Weekly Report – October 20, 2023 Cooperative Institute for Satellite Earth System Studies (CISESS)

NOAA/NESDIS/STAR

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TRAVEL AND MEETING REPORTS

Contributions to CEOS SIT Technical Workshop

The 2023 Committee on Earth Observation Satellites (CEOS) Strategic Implementation Team Technical Workshop will be held on 17-19 October, 2023. As the NOAA representative in the Precipitation Virtual Constellation (P-VC), H. Meng provided the NOAA participants some background information and talking points for a presentation to be given by a P-VC Co-Chair. In addition, H. Meng provided NOAA updates to the P-VC Co-Chair for his presentation. The input included updates on NOAA's new and future missions, LEO and GEO precipitation products, and relevant activities. *(POC: Huan Meng, SMCD/LVB, huan.meng@noaa.gov)* This item was submitted to the SMCD Report

MEDIA INTERACTIONS AND REQUESTS

Global Coral Reef Alliance website incorporates CRW Bleaching HotSpot Map

NOAA Coral Reef Watch's (CRW) <u>daily global 5km Coral Bleaching HotSpot maps</u> for the Caribbean were featured in the article, "<u>Largest, Hottest, Longest Caribbean Bleaching: Corals</u> <u>Dying From Extreme Heat</u>", penned by Tom Goreau. Jamaica was the first place in the world where bleaching was confirmed to be caused by high temperatures in 1990 and is now the epicenter of the largest, longest, most extreme Caribbean high temperature mass coral bleaching event yet. The map from the article is shown below.

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Figure: The NOAA Coral Bleaching HotSpot map showing current extreme sea surface temperature heat stroke event. The circles show some of the locations where bleaching is currently confirmed by local environmental groups. Corals in yellow areas will bleach in about a month and in orange areas they will die in around a month. (Jacqueline De La Cour, CISESS, <u>jacqueline.shapo@noaa.gov</u>, Funding: NOS) This item was submitted to the SOCD Report

PUBLICATIONS

COSMIC -2 Radio Occultation Data Improve Tropical Cyclone Forecasts

<u>Citation</u>: **Miller, William,** Yong Chen, Shu-Peng Ho, and **Xi Shao**, 2023: Evaluating the impacts of COSMIC-2 GNSS RO bending angle assimilation on Atlantic hurricane forecasts using the HWRF model. *Mon. Wea. Rev.*, **151**, 1821-1847, <u>https://doi.org/10.1175/MWR-D-22-0198.1</u>. <u>Summary</u>: More information about the lower-to-mid-troposphere water vapor distribution is useful in model forecasts on whether a tropical storm will intensify into a hurricane. The COSMIC-2 satellite provides denser spatial coverage of atmospheric water vapor and temperature over the tropics compared to other Global Navigation Satellite System (GNSS) radio occultation (RO) data. CISESS Scientists William Miller and Xi Shao along with their NOAA partners, tested assimilation of COSMIC-2 data on six 2020 tropical cyclone cases using the Hurricane Weather Research and Forecasting (HWRF) Model. The tests showed a modest ~10%

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forecast skill improvement, although on particular cases, the forecast was substantially better. These were cases where the COSMIC-2 data was able to correct atmospheric water vapor bias. (William Miller, CISESS, william.miller@noaa.gov, Funding: COSMIC-2)



Satellite Mapping and Detection of Fires Discussed in New AGU Monograph

<u>Citation</u>: Giglio, Louis, David P. Roy, Michael L. Humber, Evan Ellicott, Maria Zubkova, and Christopher O. Justice, 2023: Chapter 3: Mapping and Characterizing Fire, in Tatiana V. Loboda, Nancy H. F. French and Robin C. Puett (eds.), 2023: *Landscape Fire, Smoke, and Health: Linking Biomass Burning Emissions to Human Well-Being,* Wiley, 304 pp., pp. 37–51, <u>https://www.wiley.com/en-</u> cn/9781119757009; Link to Ch. 3 (Louis Giglio, CISESS & UMD GEOG, *Igiglio@umd.edu*, Funding: NOAA Roses)