



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

No. 13 – 7

Newsletter JULY

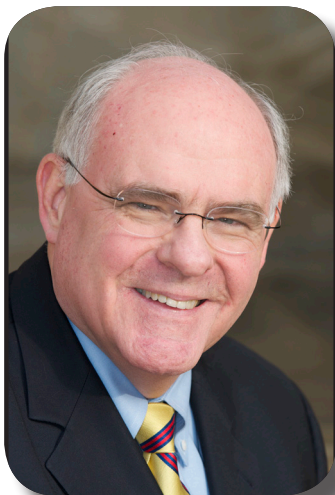
2013

Executive Director Steve Harned Announces His Retirement

Steve Harned, NWA Executive Director since 2007, has announced his retirement to be effective on March 1, 2014. When asked why he came to this decision, he said “I turned 65 last month and enrolled in Medicare so it is time to retire and turn operations of the NWA over to a younger person.”

Steve is a charter member of the NWA, served as president in 1992, and was the technical editor for the National Weather Digest in 2006. He is a 1970 graduate of Florida State University and joined the National Weather Service (then the U.S. Weather Bureau) after his sophomore year in college (working summers). After graduation, he joined the U.S. Navy and served three years as a weather officer at the Fleet Weather Central in Rota, Spain, which he refers to as a three year working vacation. Upon release from active duty, Steve returned to the NWS in Lubbock, Texas. Over the next 30 years, he had additional assignments to NWS facilities in Houston, Texas; Anchorage, Alaska; Raleigh, N.C., and Silver Spring, Md. He served as the Meteorologist-In-Charge for the Houston and Raleigh offices.

After retiring from the NWS in 2004, Steve earned a



Certified Consulting Meteorologist (CCM) designation from the American Meteorological Society (AMS) and opened a meteorological consulting firm, Atlantic States Weather, Inc., which specializes in providing forensic meteorological services for legal proceedings. Atlantic States Weather, Inc. clients have included the U.S. Department of Justice, the North Carolina Attorney General's Office, and over 40 law firms representing both plaintiffs and defendants in legal cases in 10 states, the U.K. and Greece.

Steve and his wife Jeanne have recently moved to a retirement golfing community near Sanford, N.C., which is about 50 miles southwest of Raleigh. He notes that his handicap playing the Pinehurst-like courses has soared by several strokes.

The NWA Executive Committee (comprised of the president, immediate past-president, president-elect, vice president, secretary, and treasurer) are serving as the search committee for identifying candidates to be considered by the full Council to fill the position. The committee anticipates submitting a recommendation for the new executive director to the Council for a vote in August.

11th Annual NWA Scholarship Golf Outing

Anyone interested in the NWA Golf Outing, please email Besty Kling (betsykling@wkyc.com) for more information and to sign up. The outing fee payment (\$85 per person) can be made via the online attendee preregistration forms, when you register onsite at the meeting, or to Betsy at

the outing. All are welcome to sign up for the Golf Outing even if they cannot attend the NWA Annual Meeting. Thanks to Baron Services, Inc. (<http://www.baronservices.com/>) for again sponsoring this annual event.

<http://www.nwas.org/meetings/nwa2013/golf.php>.

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Lightning Safety

Winnie Crawford

We are in the season when thunderstorms are more common, as is participation in outdoor activities. Too often, we hear of individuals getting struck by lightning while playing golf, boating, on a baseball field, or even just taking a walk. Most people struck by lightning actually survive, but suffer life-long debilitating injuries including severe depression, loss of short-term memory, an inability to multi-task, fatigue and personality change. With proper education and a healthy respect for nature, there are steps we can take to be safe when lightning threatens.

Situational Awareness

First, get the weather forecast for the day. Your local NWS website* is a good source, as are local television and radio stations. Next, keep watch for developing or approaching thunderstorms throughout the day, even on days when the forecast is for a low probability of storms. Tall or growing cumulus clouds can signal that thunderstorms are developing. Approaching dark clouds, sudden gusty winds, or strong wind shifts can indicate approaching thunderstorms.

Take a portable radio if you will be away from computers and televisions to get weather updates, preferably one that can access the National Oceanic and Atmospheric Administration (NOAA) weather channels and has weather alert capability. Frequently check the weather observations and forecasts. Don't just wait for the automated weather alarms since they won't be activated for routine thunderstorms that still produce potentially deadly lightning. Some services provide weather alerts to mobile devices. There are also radar apps for smartphones and tablets so you can see if storms have developed and are heading your way, but be mindful of the observation times as they could be delayed. At this point, start assessing your location and decide where to go if a thunderstorm approaches or forms nearby.

Seeking Safe Shelter

When should you seek safe shelter? If you can hear thunder, lightning is close enough to be a danger. Most lightning strikes occur within 10 miles of the storm center; it does not have to be raining or even cloudy at your location for lightning to strike nearby. Seek safe shelter immediately when you hear thunder. Remember the saying: "When Thunder Roars, Go Indoors!" Too often, organized outdoor activities such as soccer, baseball, and tennis are not stopped when thunder is heard. People get caught up

in their activity and choose to finish the game rather than do what is safe. If you or a family member is ever in this situation, leave the field immediately and get to a safe location. A life is worth more than finishing a game.



Find your local NWS office at www.nws.noaa.gov.

Sources for this article include:

*NWS Lightning Safety website
(www.lightningsafety.noaa.gov),*

*NASA Kennedy Space Center website
(www-pao.ksc.nasa.gov/kscpao/nasafact/lightnin.htm)*

for emergency calls) or electrical appliances, including computers, during a thunderstorm. Stay away from plumbing and wiring, and don't stand near a window to watch the lightning.

Helping a Lightning Strike Victim

If a person is struck by lightning, call 911 to get medical care immediately, and begin CPR if needed and if you are trained to do so. Cardiac and respiratory arrest are the causes of death, although lifelong debilitating injury can also occur. You can also use an automated external defibrillator if available. You are in no danger of being electrocuted by a lightning victim.

When It's Safe Again

Even when it's no longer raining or cloudy overhead, it's still unsafe outside if thunder is still rumbling. Use the 30-minute rule to determine when you can go out safely. If 30 minutes or more has elapsed since hearing the last thunder, it's likely safe again: "Half An Hour Since Thunder Roars, Now It's Safe To Go Outdoors."

Bottom Line

Lightning is a dangerous natural force and the third leading source of storm deaths after floods and tornadoes, but we can remain safe and healthy by taking the precautions outlined: schedule outdoor activities to avoid thunderstorms; know when and where to go for lightning safety; reduce the risk if you can't get

What is safe shelter?

No place outside is safe with thunderstorms in the area. The safest place is a large fully enclosed building with plumbing and wiring, such as a house. A rain shelter with open sides at a golf course, baseball dugouts, under a tree, and such are not safe places when lightning is occurring. A vehicle with a solid metal roof and sides with the windows closed is also a good shelter. A common myth is that the rubber tires on a vehicle offer protection. A rubber tire is no match for the amount of current generated by a lightning strike. It's the metal shell that protects you. Motorcycles, bicycles and convertibles offer no lightning protection. There are still dangers inside a building. Do not use corded phones (except

Summer Sizzling Hazards

John Gordon, NWA Vice President



Weather has dominated much of the national news and public conversation since the deadly tornadoes in Oklahoma in May. Since the two EF5 tornadoes in Moore and El Reno, Okla., temperatures hit 129°F in Death Valley, Calif., 19 firefighters were killed in Arizona from wild fires, lightning killed 10 people in the U.S., 19 children tragically died in vehicle hyperthermia deaths

nationwide, rip currents killed 8 in the Carolinas over the long Fourth of July holiday, and catastrophic flooding occurred in India. All of these tragic facts are a salient reminder for NWA members on the importance of weather preparedness.

Since 1998 there have been nearly 600 child vehicular heatstroke deaths, occurring in 47 states and affecting every social and economic stratum of society. To combat these striking numbers, consider promoting the nationwide child hyperthermia awareness slogan “Beat the Heat, Check the Back Seat.” Last year, 32 kids died unnecessarily, and this year we are already at 19. NWA member Jan Null has a great resource for heat at <http://ggweather.com/heat/>, while NWA member August Veron created the “Beat the Heat, Check the Back Seat” Facebook page at <http://www.facebook.com/pages/Beat-the-Heat-Check-the-Back-Seat/101894243204772>.

Each year, more deaths occur due to flooding than from any other severe weather related hazard. The Centers for Disease Control and Prevention report that over half of all flood-related drownings occur when a vehicle is driven into hazardous flood water. The main culprit is people underestimating the power of water, resulting in deaths inside vehicles as they are swept away. Shockingly, people often drive around barriers that warn of flooded roadways. Always avoid flooded areas, especially if the water is flowing fast. NWA member Hector Guerrero developed the preparedness slogan “Turn Around Don’t Drown” (TADD), available online at <http://tadd.weather.gov/>, on Facebook at <https://www.facebook.com/pages/Turn-Around-Dont-Drown/140016149356451>, and on YouTube at [Turn Around Don’t Drown](#).

With more people outdoors during summer combined with frequent thunderstorms in the warm, humid weather, lightning’s

50,000°F temperature is another formidable force to reckon with. When thunder is heard, immediately move to safe shelter, such as



a substantial building or an enclosed, metal-topped vehicle with windows up. Get off the water, ball field, and golf course (ask professional golfer Lee Trevino). Stay in a safe shelter at least 30 minutes after the last sound of thunder is heard. The catchy phrase “When Thunder Roars, Go Indoors” is a great slogan to promote lightning safety to friends and family (see article on previous page). People are usually amazed when they learn that there is enough energy in a typical stroke of lightning to light a 100-watt incandescent light bulb continuously for about three months or the equivalent compact fluorescent bulb for about a year.

If heat, floods, and lightning are not enough to be aware of, many will go to the beach this summer and may have to contend with dangerous rip currents. The strongest rip currents can attain speeds reaching 8 feet per second, which is faster than an Olympic swimmer can sprint. Thus, rip currents can sweep even the strongest swimmer out to sea. On average, more people die every year from rip currents than from shark attacks or lightning. According to the United States Lifesaving Association, 80 percent of surf beach rescues are attributed to rip currents, and more than 100 people die annually from drowning in rip currents. “Break the Grip of the Rip” is a great slogan to promote water safety to family and friends heading to the beach. There is some great information at <http://www.ripcurrents.noaa.gov/index.shtml>.

I encourage all NWA members to promote all of these weather hazard campaigns to protect life and property. Let’s all be safe – we want to see you at the 38th NWA Annual Meeting in Charleston, S.C.!

STRIKE from previous page

to a safe shelter with thunderstorms in the area; know first aid for a lightning strike; don’t go out too soon after a storm has passed. Finally, remember the three main slogans for lightning safety:

- No Place Outside is Safe When Thunderstorms are in the Area;
- When Thunder Roars, Go Indoors; and
- Half An Hour Since Thunder Roars, Now It’s Safe To Go Outdoors.

**Lightning Safety Week was June 23-29 this year.
Go to the NWS Lightning Safety website to learn more
about this phenomenon and what you can do to educate
others as well as keep yourself safe.**

Speed Mentoring Event at Annual Meeting in Charleston

Lauren Visin, Chad Gravelle, Frank Brody
Membership and Marketing Committee

Attention students!

A Speed Mentoring program will be offered again for students attending the 2013 NWA Annual Meeting in Charleston, S.C. The event will occur on Sunday, October 13, during the Student Session. Speed mentoring is designed to engage student NWA members by meeting with several mentors from the meteorological profession in a short time span. Ideally, these connections will continue long after the Annual Meeting.



Students will spend time with several professional meteorologists during the Speed Mentoring event.

During the 90-minute program, groups of students will rotate through several groups of mentors. Students will have the opportunity to ask questions and receive advice about job searching and building a successful career. Each student will have access to weather professionals representing a wide spectrum of careers, including government (e.g. NOAA and NWS), broadcast media, military, consulting, academia, private sector, and emergency management. Speed Mentoring will be valuable to students still exploring career aspects of meteorology, and is an excellent way to kick-start professional networking.

The Student Session fee covers participation in this event. However, space is limited. You may preregister for Speed Mentoring while registering for the Student Session at <http://www.nwa-registration.org/register.php>. Click the "Yes" option for the Speed Mentoring Program to preregister. If slots are still available, it will be possible to register when you arrive in Charleston on a first-come, first-served basis.

Mentors will be selected and contacted in advance by the NWA Speed Mentoring Tiger Team during August and September 2013.

For more information and updates, please RSVP to the Speed Mentoring Facebook Event at <https://www.facebook.com/events/686977197995275/>.

Newsletter Submissions

We welcome Newsletter article submissions from members. Send articles to nwanewsletter@nwas.org by the 25th of the month for publication in the following month's edition at the earliest. Information about the Newsletter and a link to author guidelines can be found at

<http://www.nwas.org/newsletters/>.



Please join us for the

11th Annual

NWA

Scholarship Golf Outing

Saturday, October 12
Noon BBQ Lunch
1PM Shotgun start

Legend Oaks Golf Club
Summerville, SC

\$85 per player
Includes: BBQ lunch, greens fees,
cart & donation to scholarship fund

- Reserve your individual or team spot -
email: betsykling@wkyc.com

Presented by:

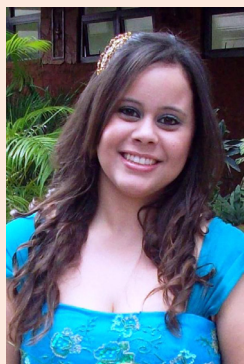
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2013 Scholarship Winners

David Sankey Minority Scholarship in Meteorology

Janice Marie Maldonado-Jaime of Humacao, Puerto Rico, is the winner of the 2013 NWA David Sankey Minority Scholarship in Meteorology. She is a graduate student at Mississippi State University.



Janice is recognized by her professors as a highly motivated and driven individual. She completed three student summer internships at the NWS offices in Memphis, Tenn., Slidell, La., and San Juan, Puerto Rico. The MICs at these offices said she is extremely personable and easy to work with. After the completion of her master's degree next year, Janice's goal is to become a successful meteorologist with the NWS helping those communities and major cities susceptible to devastating floods.

Janice has received the NWS Director's Award for decision and support services for NWS San Juan and the National Science and Math scholarships. She has participated in several research programs and published work from one of those programs in the Atmospheric Science and Meteorology Symposium of the University of Puerto Rico at Mayagüez, NWA 35th Annual Meeting, and the AMS 90th Annual Meeting.

Ken Reeves Memorial AccuWeather Scholarship in Meteorology

Allison Young of Berwyn, Ill., is the winner of the 2013 NWA Ken Reeves Memorial AccuWeather Scholarship in Meteorology. Allison is the first recipient of this scholarship after it was changed from the AccuWeather Undergraduate Scholarship and renamed and dedicated to the memory of Kenneth W. Reeves (1961-2012), longstanding and supportive member of the NWA and employee of AccuWeather, Inc. Allison is a junior in meteorology at Valparaiso University where she is a Presidential and Ernest F. Hollings Scholar for 2013.



Allison is recognized by her professors and faculty as an outstanding meteorology major, where she has excelled in all of her course work and outside activities. She is a go-getter and has great compassion for everyone and everything she encounters in life. Her goal is to become a dedicated forecaster, public servant and advocate.

Broadcast Scholarship in Meteorology



Katherine (Katie) Western of Nixa, Mo., is the winner of the 2013 NWA Broadcast Scholarship in Meteorology. She is a senior at the University of Oklahoma.

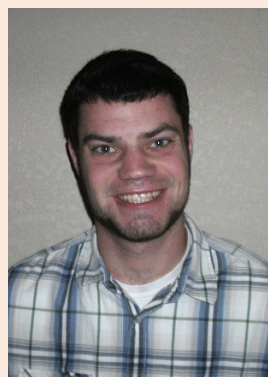
Katie is a natural in her ability to communicate in an easily understandable manner. She performs exceedingly well on air and is already a student leader. She is recognized by her professors as a person

with much talent, skill and maturity beyond her years.

Katie is very passionate about weather and public speaking. Her main career goal is to become a broadcast meteorologist helping to educate the public on weather disasters.

Katie has also won the KY3 Broadcast Scholarship (television station in Springfield, Mo.), CVS Pharmacy Scholarship and the Sooner Speech Scholarship.

Dr. Roderick Scofield Scholarship



Ryan Difani of Pocahontas, Ark., is the winner of the 2013 NWA Dr. Roderick Scofield Scholarship in Meteorology. He is a senior at Western Kentucky University (WKU) where he has maintained 4.0 GPA in his major of meteorology. He is also the 2013 recipient of the AMS Ken Reeves Scholarship.

Ryan is not only recognized as an outstanding academic scholar, but he is also a leader at school and in his community. He has coordinated storm spotter meetings with the NWS and volunteered at other weather workshops. He has created a website for the WKU Meteorology Program and created other websites and GIS maps for the Kentucky Geographic Alliance. Ryan's goals are to pursue a master's degree in meteorology and then move on to a career as a forecaster.

Dr. Ken Crawford Receives a Very Special Honor

National Weather Center

(<http://som.ou.edu/news.php?newsID=187>)

Dr. Ken Crawford served as the Vice Administrator of the Korea Meteorological Administration (KMA) from August 2009 through February 2013, the first foreign expert to occupy a senior leadership position in the Korean government. As Vice Administrator, he was charged with helping advance the forecast skills, improve the meteorological services across Korea, and move the KMA into a top tier status among world meteorological organizations.

His Korean accomplishments created an opportunity for the President of the Republic of Korea, Park Guen-Hye, to award “The Order of Civil Merit Dongbaek Medal” to Vice Administrator Crawford in March 2013. President Park cited his “meritorious contribution to the development of the nation and the society through improving the quality of the meteorological services.”

KMA Administrator Lee Ilsoo presented the award at a special ceremony held at the National Weather Center in Norman, Okla. The Dongbaek Medal is the primary series of honors for Korean civilians. Since its inception in 1975, the Dongbaek Medal has been given to 10 Koreans and 6 foreigners.

Administrator Lee commented, “It is not common for a foreigner to be a winner of the award. As the first-ever foreign public official of Korea, Dr. Crawford worked for 42 months for the KMA. His biggest achievement would be the establishment of the weather radar center and dual-pol radar network that enabled linkages to corporations and other partner agencies. What is surprising is that many people said it would be impossible but he made it possible. He did not spare any effort to acquire more budget dollars for the KMA for better training programs for forecasters and future young talent. Internationally, he played a major role as a bridge between the KMA and other foreign partners, especially for international training with the University of Oklahoma.”

Dr. Crawford was a former Regents’ Professor of Meteorology at the University of Oklahoma (OU), is Director Emeritus of the Oklahoma Climatological Survey and served as the State Climatologist for Oklahoma. He came to OU in 1989, following a 30-year career with the NWS.

During his tenure with NOAA, Dr. Crawford served five years as a Research Meteorologist for NSSL, 15 years as an operational meteorologist, and 10 years as a senior field manager at the NWS Forecast and Warning Office in Norman. In his last NWS position, Dr. Crawford served the NWS as its Area Manager for Oklahoma.

Dr. Crawford is a charter member and strong supporter of the NWA serving as president in 1988 and as a councilor from 1990-1991. In 1991, he was the NWA Member of the Year. He continues to participate in NWA outreach events including a speed mentoring event held this past spring for OU Meteorology students. He is also a Fellow of the AMS.

When asked if he had any words of wisdom for NWA members, his response was: “Based on experiences with the KMA, I would tell younger NWA members that they should focus their time and energy in preparing for opportunities that will eventually find them. The young Koreans seem most encouraged by the knowledge that they could control their own destiny.”



Dr. Ken Crawford (center) is joined by KMA Administrator Lee (right) and National Weather Center Director Dr. Berrien Moore (left) at the medal ceremony. Photo credit: Bill Bunting

New JOM Articles On-Line

Since our last update, six papers (JOM 6-11) have been published in the NWA's Journal of Operational Meteorology (JOM). Two are short contributions and four are articles. A detailed description of one is on page 8. You can read them all by logging on to the NWA Member Portal at <http://member.nwas.org/> and clicking on JOM link under Additional Member Resources on the right.



NWA 38th Annual Meeting: October 12 - 17, 2013

High-Impact Weather Communications: Finding Calm in the Eye of the Storm

Charleston, S.C.

<http://nwas.org/meetings/nwa2013/>

Schedule of Events and Meeting Overview

The 2013 NWA Annual Meeting will include the annual Broadcaster Workshop, and the Sixth Annual Student Session, both on Sunday, October 13. The general sessions will be held October 14-17. The NWA annual awards luncheon will be held on Wednesday, October 16.

Social Media

The NWA will provide updates on this Web page, on the NWA Facebook Page, Twitter and other social media. Please use the hashtag #NWA13 for any tweets associated with the 2013 Annual Meeting.

For more information on exhibits, special accommodations, registration and the overall meeting program, keep checking web page and the links above or contact the NWA office at (919) 845-1546 or exdir@nwas.org.

Meeting Location

North Charleston Convention Center
5001 Coliseum Drive
North Charleston, SC 29418

Host Hotel (Right next door to the meeting!)

BOOK SOON as rooms filling up:
Embassy Suites North Charleston
5055 International Boulevard
North Charleston, South Carolina, 29418

Contact Info

Annual Meeting Program Committee
Chair: Frank Alsheimer
Science and Operations Officer
National Weather Service Forecast Office
Charleston, SC
annualmeeting@nwas.org

Broadcaster Workshop Program Chair:
Mike Goldberg
WTVR-TV
Richmond, VA 23230
mgoldberg@wtvr.com

Agenda coming in August newsletter!

New NWA Members in June

Regular/Military/Retired

Ahmad Bajjey
Albert Cronin
Casey E. Davenport
Wyan A. Dunn
Brian J. Frugis
Roger A. Helvey
Janice Huff
Bryce A. Link
Chris Robbins
Charles Rushing

Students

Vanessa Abuchaibe
Albert Betancourt
Riordan J. Caldwell
Daniel R. J. Canales
Aaron J. Castleberry
Joshua R. Gimbel
Clifford R. Goff
Leah Kos
Nicholas Luchetti
Colin McKellar
Charles V. Menendez, III
Robert P. Millette
James J. Morrow
Zachary P. Sefcovic
Jaclyn T. N. Shearer
Holly Widen
Mike Williams

2013 NWA sponsored Annual Meetings, Conferences and Special Events Oct. 12–17: The 38th NWA Annual Meeting

In Charleston, S.C., at the North Charleston South Carolina Convention Center with the meeting hotel being the Embassy Suites located next door. Details above and at <http://www.nwas.org/meetings/nwa2013/>.

Oct. 28–29: Northern Plains Winter Storm Conference (2013NPWSC)

This Eight annual conference will be held at St. Cloud State University in Saint Cloud, Minn. Abstracts due 4 October. The Central Minnesota NWA Chapter at SCSU is a sponsor. <http://www.stcloudstate.edu/ahs/npwsc/default.asp>.

Other Meetings, Conferences and Special Events in 2013

Sept. 16–20: The 19th AMS Satellite Meteorology, Oceanography and Climatology Conference and the 2013 EUMETSAT Meteorological Satellite Conference

This international conference will be held in Vienna, Austria. Session topics include current and future satellites, instruments and their applications, climate, calibration and characterization, and data access for easy utilization. The overarching theme will be water vapor, clouds, and precipitation, and the use of current and planned Earth observation systems to improve our understanding and adequately monitor trends and variability in the global hydrological system. For more information, please visit <http://www.conferences.eumetsat.int>.

Sept. 23–26: Virtual US-Canada Border Conference

This conference via Webinar will cover many topics related to weather along the US-Canada Border. Details on the conference purpose and recommended audience at: http://www.crh.noaa.gov/bis/?n=nws_border_conference.

Feb. 2–6, 2014: 94th AMS Annual Meeting

The theme is “Extreme Weather—Climate and the Built Environment: New Perspectives Opportunities, and Tools.”
<http://annual.ametsoc.org/2014/index.cfm/programs-and-events/theme>.

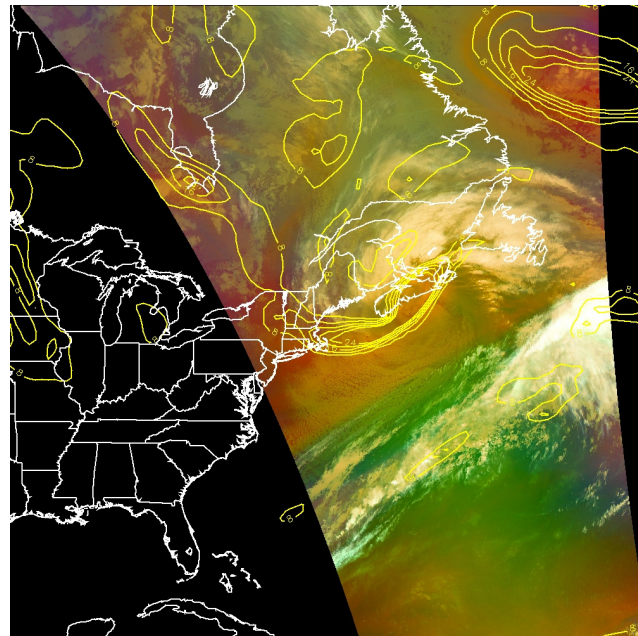
PROFESSIONAL DEVELOPMENT

JOM 7: Multispectral Imagery for Detecting Stratospheric Air Intrusions Associated with Mid-Latitude Cyclones

Provided by Bradley Zavodsky and Andrew Molthan of NASA/Marshall Space Flight Center in Huntsville, Ala., and Michael Folmer of the University of Maryland in College Park, Md., the article describes a new multispectral red, green, and blue (RGB) imagery product, called Air Mass RGB, developed from the Moderate Resolution Imaging Spectroradiometer (MODIS). It combines cloud information from infrared and water vapor imagery with information about ozone content into a single satellite image and assigns RGB colors to specific atmospheric characteristics. It will help forecasters locate cloud and potential vorticity features associated with cyclogenesis.

The Figure is NASA's Aqua satellite MODIS Air Mass RGB product during a Nor'easter at approximately 1700 UTC October 30, 2011. Yellow contours represent 400-500 hPa potential vorticity (PVU; only contours greater than 8 PVU are shown with a contour interval of 4 PVU) from the Global Data Assimilation System analysis valid at 1800 UTC October 30, 2011. It is Fig. 11 in the article.

For information on accessing this and other JOM articles, see page 6.



IMPORTANT DATES

Aug. 5

Deadline for submitting nomination for 2013 NWA Annual Awards

Oct. 12-17

38th NWA Annual Meeting, Charleston, S.C.

Oct. 28-29

Northern Plains Winter Storm Conference, St. Cloud, Minn.

See page 7 for additional dates and professional development opportunities!

NWA Newsletter (ISSN 0271-1044)

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Submit newsletter items to nwanewsletter@nwas.org using the Instruction for Authors at http://www.nwas.org/newsletters/newsletter_instructions.php.

Members receive the Newsletter on-line and access to an on-line portal which includes the Journal of Operational Meteorology as part of their regular, student or corporate membership privileges.

Address, phone number, email and affiliation changes can now be made online: member.nwas.org.

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