15 PM	Happy Hour at CUA
6:30 PM	Banquet



Thursday, August 3, 2017

Time	Description/Session
8:00 AM	Breakfast
9:00 AM	**Programmatic considerations: panel discussion with representatives from NASA, NOAA, NSF & other funding programs.**
	Organizers: Antti Pulkkinen, Robert Robinson
	Steven Clarke (NASA), Margaret Caulfield (NOAA), Michael Wiltberger (NSF), Michael Gremillion (USAF), David Jackson (UKMET), Juha-Pekka Luntama (ESA)
11:00 AM	**High-Altitude Testing of Space Payload via Weather Balloon: CUA's Education Projects Involving Undergraduate Students** (Invited) Presentation ***Masataka Okutsu*** *(The Catholic University of America, USA)*
11:30 AM	Break for Lunch
1:00 PM	**Session 6: Small-satellite subsystems (propulsion, ACS, communications, power, others) necessary for the study of the full range of space weather conditions.**
	Organizers: David Klumpar, Harlan Spence
1:10 PM	**Science Mission Directorate Small Satellite Technology** (Invited) Presentation ***Elsayed Talaat (****NASA/HQ, USA)*
1:35 PM	**Policy Challenges Related to Use of Small Satellites for Science Applications** (Invited) Presentation ***Bhavya Lal*** *(IDA STPI, USA)*
2:00 PM	**Low Cost Optical Communication for Small Satellites** (Invited) Abstract Presentation ***Darren Rowen*** *(The Aerospace Corporation, USA)*

2:25 PM	**Technologies to enable the next generation of multi-satellite remote sensing systems** (Invited) Abstract Presentation ***Brian Gunter*** *(GA Tech, USA)*
2:50 PM	Break
3:10 PM	**Effects of space weather on a nano-satellite battery: proof of concept** Abstract Presentation ***Marcos A. Diaz*** *(Universidad de Chile, Chile, D. Acuña (EE Department, University of Chile); M. Stepanova (Physics Department, University of Santiago of Chile); M. Orchard (EE Department, University of Chile)*
3:25 PM	**Small Satellite Constellations for Space Weather Research and Forecasting** Abstract Presentation ***Santiago Rodriguez*** *(INTA, Spain, M. Álvarez (INTA, Spain)*
3:40 PM	**Advancing Space Weather Research with CeRES and CuSP** (Invited) Abstract ***Shrikanth Kanekal*** *(NASA/GSFC, USA)*
4:05 PM	**Free space optical communications for nanosatellites** (Invited) Presentation ***Angie Crews*** *(MIT, USA)*
4:30 PM	**Survivability and Thermal Control in CubeSats for Deep Space Missions** Abstract ***Ricardo Tubío-Pardavila*** *(CINAE, Spain), Antonio Vázquez-García (CINAE, Spain); Franco Pérez-Lissi (CINAE, Spain), Fernando Aguado Agelet (CINAE; U.Vigo, Spain)*
4:45 PM	**Session 6 closing remarks**



Friday, August 4, 2017

Time	Description/Session
7:30 AM	Breakfast
8:30 AM	**Session 8: Access to space for space weather smallsats. ISS deployment, rideshares, Venture class launch services, ELaNa, other opportunities**
	Organizers: Larry Kepko, James Spann
8:40 AM	**Non-traditional access to space -looking at new opportunities with Reusable launch vehicles and High Altitude Balloon platforms** (Invited) Abstract Presentation ***Karen Shelton-Mur*** *(FAA, USA)*
9:05 AM	**New Satellite Rideshare Opportunities – Enabling a New Class of Science Missions** (Invited) Presentation ***Robert Caffrey*** *(NASA/GSFC)*
9:30 AM	**Small Satellite Launch Beyond LEO** (Invited) Abstract ***Philip Brzytwa*** *(Spaceflight Industries, USA)*
9:55 AM	**Lean Satellite Systems and Science Payload Missions** Abstract ***Joseph Casas*** *(NASA/MSFC, USA)*
10:20 AM	Break
10:40 AM	**Session 5: Space weather instrumentation for small satellite platforms. Observational requirements and operational challenges. Ground systems for data acquisition.**
	Organizers: Masataka Okutsu, Teresa Nieves-Chinchilla

10:50 AM	**NASA Near Earth Network (NEN) Support for Lunar and L1/L2 CubeSats** (Invited) Abstract Presentation ***Scott Schaire*** *(NASA/Wallops, USA), Serhat Altunc (NASA/GSFC, USA), Yen Wong (NASA/GSFC, USA), Marta Shelton (NASA/GSFC, USA), Peter Celeste (BAH, USA), Michael Anderson (BAH, USA), Trish Perrotto (BAH, USA)*
11:15 AM	**An Overview of NASA/GSFC Instruments and Technologies for Heliophysics and Space Weather** (Invited) Presentation ***Nikolaos Paschalidis (****NASA/GSFC, USA)*
11:40 AM	**SUCHAI 2/3 mission AMR magnetometer for in situ measurements** Abstract Presentation ***Joaquín Díaz-Peña*** *(Universidad de Chile, Chile), Marcos Díaz (SPEL, (Universidad de Chile, Chile), Miguel Patiño (Universidad de Chile, Chile), Ángel Abusleme (Pontificia Universidad Católica de Chile, Chile)*
12:05 PM	**The Use of GNSS Receivers on CubeSats for Space Weather Observations** Abstract Presentation ***Rebecca L. Bishop*** *(The Aerospace Corporation, USA)*
12:30 PM	Break for Lunch
1:55 PM	**Readout Integrated Circuits as Enabling Technology for Smallsat Radiation Monitoring Instruments** Abstract Presentation ***Timo A Stein*** *(IDEAS, Norway), K. Røed (UiO, Norway); D. Meier (IDEAS, Norway)*
2:20 PM	**An ultra-compact spectrometer for space weather monitoring** Abstract Presentation ***Amy Keesee*** *(WVU, USA), E. Scime (WVU, USA) M. Dugas (NASA/ARC, USA), J. Tersteeg (NASA/ARC, USA), S. Ellison (NASA/ARC, USA)*
2:45 PM	**A Cubesat Halpha and Vector Magnetogram for Space Weather Monitoring** Abstract Presentation ***Haosheng Lin*** *(University of Hawaii, USA)*
3:10 PM	Break
3:35 PM	**Compact Space Weather Sensors for the Air Force Mission** Abstract Presentation ***David A. Barton*** *(AFRL, USA), Chadwick Lindstrom (AFRL, USA)*
4:00 PM	**New design of a planar fixed-potential Langmuir probe for measuring ionospheric electron density** Presentation ***Miguel Martinez*** *(Universidad de Chile, Chile)*

4:25 PM	**Analysis Model to Optimize Ground Stations Location in Built-up Areas: preliminary analysis in the case scenario at The Catholic University of America** Abstract Presentation ***Jesus Nieves*** *(Universidad Politecnica de Madrid, Spain)*
4:50 PM	**Closing Remarks**

Posters
Enhancements of the compact Ion and Neutral Mass Spectrometer for measuring atmospheric composition on the Dellingr, ExoCube2 and petitSat missions ***Sarah L. Jones*** *(NASA/GSFC, USA), N. Paschalidis (NASA/GSFC, USA), M. Rodriguez (NASA/GSFC, USA),, E. Sittler (NASA/GSFC, USA), D. Chornay (NASA GSFC), P. Uribe (NASA/GSFC, USA), T. Cameron (NASA/GSFC, USA)*
Development of nanosatellite instrumentation and ground-based receiver system for total electron content measurements Abstract ***Edgardo E. Pacheco*** *(IGP JRO, Peru) J. Chávez (IGP/JRO, Peru), J. Gómez (IGP/JRO, Peru), F. Villanueva (IGP/JRO, Peru), M. Milla (IGP/JRO, Peru), C.E. Valladares (UTD, W.B. Hanson CSS, USA)*
Analysis Model to Optimize Ground Stations Location in Built-up Areas: preliminary analysis in the case scenario at The Catholic University of America ***Jesus Nieves*** *(Universidad Politecnica de Madrid, Spain)*