



# LUMEN DE LUMINE

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## University of Arizona Scientists visit Manila Observatory

**INSTRUMENT SET-UP**— Dr. Armin Sorooshian and three of his PhD students, Alexis McDonald, Connor Stahl, and Rachel Braun, from the University of Arizona visited the Manila Observatory last 17 July-01 August ahead of the implementation of the Cloud, Aerosols and Monsoon Processes Philippines Experiment (CAMP<sup>2</sup>Ex) in 2019.

Dr. Sorooshian's visit marked the beginning of CHECSM (CAMP<sup>2</sup>Ex Weather and Composition Monitoring), which is an intensive field campaign as a prelude to CAMP<sup>2</sup>Ex.

The team from the University of Arizona set-up a micro-orifice uniform deposit impactor (MOUDI) at the Annex Building of the Manila Observatory. MOUDI presents a 12-stage cascade impactor that can segregate ultra-fine, fine, and coarse particulate matter. The Observatory is classified as an urban-mix site which will be able to paint a picture of aerosol characteristics coming from different sources.

Data gathered in CHECSM will serve as a baseline measurement in an urban environment. MOUDI is set to measure air quality for one year in the Observatory Grounds.

Along with MOUDI, the Air Quality Dynamics-Instrumentation and Technology Development (AQD-ITD) laboratory is also expecting a number of instruments within the year from a number of agencies to monitor air quality.



TOP: MOUDI Set-up at the Manila Observatory's Annex Building  
BOTTOM: UoA Researchers explain MOUDI to AQD-ITD and MO Staff (Photos from AQD-ITD)

## Manila Observatory joins Resilience Marketplace Forum

The Resilience Collaboratory of the Manila Observatory (MO) joined the National Resilience Council (NRC) in the Resilience Marketplace for Innovation Forum hosted by the Department of Interior and Local Government-Local Government Authority last 23 August 2018 at the SMX Convention Center in Pasay City.

The Risk to Resilience Initiative through the Coastal Cities at Risk project of the Ateneo de Manila University, MO, and NRC was part of the exhibit for the event. The Resilient LGU Systems Scorecard, with inputs from the Observatory was also launched in this event.

The forum was attended by more than 1000 participants, including Disaster Risk Reduction Management Officers from around the country.

**TOP:** UN Special Representative of the Secretary General for Disaster Risk and Reduction, Ms. Mami Mizutori; SM Prime Holdings President, Mr. Hans T. Sy; UNISDR for Asia and the Pacific Deputy Director Mr. Animesh Kumar visits the ADMU-MO-NRC booth with Ms. Toni Yulo-Loyzaga and Dr. Emma Porio.  
**BOTTOM:** ADMU-MO-NRC Team at the Resilience Marketplace Forum (Photo from MRPOa)





## Lecture Series: Aerosol Physics and Chemistry

In maximizing their time in the Philippines, the University of Arizona (UofA) team delivered a 5-part lecture series on Aerosol Physics and Chemistry while they were working with AQD-ITD on MOUDI. The team was able to deliver lectures on the following topics:

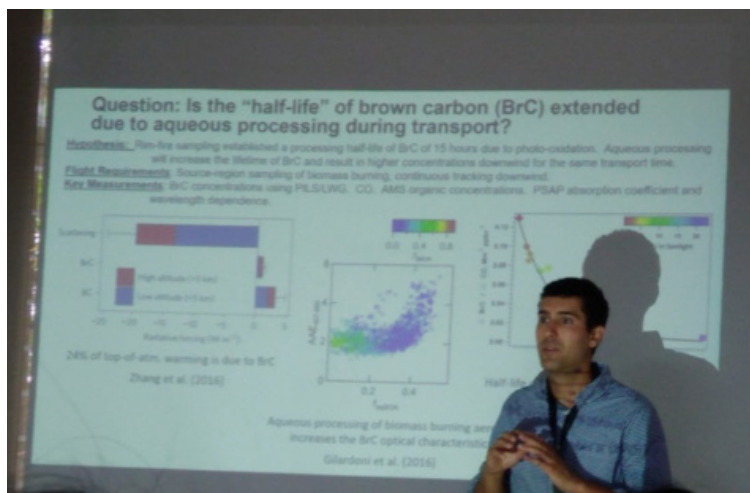
- Aerosols and Clouds: The Basics
- Size Composition of Aerosols
- Theory of Impaction and Implications for Health
- Aerosols and Water: Clouds and Haze
- CAMP2Ex Science and Instruments

The lecture series was opened to the MO Community. Students from the Ateneo de Manila University were also able to join the discussions.

Overall, the topics covered by the UofA team covered the importance of studying aerosols and clouds, which led to the understanding of its role in influencing important human and environmental factors like health and pollution. The discussions culminated with a discussion on CAMP<sup>2</sup>Ex which will be one of the major partnerships between UofA, MO, and the National Aeronautics and Space Administration (NASA).



Dr. Armin Sorooshian and team with Ateneo de Manila University President and Chairman of MO's Board of Trustees, Fr. Jose Ramon T. Villarín (Front-Center), and MO research staff.



Dr. Armin Sorooshian opens up the seminar series with a talk on the basics of aerosols and clouds. (Photo from AQD-ITD)



Rachel Braun talks about the size and composition of aerosols. (Photo from Alexis McDonald)

## Coastal Cities at Risk Holds First National Conference

The Coastal Cities at Risk: Investing in Disaster Risk and Resilience Project of the Ateneo de Manila University in partnership with International Development Research Centre, Manila Observatory, and the National Resilience Council held its first national conference at Areté, ADMU last 8 June 2018.

For the session on Work Theme 1: Characterization of Climate and Disaster Risk for Resilience, Dr. Gemma Narisma presented her work with Dr. Faye Cruz, Dr. Obiminda Cambaliza, and Dr. James Simpás on Characterizing Climate and Atmospheric Hazards. In Work Theme 2: Dr. Celine Vicente presented her work with Dr. Rosa Perez on Visualizing Risk and Applications.

The conference was attended by more than 80 participants from different cities and municipalities around the Philippines.



Photo from Coastal Cities at Risk



## Dr. Gemma Narisma Gives Talk on Space-Based information for Understanding Atmospheric Hazards in Disaster Risk

Manila Observatory Executive Director Gemma Narisma, PhD delivered a talk on Space-Based Information for Understanding Atmospheric Hazards in Disaster Risk on 20 July as part of the National Science and Technology Week (NSTW).

In her talk, Dr. Narisma emphasized on the role of space-based information in MO research, “[it] gives us a holistic perspective—completes the picture when a particular extreme event happens.” This strategy was used in making extreme weather reports for Typhoon Bopha (Pablo) in 2014 and the 2013 habagat rains.

The analysis of the potential damage caused by a typhoon or an extreme weather event largely depends on the use of space-based information. But besides the thinking along the lines of potential damages, space-based technology has become more of use to disaster risk reduction and building resilience. Dr. Narisma pointed out that this is a new way of thinking and institutions are now considering incorporating space technology in the post-2015 disaster risk reduction framework.



Dr. Gemma Narisma talking at the National Science and Technology Week (Photo from JBSimpas)

## Regional Climate Systems Laboratory in NSTW 2018

Through the Physics Department of the School of Science and Engineering of the Ateneo de Manila University (ADMU), the Regional Climate Systems (RCS) Laboratory of the Manila Observatory participated in the exhibit of NSTW.

Researchers Bryon Leaño, Jennifer Tibay, Shane Visaga, Erica Bañares, and Angela Magnaye represented RCS. Through this participation, RCS presented the work that they do in their laboratory, the CORDEX-SEA project with DOST-PCIEERD was a highlight in the exhibit. The team was also able to promote the MS Atmospheric Science program of ADMU.

RCS engaged the public by encouraging them to participate in a guessing game about the number of typhoons that passed through the Philippine Area of Responsibility and made land fall over a specific historical period.



RCS Research Assistants (L-R) Shane Visaga, Angela Magnaye, Bryon Leaño, and Erica Bañares with DOST Secretary Fortunato dela Peña (center) at the ADMU Booth in NSTW.

## Manila Observatory Renews Partnership with Chevron Philippines

The Manila Observatory and Chevron Philippines Inc. (CPI) renewed their partnership on the Metro Weather project with a ceremonial Memorandum of Agreement (MOA) signing last 10 July 2018.

The Metro Weather project started in 2012, with the objective of informing the public about weather conditions making them more conscious and resilient. This partnership will allow the Observatory to continue the maintenance of 18 Automated Weather Station units in select Caltex retail sites from 2018-2020.

The Metro Weather project continues to expand in Iloilo City and Iloilo province, Davao City and Davao Oriental and Cagayan de Oro City.



Representatives of Chevron and Manila Observatory (Dr. Gemma Narisma, Dr. James Simpás, Ms. Genie Lorenzo, and Dr. Celine Vicente) during the MOA signing. (Photo from Chevron Philippines Inc.)

## Drs. Gemma Narisma and Faye Cruz Join IPCC in China

Dr. Gemma Narisma and Dr. Faye Cruz attended the first lead authors meeting for the Working Group 1 contribution to the Sixth Assessment Report of the Intergovernmental Panel for Climate Change (IPCC) in Guangzhou, China last 25-29 June 2018.

Dr. Narisma worked on the chapter on Atlas, which will serve as a compendium of regional climate change observations and projections on multiple time-scales, while Dr. Cruz worked on Chapter 12 on climate change information for regional impact and for risk assessment.





## MO Formation



After a series of general assemblies, the Manila Observatory embarked on its strategic planning journey which will run until December 2018. As part of the process, focus group discussions and interviews of staff and partners, as well as former executive directors were conducted to serve as a basis for the planning.

## Manila Observatory features Fr. Faura in Mini Exhibit

On 6 August 2018, the mini exhibit on Fr. Federico Faura, S.J. was launched by Manila Observatory's Library and Archives. The exhibit showcases fragments of Fr. Faura's life and scientific contributions to Philippine science as the first Director of the Manila Observatory.

The exhibit showcases the original Faura Aneroid Barometer, an instrument used by the general public in 1886 for announcing the approach of a typhoon. Books and documents during Fr. Faura's time at the Observatory is also displayed.

The exhibit will end on 31 October 2018 in preparation for the next exhibit which will focus on Fr. Jose Algue, S.J., the second Director of Manila Observatory.



## Science Corner

The Manila Observatory recognizes the value of transdisciplinary science and research with the Coastal Cities at Risk: Investing in Disaster Resilience (CCaR2) project together with the Ateneo de Manila University.

CCaR1 was a true testament on how transdisciplinary initiatives can work, with active engagement not only between scientists from the Physical and social and economic and health sectors, but especially with the local government stakeholders.

As an institution of mostly physical scientists, we are aware of how being confined in our own disciplines and within our academic space can limit the impact and reach of our work and research.

The CCaR1 project and now this CCaR2 project are valuable venues for us to synergize with different disciplines to meet the needs of the stakeholders, through transforming information from the scientists and the academe into useable knowledge that can be concretely applied towards reducing risks and increasing resilience.

In particular, in risk and resilience research at the Observatory, we are beginning to explore within the context of our country—the complex interaction between climate change and air quality and consequently the potential impacts of these on health and the implications on socio-economic vulnerabilities, and disaster risk and resilience.

CCaR2 opens new horizons for research that is far from one dimensional.

And with this project, we are on the right path to confront these complex environmental problems and the Observatory is looking forward to this project because as we work on the complexities of the problems of climate change and disasters, we are doing science that speaks to the heart of our mission and that is, as Fr Dan McNamara would say, doing science that seeks the truth, science that helps people find the truth, science that helps bring people closer to God. science that seeks the truth, science that helps people find the truth, science that helps bring people closer to God.

(GTNarisma, Executive Director)

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Writers and Contributors

**YSABEL ANNE LEE, EDERLYN ANNE SANTOS, ANGELA MAGNAYE**

Photography

**YSABEL ANNE LEE, CYBIL ESCOBAR, JENNIFER TIBAY**

*Lumen de Lumine (Light from Light) re-echoes the ancient Apostolic Credo confessing aloud the belief in Christ. This also represents the physical sun that enables the Manila Observatory to find its way in this world of sense and delve into the knowledge of its mysteries, and so does the Divine Son of God that enables us to find our way in the spiritual world. Fr. dela Costa reiterated this in the Observatory's 100th anniversary; with the serene and imperturbable faith, "all the paths of knowledge, wherever they may wind...lead in the end to that Love that draws all men, all creation, to itself."*