

Shade Tree News

A publication from Shade Tree Meteorology, LLC

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Data Sources and Forensic Meteorology

The first imagery from NOAA's GOES-17 Advanced Baseline Imager (ABI) made its public debut May 20, 2018. GOES-17 launched on March 1, 2018 and is the second in a series of next generation geostationary satellites. Like GOES-16, its sister satellite operating as GOES East, GOES-17 is designed to provide advanced imagery and atmospheric measurements of Earth from 22,300 miles above the equator.

The ABI imagery is produced using two visible bands and one near-infrared "vegetation" band. When these bands are combined as a "GeoColor" image, they depict the Earth in vivid detail and colors intuitive to human vision. This "GeoColor" imagery provides valuable information for monitoring dust, haze, clouds, fog, winds and vegetation. This type of imagery can be particularly useful in forensic meteorology, especially in cases (such as motor vehicle accidents) where fog or cloud cover might be an issue. This generation of GOES satellites has increased resolution and a faster scanning speed, which will allow meteorologists to detect and analyze storms

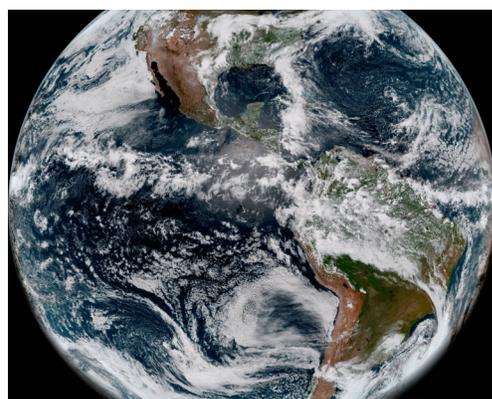


Fig. 1: GOES-17 took this stunning, full-disk snapshot of Earth's Western Hemisphere from its checkout position at 12:00 p.m. EDT on May 20, 2018, using the Advanced Baseline Imager (ABI) instrument. Credit: NOAA/NASA

much more quickly, which is especially important as they are developing and intensifying. The satellite is currently in its post-launch checkout and testing phase, so that its instruments and systems can be calibrated, validated and assessed for operational usage. Imagery released from GOES-17 during the post-launch testing phase should be considered preliminary and non-operational.

Source: <https://www.nesdis.noaa.gov/content/goes-17-releases-%E2%80%98first-light%E2%80%99-imagery-its-advanced-baseline-imager-abi>

News from NOAA: NWS issues first-ever Ashfall Advisory

Citizens near the Kilauea Summit received an unwelcome surprise early in the morning on May 17. A violent eruption at the Kilauea Summit in Hawaii sent an ash cloud to heights of 30,000 feet.

There are over 150 volcanoes in the United State—primarily in Alaska, but with many in Hawaii and throughout the West. Meteorologists with the National Weather Service (NWS) monitor the status of active volcanoes, track volcanic ash in the atmosphere during eruptions, and issue advisories and warnings for airborne ash and ashfall. A Special Weather Statement is issued if there is potential for trace amounts of accumulating ash. When there's a chance of significant ashfall, from over a trace to up to 1/4", NWS will then issue an Ashfall Advisory. Lastly, if greater than 1/4" ash accumulation is expected, the NWS will issue an Ashfall Warning.



Fig. 2: NOAA issues first-ever ashfall advisory for Hawaii after ash plumes rise from the Kilauea volcano May 15, 2018. Credit: US Geological Survey

As a result of the eruption May 17, the National Weather Service (NWS) in Honolulu issued the first-ever Ashfall Advisory. Airborne volcanic ash can cause major threats to aviation, health, business, and infrastructure. For tips on actions to take before, during, and after an event, visit: <https://www.weather.gov/safety/airquality-volcanic-ash>.

Source: <https://www.weather.gov/wrn/181605-kilauea-volcanic-activity>

Building a Weather-Ready Nation: Summer Safety Edition

NOAA's Weather Ready Nation initiative exists to help facilitate communication to the public about hazardous weather preparation. The Summer Safety campaign is currently running and focuses on weather hazards which are particular to summer in the United States. There are numerous resources available on the Weather Ready Nation website, including articles about air quality and keeping your pets cool (<https://www.weather.gov/wrn/summer-articles>).

Additionally, there are video presentations available which discuss how to stay



Fig. 3: NWS summer safety logo

safe in the event of different summer hazards, such as thunderstorms, flooding, and extreme heat (https://www.weather.gov/media/wrn/presentations/Summer_Safety_Presentation_2018.pdf).

As a Weather Ready Nation ambassador, we at Shade Tree Meteorology have committed to communicate National Weather

Service messages about forecasts and ongoing weather hazards, as well as educate our clients on appropriate weather preparedness practices. If you have any questions or are interested in having us stop by your office for a seminar on these topics, please feel free to send one of us an e-mail.



Shade Tree Meteorology, LLC is proud to serve as a Weather-Ready Nation Ambassador

Hazardous Weather Preparedness: Hurricane Safety

Hurricane season is officially upon us! It began June 1 and extends through November 30. NOAA's Climate Prediction Center is forecasting a 75-percent chance that the 2018 Atlantic hurricane season will be near- or above-normal.

Tropical storms and hurricanes can produce deadly flooding, as a result of both storm surge*

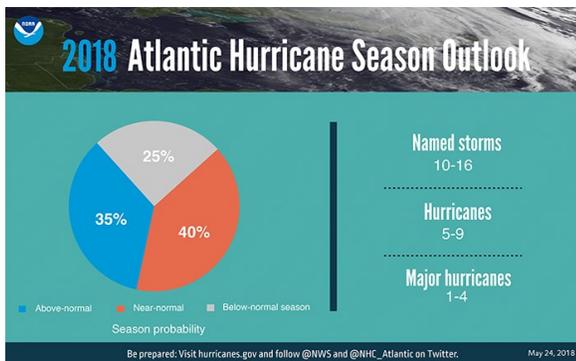


Fig. 4 Hurricane season probability and numbers of named storms

and heavy rain, destructive winds, tornadoes, high surf, and rip currents

- **Protect yourself** - have a family safety plan. Create an emergency kit with basic supplies such as water, food, a battery-powered radio and NOAA Weather Radio, a flashlight, a first aid kit, extra batteries, a whistle to signal for help, local maps, a manual can opener, a cell phone with charger and a backup battery. Remember to keep cash on hand also. For additional information on more supplies you might need, visit <https://www.ready.gov/build-a-kit>.
- **Protect your home** by boarding up windows with plywood or approved shutters, bringing in lawn furniture and loose items from outside to keep it from flying debris. Keep trees around your home trimmed to prevent damage from broken branches.
- **Stay tuned** to your local NWS and news source for updates, and pay attention to what local emer-

***Storm Surge: ocean water that is brought inland and floods areas along the coast. This abnormal rise in water is generated by a storm's winds and is historically the leading cause of hurricane-related deaths in the United States**

Source: <https://www.weather.gov/safety/hurricane-plan>

Did you know: Updates to Heat Advisory Thresholds

Summer has officially started, as of June 21, and temperatures are heating up! With this in mind, we wanted to bring your attention to a change in the heat advisory thresholds across upstate New York and northern New England. Studies and research conducted by the NYS DOH show that emergency department visits and deaths from heat increase significantly on days when the heat index reaches 95 degrees Fahrenheit or higher.

In response to these findings, four NWS offices (Albany, NY; Binghamton, NY; Buffalo, NY; Burlington, VT) lowered the old threshold of 100-104 degrees Fahrenheit for two or more consecutive hours to 95-99 degrees Fahrenheit occurring for two or more consecutive hours. These changes were made effective on or about June 1. The NWS offices in Gray, ME and Caribou ME also updated their Heat Advisory cri-



Fig. 5 Heat Safety from NWS

teria to 95-99 degrees Fahrenheit occurring for two or more consecutive hours from the previous two or more consecutive days.

This change is expected to alert people sooner to impending heat threats and if acted upon, reduce the number of heat-related illnesses and emergency department visits.



Shade Tree Meteorology, LLC

P.O. Box 117

Cropseyville, New York 12052

Phone: 518-831-9374

Fax: 518-374-7743

Email:

alicia.wasula@shadetreemeteorology.com

kelly.neugent@shadetreemeteorology.com

[HTTP://WWW.SHADETREEMETEOROLOGY.COM](http://www.shadetreemeteorology.com)

A Full-Service Forensic Meteorology Firm with a Team of Certified Consulting Meteorologists Specializing in Hazardous Weather Event Reconstruction

We have extensive experience issuing forecasts and radar-based severe weather warnings which translates into exceptional skill at reconstructing weather events as an expert weather witness. Our clear, non-technical (but scientifically sound) explanations of the what, where, when, and why in thunderstorm events, flooding events, and winter storm events have proven extremely useful to clients in pretrial and courtroom testimony.

Our associates' credentials include:

- **Over a decade of experience as a researcher and teacher in the field of meteorology**
- **Experience providing comprehensive, data-driven research to prepare customized reports based on stakeholder needs**
- **Four decades of experience as an operational weather observer,**

Shade Tree Meteorology, LLC— Specializing in weather event reconstruction

From the President's Desk

Shade Tree Meteorology, LLC has undergone exciting growth since our last newsletter. As such, we are thrilled to welcome on board our new associate, Ms. Kelly Neugent, MS. Kelly comes to us from the National Ice Center, where she provided post-event snow and ice analyses to customers. Her graduate research relating extreme weather to human health impacts has been used by the New Hampshire Department of Health and Human Services. Since joining us, she has performed case research and communicated results to our clients in the clear, easy-to-understand but scientifically sound manner that our clients have come to know and expect.

Did you know that, in addition to weather event reconstruction, we offer a variety meteorological services? Our portfolio of services can be found on our website at <http://www.shadetreemeteorology.com>. We look forward to serving you!

Note:

All articles contained in this newsletter are authored by our associates, and are the property of Shade Tree Meteorology, LLC, unless otherwise noted.

If you would like to disseminate all or a portion of this newsletter, we request that you contact us and we would be happy to work with you.

Do you have a question you would like answered in an upcoming issue of "Shade Tree News"? Please let us know!

Join us on Social Media!



Please take a moment to like and share our Facebook page, "Shade Tree Meteorology, LLC." As a Weather Ready Nation ambassador, we are dedicated to providing important weather-related safety information, as well as interesting news in the world of weather! If you have used our services in the past, we invite you to leave a review of your experience. Thank you!