

NEWSLETTER

**National Weather
Association**

NO. 11 – 4 APRIL 2011

Reflections on Deadly April 2011 Tornado Outbreaks

In the aftermath of this month's devastating tornado outbreaks, I would like to pause and offer a few thoughts from one "senior" (old) member of our profession. I began my work in the profession two days after graduation from high school in 1966 at the U.S. Weather Bureau Airport Station in Bristol, Tenn. In the 45 years since, I have had the honor and satisfaction of working primarily in forecast operation positions with the National Weather Service (NWS) and the U.S. Navy. Early in my career, seemingly impossible challenges to providing effective warning services to the people of this country existed. For example, during the super tornado outbreak of April 3-4, 1974, communications were so faulty that NWS offices were not able to effectively communicate with downstream offices across state lines to let them know huge tornadoes were heading their way! Over the years I have been pleased to see and experience the advances in technology and understandings of the atmosphere which overcame the huge obstacles to providing good warning services to the country.

Today our ability to provide excellent, long lead time warnings is truly remarkable. The success we enjoy results from both public and private forecasting service efforts plus the indispensable service provided by the media broadcasters. Dangerous weather events are no longer surprises!

However, hundreds of people died during April's outbreaks. What as a profession and as a society are we to do? It really doesn't matter how much lead time one has if they are in the path of a



Photo courtesy of Dusty Compton, The Tuscaloosa News/AP

wide EF-4 or EF-5 tornado and don't have a secure sheltering place nearby. This is the challenge for the new generations of meteorologists. This challenge goes far beyond just the detection and warning of the hazardous events. How do we as a profession work with others in society to protect even more of our citizens from the deadly weather events which will continue to strike this country?

In closing, I would like to tip my hat and heartily congratulate the many National Weather Association members who provided lifesaving warning services during the April outbreaks. Some of you were directly threatened by the tornadoes and had the thoughts of your families at home while you were at work. Although hundreds lost their lives, I am convinced that thousands of people are alive today due to the warning services provided by our profession. Great work all!

Steve Harned
NWA Executive Director

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AWIPS II and GOES-R: When Updated Information Processing Systems and New Satellites Meet

Jordan Gerth, NWA Council Student Ex-Officio
Cooperative Institute for Meteorological Satellite Studies (CIMSS)
University of Wisconsin-Madison

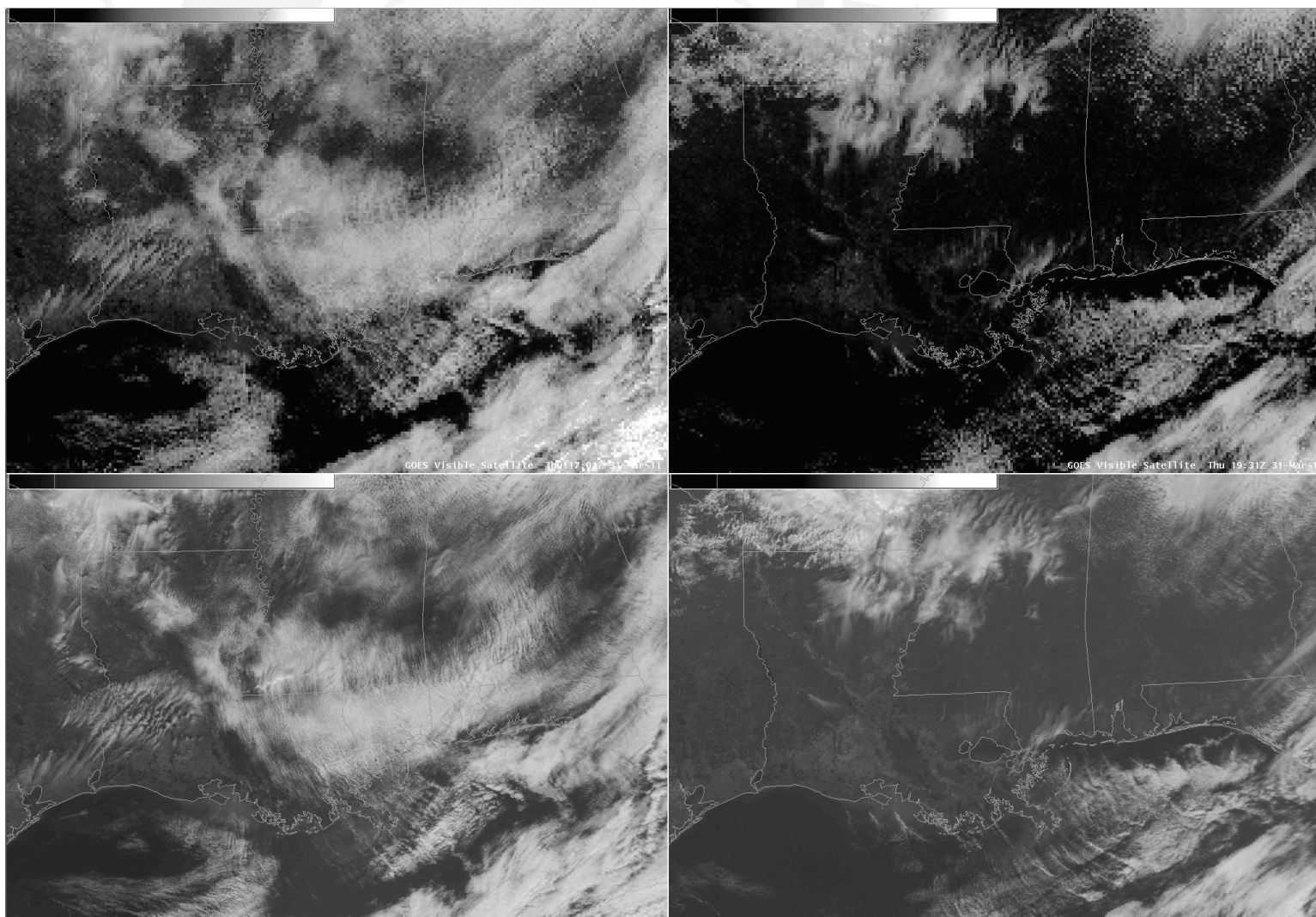
Scheduled for launch in 2015 and expected for operational use as GOES-West in 2017, Geostationary Operational Environmental Satellite R-Series (GOES-R) will represent the first significant upgrade in capabilities to the United States geostationary satellite series since 1994. GOES-S (East) will launch in 2017 for operational use in 2020.

The GOES-R/S Advanced Baseline Imager (ABI) will provide five times faster coverage while scanning, four times improved spatial resolution and three times more spectral channels than currently on GOES-13/14/15 (N/O/P). An optical sensor on the Geostationary Lightning Mapper (GLM) will provide continuous lightning flash rates.

The GOES-R Proving Ground is designed to showcase future capabilities and identify possible capability gaps in new algorithms to prepare the end user for the upcoming science and technology. It is a collective effort between many NOAA and NOAA-supported agencies and universities, and connects research and operations to assure widespread day-one readiness through:

- Applying current earth observing systems and numerical weather prediction models to demonstrate GOES-R capabilities today,
- Transitioning new algorithms and techniques to the field early to assure forecaster familiarity with GOES-R products, and

See AWIPS, page 3



AWIPS II will not regionalize high-resolution GOES imagery like AWIPS. The top two GOES-13 visible satellite images (17:03 (left) and 19:31 UTC (right) March 31, 2011) from the current AWIPS are degraded. The lower two images from the same times and location show the increased detail expected from AWIPS II in the GOES-R era. The lower-left image is from the MODerate resolution Imaging Spectroradiometer (MODIS) instrument and the lower-right image is from the Advanced Very High Resolution Radiometer (AVHRR) instrument. The lower images are at a resolution of one kilometer, approximately the same as the primary visible channel (0.6 microns) on GOES-R over the continental United States.

Welcome New NWA Corporate Members

Davis Instruments Corporation (April 2010)
www.davisnet.com

Weather Decision Technologies (April 2010)
www.wdtinc.com

Meridian Environmental Technology (April 2010)
www.meridian-enviro.com

Gauche Software, LLC (July 2010)
www.gauchosoft.com

Diversified Management Solutions Inc. (Jan 2011)

IntelliWeather (Jan 2011)
www.intelliweather.com

Allison House (March 2011)
www.allisonhouse.com

Reminder: **June 1**
Abstracts for 36th NWA Annual
Meeting due by June 1!

Meeting in Birmingham, Alabama
October 15 – 20, 2011

www.nwas.org/2011abstracts.html

AWIPS, from page 2

- Making operational meteorologists part of the discussion when it comes to designing and implementing effective GOES-R decision support products and visualization tools.

The additional capabilities of the ABI mentioned earlier will produce approximately 60 times (5x4x3,) more data than the current GOES Imager. If data are delivered at full bit depth (12 to 14 bits), approximately 50% more bandwidth will be required. Delivering GOES data in 2020 using a similar methodology as today may require up to 90 times more bandwidth than currently available.

Prior to the launch of GOES-R, the processing and visualization software employed at NWS field offices will be upgraded. The Advanced Weather Interactive Processing System (AWIPS) II brings a new, integrated mapping interface that allows much more flexibility to meteorological analysis and data interrogation over large areas. Gone are the resolution restrictions to scales and the expectations that certain data are only useful on certain scales. AWIPS II represents an end-to-end, design-level overhaul of the legacy AWIPS to respond to changes in technology and data requirements over the previous decade.

Thus, the questions to answer include:

- *Are the visualization tools in place to allow for effective interrogation of the data?*
- *How can blended products be devised to deliver more information to the forecaster without requiring the review of multiple images (from different bands, satellites, times, etc.)?*
- *Is all satellite imagery needed by all AWIPS sites all the time?*
- *Is it time to rethink the delivery paradigm and data format?*

NOAAPort is a satellite-based system used as the primary delivery mechanism for hydrometeorological data and model output to the end-users such as NWS field offices, and NOAA's academic and private industry partners. In 2011, the delivery bandwidth will increase from 10 Mbps to 30 Mbps as part of upgrading the signal demodulators from DVB-S to DVB-S2. NOAAPort will remain the primary delivery mechanism through at least 2013.

"Push-pull" and "on-request" technology has been investigated as a way to deliver weather data to remote locations outside NWS field offices, such as for use by meteorologists in supporting forest firefighting operations, and could be expanded to alleviate bandwidth over NOAAPort for regional data and products.

AWIPS II will play a significant role in promoting the capabilities of GOES-R and new polar-orbiting satellites. The expanded distribution and development group of meteorologists and computer scientists in government and private agencies will lead to an implementation of additional features that maximize the utility of satellite imagery and products in concert with other in-situ observations and model output. It will also allow for the efficient transfer of new science and technology into NWS operations.

In the future, AWIPS will not be confined to NWS offices, but extended to universities and become an integral part of the increasing research-to-operations activities. Now is the time to start investigating data overload and developing methodology to optimize the use of data, imagery, products and tools that are situation and scenario relevant, leading the decision support thought process.

I think it's important to ensure every NWA member has an opportunity to see some of the outstanding work undertaken and being presented by their NWA colleagues. Therefore, this article has been requested as part of a series of professional development articles highlighting important work presented orally or via poster at the 35th NWA Annual Meeting. I hope this piece challenges you to continually find ways to enhance what many of you are already doing—providing outstanding operational weather support to your customers!

Kenneth Carey
Chair, NWA Professional Development Committee



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NWA Climate Change Statement / Talking Points

Key Points:

1. The NWA mission is: *Connecting operational meteorologists in pursuit of excellence in weather forecasting, communication and service.*
2. Operational meteorology focuses on weather occurring on time scales of minutes to months.
3. Any given weather event, or series of events, should not be construed as evidence of climate change.
4. The NWA encourages its members and the public to learn more about meteorology and climate via the NWA web site, NWA publications, meetings, and via other scientific professional organizations.

Full Statement:

The National Weather Association (NWA) mission is “*Connecting operational meteorologists in pursuit of excellence in weather forecasting, communication, and service.*” Operational meteorology focuses on the practice of forecasting weather on the scale of minutes to months for commercial and public interests, including the protection of life and property.

The NWA emphasizes that no single weather event or series of events should be construed as evidence of a climate trend. Daily weather is subject to extreme events due to its natural variability. It is only the occurrence of these events over decades that determines a climate trend.

The NWA provides opportunities for our members and the public to learn about the science of meteorology, weather and climate through the NWA web site www.nwas.org, publications, and meetings. We encourage NWA members to learn about climate change and meteorological phenomena through professional development sponsored by our association and other organizations.

This statement was approved by the NWA Council on March 24, 2011.

Connecting operational meteorologists in pursuit of excellence in weather forecasting, communication and service.

Volunteer for a NWA Committee! Contact the Current Committee Chair

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36th NWA Annual Meeting
Oct. 15-20, 2011- Birmingham, Alabama
Get Ready! Get Set! Start Planning for a GREAT Meeting!

*The End Game -
From Research and
Technology to Best Forecast
and Response*

Where: *Wynfrey Hotel*, in Hoover, 10 miles south of downtown Birmingham, Ala.

Our Theme: *The End Game - From Research and Technology to Best Forecast and Response.* Being a champion is not easy, in sports or in life. It takes not only a mastery of our chosen field, but also a passion, intensity, energy, focus and commitment that helps us to achieve our very best. It is easy to lose that passion in the day to day routine of our jobs. Weather is unique in that nearly every person can tell you why they got into it. The goal of the 2011 NWA Annual Meeting in Birmingham will be to help us find that original spark and connect to that passion in a fun and spirited environment of learning and networking.

Professional Development Opportunities: The 2011 Annual Meeting will include the Annual Broadcasters' Workshop and DVD swap, and the Fourth Annual Students' Session at the hotel (both on Sunday, Oct. 16). Student presentations will be reviewed by the NWA Weather Analysis and Forecasting Committee members, and monetary awards will be presented to the best presentations and posters in undergraduate and graduate student categories. The general session will be October 17-20, with the annual awards luncheon on Wednesday, Oct. 19.

Abstract Submission: The deadline for submissions of abstracts is June 1, 2011. Abstracts should be sent via the online form on the NWA Web site at: www.nwas.org/2011abstracts.html. Abstracts will be published in the Meeting Agenda as submitted, so please make sure that they have been carefully reviewed and edited before submission. If you are unable to submit your abstract via the online form, please contact the NWA office at (919) 845-1546 or email: exdir@nwas.org. Presenters will be notified regarding the disposition of their abstracts by July 15, 2011.

Annual Meeting Hotel Information: Wynfrey Hotel, 1000 Riverchase Galleria, Birmingham, AL 35244
Telephone: 1-205-987-1600 Website: <http://www.wynfrey.com>

NWA negotiated room rates are as follows:

Standard Guestroom: \$88.00 (Plus \$10 for each additional person up to a total of 4 per room)
Concierge Level Guestroom: \$128.00 (Plus \$10 for each additional person up to a total of 4 per room)
Rooms will be available at the negotiated rate until 9/21/2011 or until the block is full.

Reserve a room by calling 1-800-WYNFREY (1-800-996-3739) by Sept. 1 for the NWA Annual Meeting rate.

Online reservations: The group code for 36th Annual Meeting of the National Weather Association is **1B35Q3**. Go to the [Wynfrey website](http://www.wynfrey.com), click "Quick Reservations" on the left side, and enter your information and the group code to make a reservation in the block.

More Information on Birmingham, the Meeting and the Program Planning: Visit the [NWA2011 blog](http://www.nwa2011.org), maintained by the Birmingham Program Committee, for information on the event, the agenda, vendors, the hotel and the local area as well as breaking news. Follow the latest on Twitter [@NWAS2011BHM](https://twitter.com/NWAS2011BHM). We'll use the hashtag #NWAS2011 this year, so include that in your posts about the event. Use your Twitter accounts to send out information, and re-tweet liberally. A Facebook Event page will be available from the [NWA Facebook Page](https://www.facebook.com/NWAS2011BHM).

The Annual Meeting Program Committee Chair is Jim Stefkovich, Meteorologist in Charge, NOAA/NWSFO, 465 Weathervane Rd., Calera, AL 35040; (205) 664-3010, ext 222; annualmeeting@nwas.org.

Broadcaster Workshop Program Chair: Mike Goldberg, PO Box 2491, Glen Allen, VA 23058-2491; mike@mike-goldberg.com

For more information on exhibits, special accommodations, registration and overall meeting program, go online to www.nwas.org or contact the NWA office at (919) 845-1546 or by emailing: exdir@nwas.org.

Special Feature For The 36th NWA Annual Meeting: A joint meeting will be held with the 7th GOES Users' Conference! The GOES Users' Conference will be held in the Wynfrey Thursday Oct. 20 and Friday Oct. 21 with Thursday being a joint meeting of the two conferences. Thursday, we'll highlight the new operational capabilities to be provided by existing and future GOES satellites; we'll also solicit feedback from attendees regarding current and future needs by those using GOES information. NWA meeting attendees are urged to attend the Friday, Oct. 21 session of the GOES Users Conference. Registration information will be forthcoming.

President's Message: The Human Touch in Observations

On the evening of April 22, 2011, tornadoes moved through the St. Louis, Mo., area causing considerable damage (up to EF-4), but surprisingly and thankfully, no loss of life. The weather enterprise functioned particularly well that night, with over 30 minutes of tornado warning lead time, thanks in part to a great many volunteer spotter reports as well as copious media coverage of the impending severe weather.

Of particular interest are the official METAR observations created that night by professional observers, part of a dwindling breed in operational meteorology.

Indeed, one tornado moved directly across the Lambert-St. Louis International Airport (KSTL), causing EF-2 damage on the airport property. Yet observations continued and the reports flowed. Below is the remarkable sequence of surface METAR observations that was created and disseminated by the observer staff at KSTL (dates and times are in UTC).

- KSTL 230111Z 29022G34KT 240V310 3SM +FC
-TSRA FEW020 BKN050CB OVC090 22/19
RMK TORNADO B10 W MOV E AO2 PK WND
29034/0111 CONS LTGICCGCC ALQDS TS ALQDS
MOV E P0001
- KSTL 230112Z 29029G42KT 1SM
R30R/2800VP6000FT +FC -TSRA BKN020
OVC040CB 22/19 RMK TORNADO B10
W MOV E AO2 PK WND 29042/0112 CONS
LTGICCGCC ALQDS TS ALQDS MOV E P0001
- KSTL 230121Z 34011G45KT 6SM TSRA BR
FEW020 BKN045CB OVC100 19/17 A2967
RMK TORNADOE18 CONS LTGICCGCC N-SW TS
N-SW MOV E

It is the trained human observer who has the unique capacity over machines to recognize such phenomena as tornadoes, confirm their existence, and report on their direction, distance and movement. Nothing can roll back the tide of automation in modern observational meteorology, but the events of April 22, 2011, in the St. Louis area serve as a reminder of the high value of trained eyes on the ground during dangerous weather situations.

On behalf of the NWA, I would like to thank the entire weather enterprise – observers, spotters, forecasters and broadcasters – for their exemplary work during this weather event.

A summary of this event prepared by the NWS office in St. Louis is available at http://www.crh.noaa.gov/lx/?n=04_22_2011.

Patrick Market
NWA President

This message was prepared before a week-long severe weather outbreak that included the tragic tornado outbreak on April 27. On behalf of the NWA, I extend our sympathies to those affected by the storms. The entire weather enterprise worked many long hours in April, and we appreciate your outstanding service and dedication.

2011 NWA ANNUAL AWARD NOMINATIONS DUE JULY 1ST

NOMINATE ON-LINE!

Nominations are requested for the 2011 NWA Annual Awards - they are due by July 1. Awards will be presented during the Awards Banquet on Oct. 19 during the 36th NWA Annual Meeting in Birmingham, Ala. (See page 6 for Annual Meetings details.)

www.nwas.org/awards/

NWA Sponsored Annual Meetings/Conferences

Aug. 4-6: 15th Annual High Plains Conference

Sponsored by both the Wichita and High Plains Chapters of the American Meteorological Society (AMS)/NWA, it will be at the Wichita Marriott in Wichita, Kan.

www.wichita-amsnwa.org.

Oct. 15-20: 36th National Weather Association Annual Meeting

See page 6 and www.nwas.org for details.

Oct. 20-21: 7th GOES Users' Conference

This conference will be held in the Wynfrey Hotel in Birmingham, Ala., with the first day being a joint meeting with the 36th Annual NWA Meeting. Details will be available later this spring.

Feb. 27 – March 1, 2012: 2nd National Flood Workshop

Organized by Weather Research Center (private, non-profit education and research center) in Houston, Texas, it will bring together agencies, emergency managers, academia and professionals from across the nation to encourage dialogue on various aspects of flooding. Call the Weather Research Center at 713-539-3076, email wrc@wxresearch.org or visit www.nationalfloodworkshop.net for more info.

Other Meetings & Conferences

June 14: The Forum on Earth Observations V

At the Hyatt Regency on Capitol Hill, Washington, D.C., it will bring together public and private sector leaders to discuss the nation's growing demand for improved environmental information and strategies by which our civil, defense and commercial programs will meet the nation's priorities, which range from more accurate weather and climate models, to more robust, accessible and actionable information for emergency response, to a less vulnerable and more energy efficient military. www.forumone05.com.

June 18: 2nd Annual Raleigh StormFest

The North Carolina Museum of Natural Sciences will host this large public outdoor event in downtown Raleigh, N.C. Details will be available later this spring.

Nicole Grams Awarded the 2nd Cassens/Phillips Family Undergraduate Scholarship in Meteorology



Nicole Grams of Mentor, Ohio, and a senior at Ohio University has been awarded the 2nd NWA Cassens/Phillips Family Undergraduate Scholarship in Meteorology.

Nicole knew at an early age that she wanted to study meteorology, but she had a dilemma: what area of meteorology in which to specialize. Having grown up on the Ohio shores of Lake Erie, the answer came. She would focus on hurricane storm surge! As a recipient of a prestigious National Oceanic and Atmospheric Administration (NOAA) Hollings Scholarship, Nicole spent the summer of 2010 with the storm surge forecasting unit at the National Hurricane Center in Miami. She received high praise from the storm surge team leader who acknowledged not only her strong technical skills but her ability to identify a problem and then derive creative solutions independently.

Earlier in her college career Nicole was selected to participate in the National Weather Service's Student Career Experience Program at the NWS Office in Charleston, West Va. These appointments are reserved for only the top students and she was able to participate in creating an office intranet Website, forecast training, severe weather verification, and flood stage surveying.

Of course we must not forget that Nicole is a student. She excels both in and outside of the classroom. She has a 4.00 GPA in her major and a 3.59 overall GPA and is a leader who has been recognized by the faculty. Nicole has served as the chapter president of the AMS student chapter and is a mentor for

underclassmen. In addition to her successes in the classroom, she has been recognized as one who applies her learning to the real world. Her 2010 summer research was fueled by the application of GIS concepts learned in her coursework.

The NWA Cassens / Phillips Family Undergraduate Scholarship for Meteorology is supported by the Cassens and Phillips families led by the efforts of NWA member Ryan Phillips of Hollywood, Fla. The NWA Education Committee received applications from outstanding students from across the country for this scholarship award. Best Wishes to all individuals who applied! Congratulations again to Nicole Grams!

Dates **2** Remember

May 15

Deadline for receiving applications for AccuWeather and Rod Scofield Scholarships

June 19-25

Lightning Safety Awareness Week

Aug. 4-6

15th Annual High Plains Conference, Wichita, Kan.

Oct. 16-20

36th National Weather Association Annual Meeting, Birmingham, Ala.

Oct. 20-21

7th GOES Users' Conference, Birmingham, Ala.

See page 7 for additional opportunities and meetings.

NWA Newsletter (ISSN 0271-1044)

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Submit newsletter items directly to the NWA office or to nwanewsletter@nwas.org. Material received by the 25th will be considered for the next month's issue.

Members receive the Newsletter and *National Weather Digest* as part of their regular, student or corporate membership privileges. Printed Newsletter subscriptions are available for \$25 per year plus extra shipping costs outside U.S. Single copies are \$3. **Address, phone number, email and affiliation changes can now be made online: member.nwas.org.**

Connecting operational meteorologists in pursuit of excellence in weather forecasting, communication, and service.

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