

# *JCET: QUARTERLY REPORT # 3*

*PERIOD COVERED: APRIL 1 - JUNE 30, 2016*



Dear GSFC Colleagues,

The new JCET cooperative agreement is now in its third quarter. This report describes the research of the JCET faculty, funding proposals that have been submitted this quarter, education and outreach efforts of the Center, changes in personnel and upcoming events.

With great pleasure we submit this quarterly report highlighting our ongoing partnership with NASA Goddard Space Flight Center.

Belay B. Demoz and the JCET team.

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HIGHLIGHTS : *A SUMMARY OF NEWSWORTHY JCET ACTIVITY.*

**Jay Herman** (614) reported that DSCOVR observed Jupiter in all 10 wavelengths and images of the 4 Galilean Moons. The observation is a once per year possibility.

**Valerie Casasanto** (610) presented opportunities for future international collaboration with the ICESat-2/GLOBE citizen science/student program to the International Astronautical Federation community at planning meetings in Paris, France, March 23rd.

**Bill Olson** (612) attended the 14th Specialist Meeting on Microwave Radiometry and Remote Sensing of the Environment (MicroRad 2016) on April 11-14, 2016, at Aalto University, Espoo, Finland. MicroRad gathers the passive microwave radiometry community to discuss new designs, research results, technological advances, and applications such as soil moisture and state, ocean salinity, cryosphere, ocean dynamics, and atmospheric sounding. MicroRad 2016 was sponsored by the Geoscience and Remote Sensing Society (GRSS) of the Institute of Electrical and Electronics Engineers (IEEE) and Aalto University.

**Christopher Shuman** (615) presented "Changes to the Antarctic Peninsula 1986-2016" at the UMBC spring research forum on Friday, April 8; <http://research.umbc.edu/seminars-and-workshops/?id=37079>

**Jay Herman** (614) and **Nader Abuhassan** (614) successfully installed 6 updated Pandoras at the Korean sites needed for supporting the upcoming KORUS-AQ campaign. The new versions of Pandora will be able to retrieve additional species such as Formaldehyde.

**Jasper Lewis** (612) and **Valerie Casasanto** (610) participated in the USA Science and Engineering Festival that took place April 15-17 at the Walter E. Washington Convention Center in Washington, DC. Several hundred thousand visitors were expected at the event overall. An estimated 2500-3000 stopped by the GPM table alone.

**Ali Tokay** (612) participated in the European Geosciences Union General Assembly 2016, 17–22 April 2016, Vienna, Austria, giving or co-authoring 12 presentations and co-convening three sessions.

**Tamas Varnai** (613), **Tianle Yuan** (613), and **Zhibo Zhang** (UMBC Physics/JCET) attended the 2016 International Radiation Symposium in Auckland New Zealand April 16-22. Their presentations can be found here: <http://irs2016.org/wp-content/uploads/2016/04/FINAL-PROGRAMME.pdf>. At the same meeting, Zhibo Zhang received the International Radiation Commission (IRC) Young Scientist Award (YSA) awarded "to a young scientist who has made recent noteworthy contributions to radiation studies and is regarded as having great potential to become a leading radiation scientist in the future." As an IRC YSA recipient Zhang gave a keynote talk.

**Glenn Wolfe** (614) gave an invited presentation to the UMBC Department of Chemistry on 04/11/2016. The talk, "Isoprene: Where the Forest Meets the Sky," highlighted measurements acquired with NASA's In Situ Airborne Formaldehyde (ISAF) instrument and other results from the NASA SEAC4RS mission.

**Bill Olson** (612) attended the European Geosciences Union General Assembly Meeting April 17-22, 2016, Vienna, Austria. This meeting provides a key opportunity for NASA scientists to directly interact with European and other international colleagues.

**Brock Blevins** (614) and **Ana Prados** (614), with NASA's Applied Remote Sensing Training Program (ARSET), organized a NASA Capacity Building Program Booth at the InterAction Forum 2016 in Washington D.C. on April 18-20. InterAction is an alliance of 180 Nongovernmental Organizations (NGOs). Their participation in conference sessions and at the NASA booth served to raise awareness of NASA Earth Science and its application in the context of international development and humanitarian aid.

**Valerie Casasanto** (610) participated in the Earth Day events that took place April 21-22 at Union Station, Washington DC. Hands-on activities included the ICESat-2 sea ice towers and hand-held clinometer height activity, SMAP soil moisture measurement activity, and Cloudsat "Cloud in a Bottle" activity.

**Ana Prados** (614) attended the Eighth Meeting of the Virtual Laboratory for Training and Education in Satellite Meteorology (VLAB). The meeting was held at the Caribbean Institute for Meteorology and Hydrology in Bridgetown, Barbados on May 9-13th. VLAB is a global network of training centers and meteorological satellite operators, established by the World Meteorological Organization (WMO) and the Coordination Group for Meteorological Satellites (CGMS). **Prados** represented NASA's Applied Remote Sensing Training Program (ARSET). The goal was to establish collaborations and share best practices with other global centers engaged in training for satellite applications.

**Kevin Turpie** (616) has been nominated by Jared Entin and Christine McMahon-Bognar from NASA/HQ to be the NASA participant in an international feasibility study for the advancement of coastal and inland aquatic ecosystem observations. This feasibility study is in response to the Water Strategy Implementation Science Team recommendation to the Committee for Earth Observation Satellites (CEOS), currently being chaired by Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO). The recommendation includes a feasibility study for an aquatic ecosystem imaging spectrometer, with some additional study on how to make sure planned land and ocean sensors can be slightly modified so they can deal much better with inland to estuarine to coastal waters as well as sea grasses, coral reefs and shallow water bathymetry.

**Kevin Turpie** (616) presented the first full overview of the Hyperspectral Infrared Imager (HypIRI), currently a Tier 2 Decadal Survey mission, and activities of the HypIRI Aquatic Studies Group (ASG) at the annual Ocean Color Research Team meeting, which was held in Silver Spring, Maryland from May 2nd to the 4th. The ASG is a growing international community of practice for scientists and researchers from the coastal and inland water remote sensing field. The group is chartered to identify challenges and opportunities for further research, to give voice to the coastal and inland aquatic remote sensing community to NASA's HypIRI mission, and the ASG is working collaboratively with the PACE and GeoCAPE missions.

**Valerie Casasanto** (610) provided visible light activities, including a laser altimetry simulation, at the "Tour of the Electromagnetic Spectrum" Sunday Experiment on May 15th at the Visitor's Center, attended by over 130 adults and children. Participants learned about the electromagnetic spectrum and technologies that NASA uses to "see" beyond the visible.

**Petya Campbell** (618) gave an oral presentation entitled "Characterization of EO-1 Hyperion surface reflectance estimates in a desert target site" at the SPIE Commercial and Defense Sensing in Baltimore, Maryland.

**Jay Herman** (614) reported that the first validated ozone retrievals from DSCOVER-EPIC were been obtained for 10 days of data after a new EPIC calibration was used based on matching OMPS measured radiances at the top of the atmosphere. DSCOVER-EPIC now agrees with OMPS ozone within 1.5% over the strip centered at 13:30 local time covered by the OMPS field of view. Based on this result, a full reprocessing of one year of EPIC data is underway.

**Glenn Wolfe** (614) shared the excitement of the KORUS-AQ mission with over 500 K-12 students at Osan American Elementary, Middle and High schools in South Korea. **Wolfe** was part of a team that gave ten in-person presentations at the schools, welcomed students and teachers to see their aircraft on base, and conducted live chats with students and teachers from onboard the NASA DC-8 while flying over the Korean peninsula.

**Kevin Turpie** (616) chaired the 4th Annual HypsIRI Aquatic Forum at GSFC on June 3rd. The meeting theme was airborne hyperspectral data over coastal and inland waters: their application, characteristics, and availability for the development of operational algorithms. This meeting added to the ongoing dialogue regarding the development of data products for coastal and inland aquatic ecosystem science and applications, which supports missions such as HypsIRI, PACE, and GeoCAPE.

**Valerie Casasanto** (610) spoke with 30 third-to-fifth grade students in an after-school girls STEM program at the Maryvale Elementary School located in Rockville, MD on On May 17. **Casasanto** discussed how she came to work at NASA, STEM careers, and explained the ICESat-2 mission. At the end of the program, she led a hands-on interactive activity related to lasers.

**Catherine Kruchten** (160) and **Susan Hoban** (160) participated in a kick-off meeting for the NASA's BEST (Beginning, Engineering, Science and Technology) project held at NASA Dryden Flight Research Center, June 6 - 8.

**Kevin Turpie** (616) was an invited participant of the National Center for Ecological Analysis and Synthesis meeting for the NASA-sponsored "Prospects and Priorities for Satellite Monitoring of Global Marine Biodiversity" in Santa Barbara, CA from 6-10 June. **Turpie** provided his expertise regarding coastal remote sensing of changes in communities of sessile organisms and other foundation species (e.g., emergent vegetation, submerged aquatic vegetation, and corals) to develop an understanding of changes in biodiversity of coastal habitats in response to global stressors (e.g., climate change and impact of a growing human population along coasts). The objective of the meeting is to develop a perspectives paper on remote sensing of marine biodiversity for publication in the peer-review literature.

**Jay Herman** (614) participated in the KORUS-AQ (Korea-US Air Quality) field campaign, ending on 12 June. The campaign measured ozone, formaldehyde and nitrogen oxides in the Seoul area and over the ocean, east and west of the Korean peninsula, finding levels like the US in the 1960s.

**Amita Mehta** (612) held the third of four webinars to train application users of precipitation data to access GPM data products on June 12. There were 55 attendees across the two sessions, from 17 states and 18 countries.

**Brock Blevins** (614) and Ana Prados (614) hosted three webinars for the Applied Remote Sensing Training (ARSET) Program that reached a record 938 attendees in one day. The second broadcast on the 'Fundamentals of Satellite Remote Sensing for Health Monitoring' attracted 182 individuals. 'Using NASA Remote Sensing for Disaster Management' and 'Remote Sensing of Forest Cover and Change

Assessment for Carbon Monitoring' each kicked off their webinar series by hosting 417 and 339 people, respectively

**Kevin Turpie** (616) served as a member of a review panel for the Belgian Science Policy Organization on June 14-15. The panel, consisting of six invited experts, reviewed fifteen proposals for third Belgian program called the Support to Exploitation and Research in Earth Observation (STEREO III), supporting seven-year projects that employ remote sensing data to Earth science and applications.

**Susan Hoban** (160) led a week-long workshop entitled "Family Friendly Programming" at the Northwest Indian College in Bellingham, WA, June 20-24. Twelve educators and four Native American students participated in this workshop. The workshop uses NASA Mars Science Lab mission content as the context for learning to program an autonomous rover. This workshop was funded through the MUREP American Indian and Alaska Native STEM Partnership program.

**Lorraine Remer** (UMBC-based) presented a poster entitled "Aerosol Retrieval over Urban Area in MODIS Dark Target Land Algorithm" at the 10th Anniversary Yoram Kaufman Memorial Symposium, hosted by Goddard the on June 21st - 23rd. The purpose of the symposium is to bring together leading aerosol, cloud, modeling and climate scientists from around the world and to pay tribute to Goddard scientist Dr. Kaufman, to make the next generation of scientists aware of his towering influence which is still felt to this day. The symposium, which opened with welcoming remarks by Piers Sellers, was attended by approximately 150 scientists including representatives from the U.S., Canada, Israel, Finland, the Netherlands, Italy, India, Germany, the U.K. and Japan. Many additional participants joined us via webex and broadcast to NASA Langley.

## PROPOSALS: *LISTING OF PROPOSALS AWARDED AND SUBMITTED*

### *AWARDED*

**Bian, Huisheng:** Department of Commerce award entitled "Towards the improvement of chemical lateral boundary conditions for the National Air Quality Forecasting Capability," in the amount of \$35,633.

**Delgado, Ruben:** Sub-contract to University of Delaware entitled "Improved understanding of vertical mixing in the lower atmospheric boundary layer in the presence of wind turbines via numerical simulations and measurements," in the amount of \$65,000.

**Hoban, Susan:** sub-contract to the Northwest Indian College, entitled "NASA Inspires Native American Students (NINAS)," in the amount of \$81,813.

**Huemmerich, K. Fred:** sub-contract to University of Nebraska – Lincoln, entitled "Evaluating Growing Season Length and Productivity Across the ABoVE Domain Using Novel Satellite Indices and a Ground Sensor Network," in the amount of \$79,730.

**Zhai, Pengwang:** JPL award entitled "Validation of the Line-by-Line Radiative transfer Modeling Task," in the amount of \$17,000.

***SUBMITTED***

**Aksoy, Mustafa (PI)** NSF 16-541 Reconstruction of Antarctic Climate History by Remote Sensing of Ice Sheet Subsurface Temperatures

**Bian, Huisheng (PI)** NASA Roses 2016 – MAP Global marine organic aerosol and DMS: Emissions, distributions, and climate impacts via aerosol-cloud-radiation interaction

**Bian, Huisheng (Co-I)** NASA Roses 2016 – MAP Cloud scavenging of aerosols in the NASA GEOS-5 model: Physically based parameterizations, uncertainties, and impact on aerosol direct and indirect effects

**Campbell, Petya (Co-I)** NASA - NNH16ZDA001N-ECO4CAST Developing a forest conservation tool for Madagascar using Earth Observation and ecological and forest growth modeling

**Demoz, Belay (Co-I)** NSF 16-544 Consortium for Training of Underrepresented STEM Professionals (CTUSP)

**Demoz, Belay** NOAA-OAR-OWAQ-2016-2004824 Implementing an automated upper air monitoring for temperature, moisture profiles, and aerosol mixing layer height in the Washington, DC – Baltimore, MD region.

**Hoban, Susan (PI)** MADE CLEAR Climate Change Education Summit Something to CHEW On

**Hoban, Susan (Co-I)** NSF 16-544 Consortium for Training of Underrepresented STEM Professionals (CTUSP)

**Huemrich, K. Fred (PI)** NASA ROSES A.5 Carbon Cycle Combining plant functional responses from hyperspectral imagery with ecosystem models to improve estimates of carbon balance in savanna ecosystems

**Olson, Bill (PI)** Modeling, Analysis, and Prediction Improving Forward Radiative Simulations of Satellite Observations Affected by Ice-Phase Precipitation for Earth System Model/Assimilation Systems

**Remer, Lorraine (PI)** Modeling, Analysis, and Prediction Diurnal signatures in aerosol-cloud processes as viewed by geostationary sensors

**Strow, Larrabee (PI)** FY2016 to 2004791 Calibration and Validation of the CrIS Operational Sensor

**Yuan, Tianle (PI)** Modeling, Analysis, and Prediction Modeling, analysis and prediction of the dust-climate

**Zhang, Zhibo (Co-I)** Modeling, Analysis, and Prediction Novel systematic evaluations of cloudiness in Large Scale Models for the improvement of cloud schemes and the representation of cloud effects on climate

**Zhang, Zhibo**      A.29 NASA Data for Operation and Assessment      Development Of A Test-Bed  
 On The Basis Of NASA A-Train Satellite Cloud Measurements For Evaluating And Improving The  
 Cfmip-Cosp

MEETINGS AND FIELD WORK ATTENDED: *LISTING OF MEETINGS, TRAVEL*

Traveler	Destination	Begin	End	Purpose
Prados, Ana	Springfield, VA to Washington, D.C.	4/18	4/20	Interaction Forum/NASA Activity Booth
Hepplewhite, Christopher	Kord, US to Nice, France	4/6	4/23	EUMETSAT IASI2016 Satellite Conference
Yuan, Tianle	MD to Auckland, NZ	4/14	4/22	IRS 2016 Mtg
Herman, Jay	MD to ICN, Korea	4/3	4/15	Install Pandora Instruments – NASA Korus-AQ campaign
Varnai, Tamas	MD to Auckland, NZ	4/13	4/26	IRS 2016 Mtg
Tokay, Ali	Istanbul, Turkey to Vienna, Austria	4/17	4/20	EGU 2016 mtg
Pavlis, Erricos	MD to Vienna, Austria	4/14	4/23	2016 EGU General Assembly (4/17-4/22), the GGOS CB mtg (4/16), the IERS DB mtg (4/17) and the GGOS BNO mtg (4/20)
Strow, Lawrence	Claysville, PA to Nice, FR	4/9	4/16	EUMETSAT IASI2016 Satellite Conference
Abuhassan, Nader	MD to Seoul, South Korea	4/3	4/13	Install Pandora Instruments – NASA Korus-AQ campaign
Mehta, Amita	MD to Tuscaloosa, AL	4/25	4/28	NASA Applied Sciences Water Resources Program Science Team meeting
Martins, J. Vanderlei	MD to NASA Wallops	4/20	4/20	Mtg-NASA Wallops
Demoz, Belay	MD to Boulder, CO	4/25	4/29	WMO GRUAN speaker/conf organizer.
Zhang, Zhibo	MD to Auckland, NZ	4/14	4/23	IRS 2016 Mtg
Delgado Gilewski, Ruben	Local travel-DC	4/27	4/28	DOE/BOEM Offshore Wind Energy Workshop
Delgado Gilewski, Ruben	Local travel-Ocean City, MD	4/18	4/18	Deployment of UMBC Wind lidar to Coast guard OC facility
Prados, Ana	Springfield, VA to Bridgetown, Barbados	5/8	5/14	8th Mtg of the Virtual Laboratory Management Group at Caribbean Institute for Meteorology and Hydrology

Wolfe, Glenn	MD to Seoul, South Korea	5/1	5/15	KORUS-AQ Field campaign
Mehta, Amita	MD to Tampa, FL	5/3	5/5	Conduct training at National Water Quality Monitoring Conf.
Demoz, Belay	MD to Boulder, CO	5/1	5/4	NSF - NCAR review team
Delgado Gilewski, Ruben	MD to Dallas, TX	5/22	5/25	Windfarms 2016 mtg at Univ of Texas- Dallas campus
Delgado Gilewski, Ruben	Local travel- Edgemere, MD	5/2	5/2	Bus. Network for Offshore Wind Annual Mtg at Tradepoint Atlantic & Sparrows Shipyard
Abuhassan, Nader	MD to Seoul, Korea	5/10	5/19	NASA's KORUS-AQ and OC field campaigns
Carroll, Brian	MD to Boulder, CO	5/19	7/20	Doppler Wind Lidar Summer Internship at NOAA ESRL
Barnes, William	San Antonio, TX to Silver Spring, MD	6/5	6/11	MODIS Science Team meeting
St. Pe, Alexandra	DC to Dallas, TX	5/22	6/1	WindFarms2016 meeting
Vermeesch, Kevin	MD to Fribourg, Switzerland	6/10	6/18	NDACC Lidar Working Group Meeting
Kruchten, Catherine	MD to Palmdale, CA	6/7	6/10	NASA BEST Educators Kick-off Meeting at Armstrong
Turpie, Kevin	MD to Santa Barbara, CA	6/5	6/9	NCEAS for the NASA-sponsored "Prospects and Priorities for Satellite Monitoring of Global Marine Biodiversity" working group mtg.
Turpie, Kevin	MD to Brussels, Belgium	6/9	6/20	Serve on STEREO III programme review panel for the Belgium Science Policy Organization (belspo).
Wolfe, Glenn	MD to Girona, Spain	6/25	7/1	Invited talk at Gordon Research Conference on "Biogenic Hydrocarbons and the Atmosphere
Carroll, Brian	Colorado to Colorado	6/27	7/1	18th Coherent Laser Radar Conf
St. Clair, Jason	MD to Palmdale, CA	6/26	7/16	Support for CAFE instrument test flights on NASA ER-2, support for ISAF instrument on NASA DC-8 ATOM campaign test flights.
St. Clair, Jason	Palmdale, CA to Pellston, MI	6/30	7/6	Install CAFE instrument at U Michigan Biological Station site for PROPHET field campaign, and train Harvard graduate students in instrument operation.



Hoban, Susan	MD to Bellingham, WA	6/14	8/24	Conduct workshops with Northwest Indian College
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EDUCATION AND OUTREACH: *LISTING OF OUTREACH, GRADUATE SEMINAR, COURSES TAUGHT AND ADVISEMENT, AND STUDENT ACCOMPLISHMENTS.*

**Recent Affiliations:**

Susan Hoban was affiliated with Computer Science and Electrical Engineering as an Affiliate Associate Professor.

**Courses taught by JCET Faculty & Staff in Spring 2016:**

PHYS 622: Aerosols, clouds and radiation, Dr. Belay Demoz

GES 400x: Earth's Cryosphere, Dr. Christopher Shuman

FYS 108: Mathematics in Literature, Ms. Catherine Kruchten

**JCET Seminar:**

The 2015-16 cohort of nine JCET graduate students completed the Spring JCET Seminar Series. The students were tasked with developing a proposal to NASA to study dust transport across the Atlantic. Each week one student prepared and delivered a presentation on one aspect of the proposal. This exercise has become an important component in the professional development of these young scientists. The seminar series is open to the public.

Link to [Seminar schedule](#)

Link to [Seminar website](#)

**Student Activities:**

Mr. Tahmid Syed Abtahi has been chosen to be the JCET Graduate Fellow for the 2016-17 academic year. Mr. Abtahi is working with JCET Faculty members Dr. Ruben Delgado (Physics) and Dr. Belay Demoz (Physics), and Dr. Tinoosh Mohsenin in the Department of Computer Science and Electrical Engineering. Mr. Abtahi's project is entitled "Deep Learning Software-Hardware Framework for LIDAR Data Analysis."

PUBLICATIONS : *LISTING OF REPORTS AND ARTICLES*

**Bian, Huisheng**

*Journal Article, Professional Journal (Published)*

Alvarado, M. J., Lonsdale, C. R., Macintyre, H. L., Bian, H., Chin, M., Ridley, D. A., Heald, C. L., Thornhill, K. L., Anderson, B. E., Cubison, M. J., Jimenez, J. L., Kondo, Y., Sahu, L. K., Dibb, J. E., Wang, C. (2016). Evaluating Model Parameterizations of Submicron Aerosol Scattering and Absorption with In Situ Data from ARCTAS 2008. *Atmos. Chem. Phys.*, doi:10.5194/acp-2015-935.

## **Delgado, Ruben**

*Journal Article, Professional Journal (Accepted)*

Orozco, D., Beyersdorf, A., Ziemba, L., Berkoff, T. A., Zhang, Q., Delgado, R., Hennigan, C. J., Thornhill, K., Parworth, C., Kim, H., Young, D., Hoff, R. M. (2016). Hygroscopicity Measurements of Aerosol Particles in the San Joaquin Valley, CA, Baltimore, MD, and Golden, CO. *Journal of Geophysical Research-Atmospheres*, 121. [onlinelibrary.wiley.com/doi/10.1002/2015JD023971/epdf](https://onlinelibrary.wiley.com/doi/10.1002/2015JD023971/epdf)

*Journal Article, Professional Journal (Accepted)*

Su, J., Felton, M., Lei, L., McCormick, M. Patrick, Delgado, R., St. Pé, A. (2016). Lidar Remote Sensing of Cloud Formation Caused by Low-Level Jets. *Journal of Geophysical Research-Atmospheres*, 121, 8. [onlinelibrary.wiley.com/doi/10.1002/2015JD024590/epdf](https://onlinelibrary.wiley.com/doi/10.1002/2015JD024590/epdf)

## **Iourganov, Leonid N.**

*Journal Article, Academic Journal (Accepted)*

Yurganov, L., Leifer, I. (in press). Abnormal concentrations of atmospheric methane over the Sea of Okhotsk during 2015/2016 winter. *CPRSES*, 13(3). [jr.rse.cosmos.ru/?lang=eng](http://jr.rse.cosmos.ru/?lang=eng)

*Journal Article, Academic Journal (Accepted)*

Yurganov, L., Leifer, I. (2016). Estimates of methane emission rates from some Arctic and sub-Arctic areas, based on orbital interferometer IASI data. *CPRSES*, 13(2), 107-119. [jr.rse.cosmos.ru/?lang=eng](http://jr.rse.cosmos.ru/?lang=eng)

*Journal Article, Academic Journal (Published)*

Yurganov, L., Leifer, I., Lund Myhre, C. (2016). Seasonal and interannual variability of atmospheric methane over Arctic Ocean from satellite data. *CPRSES*, 13(2), 107-119. [jr.rse.cosmos.ru/?lang=eng](http://jr.rse.cosmos.ru/?lang=eng)

## **Lewis, Jasper R.**

*Journal Article, Academic Journal (Published)*

Lolli, S., Lewis, J. R., Welton, E. J., Campbell, J. R., Gu, Y. (2016). Understanding Seasonal Variability in thin Cirrus Clouds from Continuous MPLNET Observations at GSFC in 2012. *EPJ Web of Conferences*, 119 (2016) 11004, 119. [dx.doi.org/10.1051/epjconf/201611911004](https://dx.doi.org/10.1051/epjconf/201611911004)

*Journal Article, Academic Journal (Accepted)*

Campbell, J. R., Lolli, S., Lewis, J. R., Gu, Y., Welton, E. J. (2016). Daytime Cirrus Cloud Radiative Forcing Properties at a Midlatitude Site and their Global Consequence. *Journal of Applied Meteorology and Climatology*.

## **Lolli, Simone**

*Journal Article, Academic Journal (Published)*

Lolli, S., Lewis, J. R., Welton, E. J., Campbell, J. R., Gu, Y. (2016). Understanding Seasonal Variability in thin Cirrus Clouds from Continuous MPLNET Observations at GSFC in 2012. *EPJ Web of Conferences*, 119 (2016) 11004, 119. [dx.doi.org/10.1051/epjconf/201611911004](https://dx.doi.org/10.1051/epjconf/201611911004)

*Journal Article, Academic Journal (Accepted)*

Campbell, J. R., Lolli, S., Lewis, J. R., Gu, Y., Welton, E. J. (2016). Daytime Cirrus Cloud Radiative Forcing Properties at a Midlatitude Site and their Global Consequence. *Journal of Applied Meteorology and Climatology*.

### **Olson, William S.**

*Monograph (Accepted)*

Tao, W.-K., Takayabu, Y. N., Lang, S., Olson, W. S., Shige, S., Hou, A., Jiang, X., Lau, W., Krishnamurti, T., Waliser, D., Zhang, C., Johnson, R., Houze, R., Cielsielski, P., Grecu, M., Hagos, S., Kakar, R., Nakamura, N., Braun, S., Oki, R., Bhardwaj, A. (2016). TRMM latent heating retrieval and comparison with field campaigns and large-scale analyses. *AMS Meteorological Monographs - Multi-scale Convection-Coupled Systems in the Tropics*. Boston, MA: American Meteorological Society.

### **St. Clair, Jason M.**

*Journal Article, Academic Journal (Published)*

Barth, M. C., Bela, M. M., Fried, A., Wennberg, P. O., Crouse, J. D., St. Clair, J. M., Blake, N. J., Blake, D. R., Homeyer, C. R., Brune, W. H., Zhang, L., Mao, J., Ren, X., Ryerson, T. B., Pollack, I. B., Peischl, J., Cohen, R. C., Nault, B. A., Huey, L. G., Liu, X., Cantrell, C. A. (2016). Convective transport and scavenging of peroxides by thunderstorms observed over the central U.S. during DC3. *Journal of Geophysical Research: Atmospheres*, 121(8), 4272–4295. <http://dx.doi.org/10.1002/2015JD024570>

*Journal Article, Academic Journal (Published)*

Fisher, J. A., Jacob, D. J., Travis, K. R., Kim, P. S., Marais, E. A., Chan Miller, C., Yu, K., Zhu, L., Yantosca, R. M., Sulprizio, M. P., Mao, J., Wennberg, P. O., Crouse, J. D., Teng, A. P., Nguyen, T. B., St. Clair, J. M., Cohen, R. C., Romer, P., Nault, B. A., Wooldridge, P. J., Jimenez, J. L., Campuzano-Jost, P., Day, D. A., Shepson, P. B., Xiong, F., Blake, D. R., Goldstein, A. H., Misztal, P. K., Hanisco, T. F., Wolfe, G. M., Ryerson, T. B., Wisthaler, A., Mikoviny, T. (2016). Organic nitrate chemistry and its implications for nitrogen budgets in an isoprene- and monoterpene-rich atmosphere: constraints from aircraft (SEAC4RS) and ground-based (SOAS) observations in the Southeast US. *Atmospheric Chemistry and Physics*, 16, 5969-5991. <http://www.atmos-chem-phys-discuss.net/acp-2016-52/>

*Journal Article, Academic Journal (Published)*

Bela, M. M., Barth, M. C., Toon, O. B., Fried, A., Homeyer, C. R., Morrison, H., Cummings, K. A., Li, Y., Pickering, K. E., Allen, D. J., Yang, Q., Wennberg, P. O., Crouse, J. D., St. Clair, J. M., Teng, A. P., O'Sullivan, D., Huey, L. G., Chen, D., Liu, X., Blake, D. R., Blake, N. J., Apel, E. C., Hornbrook, R. S., Flocke, F., Campos, T., Diskin, G. (2016). Wet scavenging of soluble gases in DC3 deep convective storms using WRF-Chem simulations and aircraft observations. *Journal of Geophysical Research: Atmospheres*, 121(8), 4233–4257. <http://dx.doi.org/10.1002/2015JD024623>

### **Wang, Yujie**

*Journal Article, Academic Journal (Accepted)*

Arvani, B., Pierce, R. B., Lyapustin, A. I., Wang, Y., Teggi, S., Ghermandi, G. (in press). High spatial resolution aerosol retrievals used for daily particulate matter prediction over Po valley, northern Italy. *Atmospheric Environment*, DOI:10.1016/j.atmosenv.2016.06.037.

*Journal Article, Academic Journal (Published)*

Bi, J., Myneni, R., Lyapustin, A., Wang, Y., Park, T., Chen, C., Yan, K., Knyazikhin, Y. (2016). Amazon Forests' Response to Droughts: A Perspective from the MAIAC Product. *Remote Sensing*, 8(5), doi:10.3390/rs8040356.

## Werner, Frank

*Journal Article, Academic Journal (Published)*

Frank, W., Zhang, Z., Hyoun-Myoung, C. (2016). A framework based on 2-D Taylor expansion for quantifying the impacts of sub-pixel reflectance variance and covariance on cloud optical thickness and effective radius retrievals based on the bi-spectral method (vol. 121). *J. Geophys. Res. Atmos.*

## Wolfe, Glenn M.

*Journal Article, Academic Journal (Published)*

Marais, E. A., Jacob, D. J., Jimenez, J. L., Campuzano-Jost, P., Day, D. A., Hu, W., Krechmer, J., Zhu, L., Kim, P. S., Miller, C. C., Fisher, J. A., Travis, K., Yu, K., Hanisco, T. F., Wolfe, G. M., Arkinson, H. L., Pye, H. O. T., Froyd, K. D., Liao, J., McNeill, V. F. (2016). Aqueous-phase mechanism for secondary organic aerosol formation from isoprene: application to the Southeast United States and co-benefit of SO<sub>2</sub> emission controls. *Atmospheric Chemistry and Physics*, 16, 1603-1618.

*Journal Article, Academic Journal (Published)*

Wolfe, G. M., Kaiser, J., Hanisco, T. F., Keutsch, F. N., de Gouw, J. A., Gilman, J. B., Graus, M., Hatch, C. D., Holloway, J., Horowitz, L. W., Lee, B. H., Lerner, B. M., Lopez-Hilifiker, F., Mao, J., Marvin, M. R., Peischl, J., Pollack, I. B., Roberts, J. M., Ryerson, T. B., Thornton, J. A., Veres, P. R., Warneke, C. (2016). Formaldehyde production from isoprene oxidation across NO<sub>x</sub> regimes. *Atmospheric Chemistry and Physics*, 16, 2597-2610.

*Journal Article, Academic Journal (Published)*

Fisher, J. A., Jacob, D. J., Travis, K. R., Kim, P. S., Marais, E. A., Chan Miller, C., Yu, K., Zhu, L., Yantosca, R. M., Sulprizio, M. P., Mao, J., Wennberg, P. O., Crouse, J. D., Teng, A. P., Nguyen, T. B., St. Clair, J. M., Cohen, R. C., Romer, P., Nault, B. A., Wooldridge, P. J., Jimenez, J. L., Campuzano-Jost, P., Day, D. A., Shepson, P. B., Xiong, F., Blake, D. R., Goldstein, A. H., Misztal, P. K., Hanisco, T. F., Wolfe, G. M., Ryerson, T. B., Wisthaler, A., Mikoviny, T. (2016). Organic nitrate chemistry and its implications for nitrogen budgets in an isoprene- and monoterpene-rich atmosphere: constraints from aircraft (SEAC4RS) and ground-based (SOAS) observations in the Southeast US. *Atmospheric Chemistry and Physics*, 16, 5969-5991.  
<http://www.atmos-chem-phys-discuss.net/acp-2016-52/>

## UPCOMING EVENTS: *A "HEADS-UP" SECTION FOR UPCOMING EVENTS.*

**Jason St. Clair** will be conducting test flights for the CAFE instrument aboard the NASA ER-2 high altitude aircraft and operating the ISAF instrument for part of the ATom campaign aboard the NASA DC-8.

**Valerie Casasanto** will work with team members to implement outreach events at the Goddard Science Jamboree (July 27, 2016), an ICESat-2 Social Media and Friends and Family Day at NASA Goddard (August/September, 2016), and the Arctic Ministerial Meeting in Washington, DC (September, 2016).

**Jasper Lewis** will present a paper on the MPLNET cloud detection algorithm at the IX Workshop on Lidar Measurements in Latin America in São Paulo, Brazil.

**Ana Prados** and **Brock Blevins** will manage and coordinate the following ARSET activities: 1) A Webinar entitled 'Introduction to Remote Sensing for Coastal and Ocean Applications' on July 6-27, 2) a Webinar entitled 'Introduction to Satellite Remote Sensing for Air Quality Applications on July 6 – August 3, 3) A training entitled 'NASA Earth Observations, Data and tools for Air Quality Analysis' at Pusan National University, Korea on August 28-29, and 4) A training entitled 'Practical Use of Satellite Observations for Visibility and Air Quality Analysis' during the Atmospheric Optics: Aerosols, Visibility, and Radiative Balance conference on September 27-30, 2016, in Jackson Hole, WY.

**Amita Mehta**, for the NASA Applied Remote Sensing Training (ARSET) program, will conduct a multi-day training (July 13-20) for a UNESCO Center in Brazil, a webinar series on NASA Evapotranspiration and Soil Moisture data applications in September 2016, and a GPM Applications webinar 15<sup>th</sup> September 2016.

## PERSONNEL CHANGES:

### *PROMOTIONS:*

Jasper Lewis was promoted to Assistant Research Scientist, effective May 1, 2016.

### *HIRES:*

Davide Lucadamo	5/23/2016	BUSINESS SPECIALIST
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### *DEPARTURES:*

Danita Eichenlaub	6/30/2016	Retired
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Allen Chu	6/8/2016	Leave of absence (until 6/7/2107)
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