

Weekly Report – September 25, 2026
Cooperative Institute for Satellite Earth System Studies (CISESS)
NOAA/NESDIS/STAR

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TRAVEL AND MEETING REPORTS

When Trees Get in the Way

On 18 September 2026, CISESS Scientist Guangyang Fang visited the Wallops Lightning Mapping Array (LMA) station at the University of Maryland's Uncrewed Aircraft Systems Research and Operations Center in California, MD to troubleshoot its cellular connection. The station's previous SIM card had expired, and a new one was needed. During the replacement, the new SIM card repeatedly popped out of the modem's loose SIM slot. Fang secured it in place with foam tape. In addition, trees around this station have grown substantially over the past year and now shaded the solar panels, reducing the battery voltage. As a result, this site may no longer be suitable for a solar-powered LMA station. A follow-up site visit is needed to relocate instrumentation to somewhere else farther from the trees. As a final task for this site visit, Fang tilted the solar panels upward to improve sunlight exposure.



Figure: The solar panels were tilted upwards to capture more sunlight. (Photo credit: Guangyang Fang)

(Guangyang Fang, CISESS, gfang@umd.edu; Funding: GEO-XO & Seed Grant)

TRAINING AND EDUCATION

CISESS Scientist Leads Weather Prediction Center Seminar

CISESS Scientist Christopher Smith, the GOES-R Satellite Liaison to the National Weather Service's (NWS) Weather Prediction Center (WPC) and Ocean and Tsunami Center (OTC), presented at the WPC Seminar Series on 22 September 2026. The presentation, titled "WPC Satellite Refresher", provided an overview of satellite tools available to WPC forecasters for rainfall and winter weather applications. Smith covered the products that are newly available to Advanced Weather Interactive Processing System (AWIPS), such as the Cooperative Institute for Research in the Atmosphere (CIRA) Layered Vapor Transport product, and existing AWIPS datasets including the NESDIS Advected Layered Precipitable Water product. Web-based

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satellite applications were also shared, from the CISESS NESDIS Snowfall Rate product to CIRA's Synthetic GeoXO Imagery. This training equips forecasters with satellite tools to increase lead times for convective initiation and precipitation impacts, while establishing a feedback channel to refine experimental products around operational needs. The WPC Seminar Series is held monthly and provides an outlet for showcasing products that can advance WPC's mission for forecasting weather and hazards across the continental U.S. and Alaska.

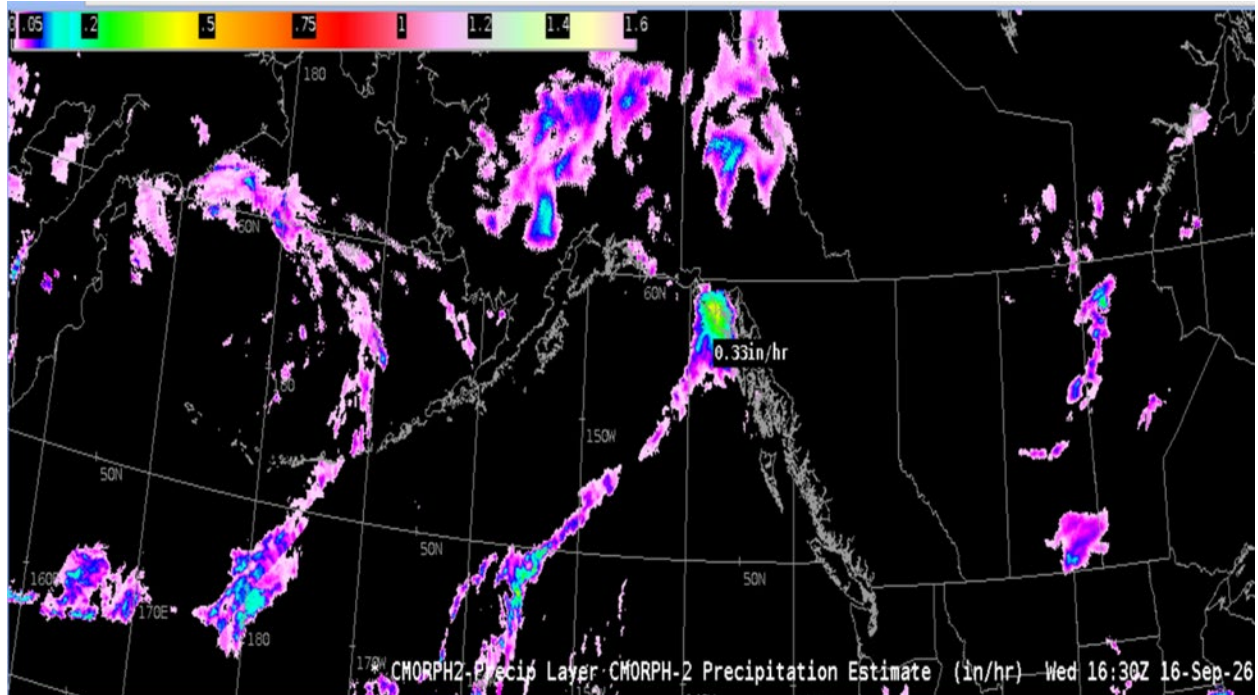


Figure: Satellite-derived Second-Generation Climate Prediction Center MORPHing (CMORPH-2) Precipitation Rate Estimation (in inches per hour) output at 1630 UTC 16 September 2026. This image was exported from AWIPS, and display files can be shared upon request.

(Christopher Smith, CISESS, csmith70@umd.edu, Funding: GOES-R PGRR)

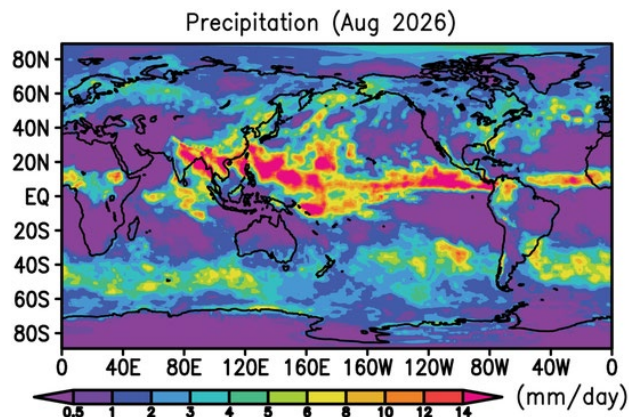
Global Precipitation Summary: August 2026

The El Niño rainfall anomaly pattern remains dominant in the tropics as El Niño intensifies; tropical cyclones are very active in both the western and eastern Pacific with little such activity in the Atlantic; heavy monsoon rain over northern India and Nepal set the stage for catastrophic glacier collapse, with flood and debris flow killing hundreds; and El Niño increased global total precipitation and the magnitude of land/ocean differences. These are the headlines in the latest monthly global precipitation summary produced by CISESS Scientist Guojun Gu and

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ESSIC Research Scientist Robert Adler, [published on the ESSIC website](#). The [in-depth analysis for August 2026](#) provides more details and points out interesting features in precipitation patterns from around the world.

(Guojun Gu, CISESS, ggu@umd.edu;
Funding: COSMIC2)



MEDIA INTERACTIONS AND REQUESTS

What Do Weather Alerts on Your Phone Really Mean



*Stormy sky over Tangier Sound
in the Chesapeake Bay. (Photo credit: Jay Fleming Photography)*

In the latest issue of Maryland Today, a digital news publication produced by the University of Maryland, CISESS Scientist Joseph Patton shares his weather expertise, explaining the difference between weather watches and warnings and how to deal with Maryland weather. His research focused on the Geostationary Lightning Mapper is also mentioned. Read the full interview [here](#).

(Joseph Patton, CISESS, jpatton4@umd.edu; Funding: GEO-XO, GOES-R AWG, GOES-R PGRR & IJJA)

PUBLICATIONS

Refining Howard University's Ozone Observations

Citation: Richards, Joshua A. D., Ryan M. Stauffer, Debra E. Kollonige, Anne M. Thompson, Belay Demoz, Ricardo K. Sakai, and Adrian Flores, 2026: Howard University Beltsville Campus ozonesonde record: data homogenization and uncertainties. *Earth Space Sci.*, **13**(7), e2026EA005120, <https://doi.org/10.1029/2026EA005120>.

Summary: Howard University operates a Global Climate Observing System (GCOS) Reference Upper-Air Network (GRUAN) station on its Beltsville Campus (HUBC) near Washington, D.C. This network is an international group of stations that collects high-quality climate data from the Earth's surface up into the stratosphere. Ozonesondes in tandem with radiosondes on the same payload are launched daily from HUBC, collecting ozone (O₃) and meteorological information as the instruments travel upwards through the atmosphere. One challenge is that a new ozonesonde is used for each launch, potentially introducing biases in the measurements

because of differences in sonde instrumentation, sensing solutions, operating procedures, and data-processing methods. There is thus a need to homogenize long-term records of O₃ to ensure their quality and consistency for trend analyses and model/satellite evaluation. CISESS Scientist (and Professor/Associate Director of the Goddard Earth Sciences Technology and Research II) Belay Demoz and colleagues describe their homogenization of the HUBC ozonesonde record from 2006 to 2022 in their paper published in the journal *Earth and Space Science*. Here, they followed Assessment of Standard Operating Procedures for Ozonesondes 2.0 procedures, which are standard operating guidelines and data-processing protocols issued by the World Meteorological Organization's Global Atmosphere Watch. Total column O₃ (TCO) was then compared with TCO retrievals from instruments aboard the Aura, MetOp, and Suomi-NPP satellites and from a Brewer spectrometer located at the nearby Goddard Space Flight Center. The authors report that overall, post-homogenization mean sonde TCO shows improved agreement and reduced spread compared to satellite and Brewer data. They are continuing to extend the homogenized record beyond 2006–2022 and plan to tackle an issue that cropped up, namely, what is behind the anomalously high O₃ measurements seen in the 2005 ozonesonde profiles.

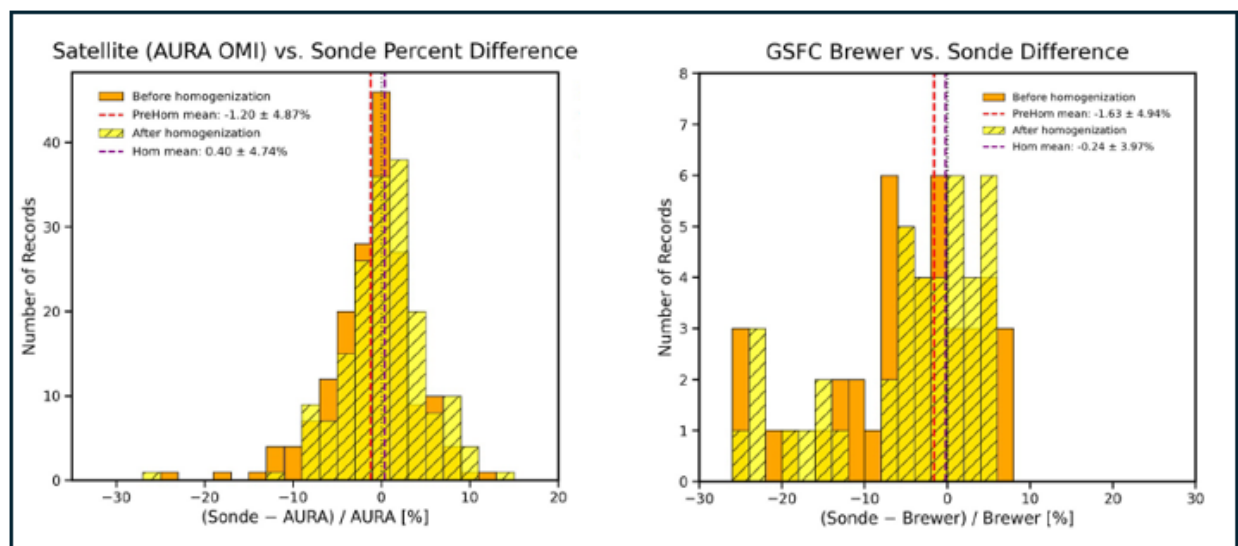


Figure: Histograms of the percentage difference in total column ozone between sondes and (left) Aura Ozone Monitoring Instrument measurements and (right) Goddard Space Flight Center Brewer measurements for original (orange bars) and reprocessed (yellow hashed bars) data. Mean values and standard deviation for before (after) homogenization are indicated with red (purple) dashed lines. Black dotted lines are the zero percent markers. In both comparisons, the magnitudes of the mean biases and variances were reduced after homogenization.

(Belay Demoz, CISESS, bdemoz@umbc.edu; Funding: LEO)

(Maureen Cribb, CISESS, mcribb@umd.edu, Funding: CISESS Task I)