

NEWSLETTER

National Weather
Association

No. 08 - 12 DECEMBER 2008

Snow and Tornadoes and Floods Nation plagued by crazy weather in '08

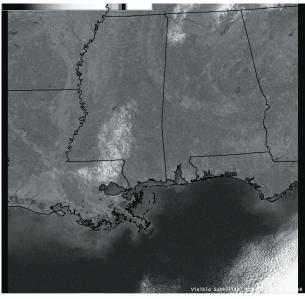
A powerful storm system resulted in extreme weather from southern Texas to New England late in the week of Dec. 8. Weather events included tornadoes, snow, ice and flooding.

Severe thunderstorms started in the Southern Plains on the 8th with a couple of tornadoes reported in Oklahoma and Texas. The next day, storms brought numerous tornadoes and reports of high winds from Texas to North Carolina with the greatest number of events occurring in Mississippi. Severe storms ended on the East Coast on Thursday the 11th and reports included tornadoes near Blackshear, Ga., and Mount Pleasant, N.C.

While severe weather was occurring across the southeastern states, winter weather brought headaches to residents in some Gulf Coast states and in New England. Record breaking snow began in southeast Texas on the

10th and spread east across southern Louisiana into Mississippi ending on the 11th. Some areas received up to nine inches of snow before the event ended with the heaviest amounts falling in eastern Louisiana and Mississippi.

In Houston, the National Weather Service (NWS) reported that Bush Intercontinental Airport received 1.4 inches of snow on the 20th



This MODIS image from Friday Dec.12 at 1601 UTC shows snow remaining on the ground from Louisiana into central Mississippi and in northwest Alabama the day after a record-breaking snowstorm. *Source: NOAA/NWS.*

making this the earliest accumulating snow for the month of December. The last time measurable snow fell at Bush Intercontinental was Feb. 1, 1994, when a tenth of an inch fell. Dec. 22, 1989, was the last time more than an inch of snow fell at the airport and 1989 was the last time a land falling hurricane struck

See WEATHER, page 3

Weather Challenge: Not a Dog Day of Summer



Dateline: December 2008

Subject: Shasta in snow

Photographer: Frank Brody

Location: Alaska, Maine, South Dakota?

Check out page 6 for the answer!

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PRESIDENT'S MESSAGE

I was listening to the play by play of a recent NFL game while driving to WGAL to begin my preparations for a Sunday evening broadcast. The football game was being contested in Tampa that afternoon so I was particularly interested in how the weather was impacting the play. The Storm Prediction Center placed all of central Florida in a tornado watch prior to kickoff given the strong low-level shear in place ahead of an advancing cold front and amplifying mid-level short wave.



My attention to the broadcast was heightened immediately when I heard one of the announcers remark, as best as I can remember, "The weather is really wild right now... some of the clouds are moving right toward us, and I can see clouds above them moving in the opposite direction. The rain is falling hard right now and if there is any lightning I am sure the players will run to get off the field." What is your reaction to this account? Mine was both instantaneous and visceral. What about the thousands of fans seated within the confines of this open air stadium? Is there an evacuation plan in place? Is anyone aware that a tornado watch is in effect? Are there any engineering efforts available to reduce the threat of a lightning strike?

On Aug. 4th of this year, a derecho packing 80 mph winds and nearly continuous lightning moved across Chicago placing nearly 40,000 fans at Wrigley Field in the direct path of an extremely dangerous storm. I recommend you view any of the videos on YouTube to gain an appreciation of the magnitude of the problem we face when a large outdoor venue is impacted by severe weather; try searching "Wrigley Field Severe Weather Aug. 4, 2008" on Google. The scene is paradoxical: a tornado siren can be heard in the background, wind driven rain cascades across the field, lightning flashes across the sky and thousands of people, many laughing while consuming their favorite adult beverage are milling around in the stands or within the concourse apparently oblivious to the threat. I find these images equally chilling and spellbinding.

A recent paper by Joel Gratz, Ryan Church and Eric Noble discusses the threat posed by lightning to spectators at collegiate Division I football games where attendance may surpass 100,000 in the largest stadiums. Several near misses, none closer than a lightning strike 0.6 mile away from 65,000 fans just minutes prior to kickoff in Lane Stadium on the campus of Virginia Tech punctuate the necessity of developing a plan of action now. The National Weather Association is in a unique position to bring our dedicated resources to task to address this huge, and until now, intractable problem.

Les Lemon, past President of the NWA, and I were among a group of speakers at a recent symposium at Kean University in N.J. organized by recent NWA past-President Paul Croft to raise public awareness of the threats posed by severe weather and other natural hazards. We discussed the importance of a national effort to develop not only evacuation plans at large venues but a methodology to engage all stakeholders where weather may impact large audiences. Consider the 2008 collegiate men's basketball tournament game on March 14 in the Georgia Dome when an EF-2 tornado struck downtown Atlanta or the tornado warning issued for Marion County in central Indiana on May 30, 2004, during the running of the Indianapolis 500 and you can begin to acknowledge the enormity of the problem. Lemon reports some progress with professional sports leagues and teams, however the distance between talk and action remains great.

The NWA Council approved the formation of a Societal Impacts Committee this past October to better position NWA resources in our efforts to educate and protect all those involved with large outdoor venues. I propose that we focus our energies on parents, teachers, school administrators and students first. The national initiative must begin at the very basic levels before we can ever hope to succeed at the racetrack or the football stadium. Informed parents who teach their children that any thunderstorm is a life-threatening event may ultimately play a pivotal role in the design and implementation of large venue evacuation plan.

To close my final "President's Message," I want to express my appreciation to the wonderful staff, dedicated volunteers and elected officers of the National Weather Association for a truly rewarding year as your president. The entire membership can be proud of your work which is held in extremely high regard within the meteorological community while becoming a more visible force on the public policy stage. I also want to extend my best wishes Mike Vescio as he assumes the office of president on Jan. 1. I stand ready to assist you as well as all the new officers and council members in the year ahead.

My parents taught me to always leave something better than I found it. I hope the same can be said of my tenure as president of this fine organization. Here is to the promise of 2009!

John Scala President

Remote Sensing Topics in the Encyclopedia of Earth

The Encyclopedia of Earth is a new electronic reference about the Earth, its natural environments, and their interactions with society. The EoE is a free, fully searchable collection of articles written by scholars, professionals, educators and experts who collaborate and review each other's work. The articles are written in non-technical language and will be useful to students, educators, scholars and professionals as well as to the NWA members may be general public. interested in the expanding content on remote sensing topics in the EoE. Current content lists 19 titles, including articles on remote (www.eoearth.org/article/Remote_ sensing) and remote sensing of sea ice (www. eoearth.org/article/Remote_sensing_of_sea_ ice). The latter article provides a good, basic introduction to viewing sea ice from space using visible, infrared, passive microwave, and active radar techniques.

NWA Remote Sensing Committee

www.eoearth.org

Have you visited the NWA Web site lately?

If no, go to

to see the latest additions!

Just some of the things you're been missing:

Job Announcements
Training Opportunities
Scholarship Announcements

The Electronic Journal of Operational Meteorology

Meeting Announcements

See Tim Oram's article on RSS feeds on page 6 to learn how to get notified when the Web site is updated.

Galveston Island. That hurricane was Jerry. The Houston NWS also reported that in 1983 there were several days in December with snow flurries and that year Alicia made land fall in Texas. The snow images with this article were taken by Frank Brody in the Clear Lake, Texas area. Frank reported that an inch of snow fell in the Clear Lake area with three to four inches reported in the far northeast and east suburbs of Houston.

In Lake Charles, La., the 0.4 inches of snow that fell on Dec. 11 set a record for the all time earliest snowfall for the city. The previous record was 0.2 inches on Dec. 22, 1989. Records show that Dec. 11, 2008, and Dec. 22, 1989, are the only two times that snow has fallen in Lake Charles in December.

In Mississippi, the heaviest snow fell from McComb, which is south of Jackson near the Louisiana border, to just east of Jackson in the Morton area, Many locations in this area received between four and nine inches of snow. The wet heavy snow resulted in many downed trees and power lines.

In New England, a dangerous storm was underway while snow fell in Gulf Coast states. Record rainfall combined with below freezing temperatures causing a rare mix of flooding and icing. Reviewing NWS preliminary storm reports from eastern New York to New Hampshire, there were many reports of ice accumulating from one half to one inch. Massive power outages left hundreds of thousands of people without heat and lights and many of those people were still without power as another round of winter moved in during the week of Dec. 15.

Rainfall with the New England storm broke daily records. On Dec. 12, Bradley International in Hartford received 1.72 inches of rain setting a rainfall record for the date. The previous record was 1.54 inches set in 1967. The three day rainfall total for December 10 - 12 at Hartford, Conn., was 3.83 inches and many locations in New England reported three day rainfall totals from two to four inches.

Coastal flooding in Massachusetts and Rhode Island occurred with the storm as did inland flooding from New York to Massachusetts. NWS preliminary storm reports showed that many people had to evacuate their apartments in Wappingers Falls, N.Y., due to flood waters three to four feet deep. The Poughkeepsie Journal reported that the residents evacuated after gas heaters in the basement of the apartments were threatened by the flood waters. Less than an hour later, trees and power lines were reported down and numerous roads were closed approximately 30 miles north of Wappingers Falls in Red Hook, N.Y., due to

Early in the week of Dec. 15, another power winter storm brought arctic air into the central and eastern U.S. along with blizzard conditions, ice and rapid temperature falls.

> **Janice Bunting Contributing Editor**

CHAPTER NEWS

University of Missouri

The University of Missouri Chapter members preceded their September meeting by enjoying ice cream sundaes provided by the club. Some items which were discussed included fund-raising ideas, the bulletin board, internships, scholarships and Chi Epsilon Pi, Campus Weather Service (a group of students who get together and forecast every morning). After officer reports, a member informed the club about storm chase team. Then, two the students gave presentations on their internship with NASA over the summer. Finally, the NWA Annual Meeting was discussed and another member invited the club to a back to school BBQ.

The first order of business at the October meeting was officer reports in which we discussed events coming up such as highway clean up, Preview Mizzou, a camping trip and the NWA Annual Meeting. The meeting's guest speaker was Dr. Tim Eichler from St. Louis University who gave a presentation entitled "The Climatology Interannual Variability of Global Storm Tracks in the CFS (Climate Forecast System) Climate Model."

The November meeting started with an announcement of upcoming speakers and dates for those presentations. Some speakers include Captain Gipson from the Air Force who forecasted in Afghanistan and Greg Carbin from the Storm Prediction Center. Our Holiday Party was also announced. After discussing items such as the Meteorology Club Scholarships, a club movie night, and the Meteorology Honor Society, Chi Epsilon Pi., five students gave presentations on their summer internships. Members were encouraged to apply and were given tips on the application process. Finally, elections for the Storm Chase Team Co-Chairs were conducted.

Club officers for this year are President Madison Burnett, Vice President Ben Herzog, Secretary Natalie Walters and Treasurer Danielle Kozlowski. To learn more about the University of Missouri Atmospheric Science Program go to weather.missouri.edu.

Natalie Walters, Secretary

High Plains

The High Plains Chapter held a short teleconference meeting on Dec. 3, with 19 members logged into the phone conference. The 35 minute meeting was efficient, succinct and cost our chapter very little. We discussed having another such media meeting in the future, perhaps next time with a featured speaker via a Webinar or GoToMeeting. President Rick Ewald started by welcoming everyone to the teleconference. Minutes from the previous meeting were read by Secretary Tim Burke, followed by the Treasurer's report by Matt Masek. The Chapter funds are still doing nicely, and the Jim Johnson Scholarship fund is secure for at least the next three years.

Congratulations to Jordan Carroll of Atwood, Kan., the high school student winner of this year's Jim Johnson Scholarship. Jordan plans on attending Kansas University in the fall. Pictured on our Web site, www.highplainsamsnwa.org is Chapter President Rick Ewald accepting the NWA Chapter of the Year Award at the NWA Annual meeting in Louisville, Ky. We are all proud! President Ewald encouraged all members to consider submitting papers/ presentations to the national meetings - the atmosphere is not much different than at our own regional conventions. The Goodland staff was commended for the fine job they did hosting the High Plains 12th Conference in Hays, Kan., during September. There were over 30 presenters with nearly 60 attendees. Nominations for 2009 chapter officers are being solicited. The Jim Johnson Scholarship committee will consist of Chris Foltz, Teresa Keck, Aaron Johnson and Jennifer Ritterling. A fifth chapter member was also added: Bill Eckrich of DayWeather, Inc. in Chevenne, Wyo., to prevent a tie vote.

The North Platte office gave a brief synopsis of plans for next year's conference. They may change to a two-day conference format to fit in more speakers, and they are looking at the August time frame for hosting the conference. The next High Plains Chapter meeting will be held by late January.

Tim Burke, Secretary

What a long, strange trip it's been: Reviewing the 2008 Atlantic Hurricane Season

The 2008 Atlantic Hurricane Season that produced a record number of consecutive storms to strike the United States ranks as one of the more active seasons in the 64 years since comprehensive records began. Sixteen named storms formed this season, based on an operational estimate by the National Oceanic and Atmospheric Administration (NOAA) National Hurricane Center. The storms included eight hurricanes, five of which were major hurricanes at Category 3 strength or higher. An average season has 11 named storms, six hurricanes and two major hurricanes.

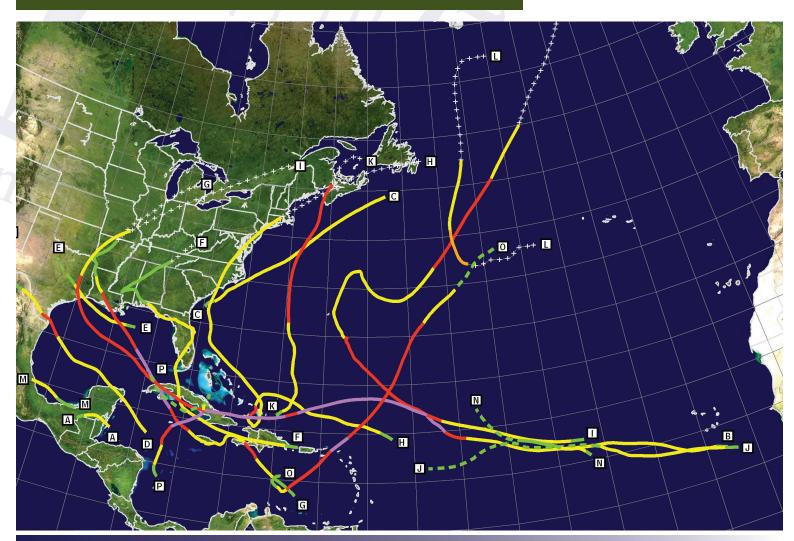
"This year's hurricane season continues the current active hurricane era and is the tenth season to produce above-normal activity in the past 14 years," said Gerry Bell, Ph.D., lead seasonal hurricane forecaster at NOAA's Climate Prediction Center. Overall, the season is tied as the fourth most active in terms of named storms (16) and major hurricanes (five), and is tied as the fifth most active in terms of hurricanes (eight) since 1944 — the first year aircraft missions flew into tropical storms and hurricanes.

For the first time on record, six consecutive tropical cyclones (Dolly, Edouard, Fay, Gustav, Hanna and Ike) made landfall on the U.S. mainland and a record three major hurricanes (Gustav, Ike and Paloma) struck Cuba. This is also the first Atlantic season to have a major hurricane (Category 3) form in five consecutive months (July: Bertha, August: Gustav, September: Ike, October: Omar, November: Paloma). Hurricane Paloma, the only tropical cyclone to occur in November 2008 was the second strongest November hurricane on record. On average, a tropical storm is observed about every other November.

NOAA

Name	Date
ARTHUR	31 MAY-1 JUN
BERTHA	3-20 JUL
CRISTOBAL	19-23 JUL
DOLLY	20-25 JUL
EDOUARD	3-6 AUG
FAY	15-26 AUG
GUSTAV	25 AUG-2 SEP
HANNA	28 AUG-7 SEP
IKE	1-14 SEP
JOSEPHINE	2-6 SEP
KYLE	25-29 SEP
LAURA	29 SEP-1 OCT
MARCO	6-7 OCT
NANA	12-14 OCT
OMAR	13-18 OCT
PALOMA	5-10 NOV

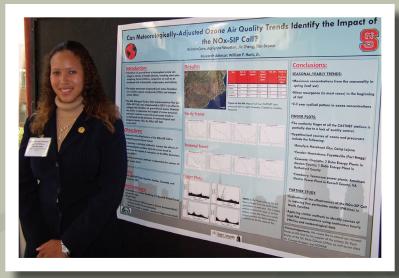
For the NHC summary of the 2008 hurricane season: www.nhc.noaa.gov



First NWA Annual Meeting Student Session

On Sunday afternoon, Oct. 12, 2008, the NWA held the 1st Annual Meeting session designed specifically for meteorology students. The session was structured to give the over 100 attendees a "real-world" view of life after college. In a world where high quality meteorology graduates outnumber the available job opportunities, the speakers shared strategies with the students regarding how to separate themselves from the rest in the competitive job market. Topics included preparing a resume, participating in an interview, the value of having a mentor, and how to write an effective paper, give an oral presentation, or prepare a great poster. The formal session ended with a round of the ever popular "Weather Jeopardy". Afterwards, 40 students displayed technical posters which were viewed by other meeting attendees including numerous broadcasters. Thanks go to many who helped organize and conduct the session; especially John Gordon, NWS Louisville, and John Ogren, NWS Central Region.

Due to the overwhelming success of this event, meeting planners for next fall's 34th Annual Meeting in Norfolk, Va., will organize the 2nd Annual Student Session. Students, especially those from east coast schools, should plan on attending. Special student rates will be offered and details will be announced in the late spring.



North Carolina State University student Kristen Gore participated in the student poster session during the NWA Annual Meeting.

Steve Harned, Editor

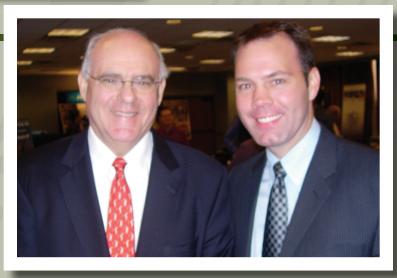


To the left: John Ogren (right) of the NOAA/ NWS Central Region Headquarters conducts a mock interview with students (left to right) Andrew Milevoj (California University of Pennsylvania), Anthony Cummings (Georgia Institute of Technology), Heather Dominik (California University of Pennsylvania) and Jacob Meuth (University of Missouri) during the NWA Annual Meeting first student session.

It's All Relative at the Annual Meeting

Most traveled to the NWA Annual Meeting for professional expansion in October; however, some made it a family reunion!

NWA Executive Director Stephen Harned (left) and his sixth cousin, Kevin Harned, caught up while in Kentucky. Kevin is a TV meteorologist for WAVE-TV in Louisville.





Weather Challenge

A special thanks to NWA Member Frank Brody of Houston, Texas ...

Houston? Yes, you read it right!

The photos to the left and of Shasta the frosty dog on our cover were taken in early December in a freak snowfall.

So weather folk: will they get a white Christmas in Houston, too?

HOW TO KEEP IN THE KNOW: USE RSS OF COURSE!

Looking for a way to get notified when the NWA Web pages have been updated? You might want to consider using the NWA RSS feeds. Maybe you're saying to yourself: "What's an RSS feed?" RSS -- which is usually taken to stand for Really Simple Syndication -- is just a Web page with special code that allows an RSS reader to know when things have changed. Many people use RSS to keep track of new pages or updates to pages on the myriad of blogs and news pages they monitor without constantly having to visit each page to check for updates. According to Wikipedia, the "RSS reader checks the user's subscribed feeds regularly for new work, downloads any updates that it finds, and provides a user interface to monitor and read the feeds" (Wikipedia: http://en.wikipedia.org/wiki/RSS).

You'll need an RSS reader, sometimes called an aggregator, in order to use this service. Some e-mail and Web browsers already support RSS. If yours does not yet support RSS, a reader can be often added as a "plug-in" to your Web browser or e-mail. The RSS reader could also be a separate software application. The choice is up to you, but there are too many options for an RSS reader to list here. If you are interested, the IT committee recommends you review the Wikipedia entry on RSS readers (http://en.wikipedia.org/wiki/List_of_feed_aggregators) and the Wikipedia reader comparison page (http://en.wikipedia.org/wiki/Comparison_of_feed_aggregators). You may want to pick a reader that works with your preferred e-mail or Web browser software since you'll probably already have this up and running rather than having to start another computer program.

Once you have the reader installed, you'll need to "subscribe" to your RSS feeds. Subscribing usually just means clicking on the RSS feed page and telling your reader to remember the URL for the new subscription. You may want to configure a couple options depending on your reader. Once you've subscribed, the RSS reader checks the pages for new or updated content. The NWA has feeds on job announcements, "What's new" on the NWA Web site, and Electronic Journal articles. We'll be adding a feed on Events and Professional Development opportunities in the near future. All of the NWA feeds are listed at: http://www.nwas.org/rss.php. You can find the link to our list of RSS feeds in the top menu of the main NWA Web page (http://www.nwas.org).

RSS is an easy way to stay current on changing news, events, and blogs and most news sites offer RSS feeds. It's also a way to monitor the weather. The National Weather Service has feeds (http://www.nws.noaa.gov/rss/) from a number of organizations including the National Hurricane Center and the Storm Prediction Center. Many NWA corporate members (http://www.nwas.org/corporate.php) offer RSS feeds for their products and services; you'll need to visit their sites for more information on feeds that they offer.

Tim Oram IT Committee Chair

Sesons Greetings to all of our members from the staff and officers of the Sational Weather Association!



Professional Development Opportunities in 2009

89th AMS Annual Meeting: Jan. 11 – 15

Scheduled at the Phoenix Civic Plaza Convention Center in Phoenix, Ariz. Visit www.ametsoc.org/MEET/annual/ for more.

6th Annual Southeastern Coastal and Atmospheric Processes Symposium (SeCAPS): Feb. 27 - 28

Scheduled at the campus of the University of South Alabama in Mobile, Ala. Oral and poster presentations on any aspect of meteorology, geography or geology are welcomed. Abstracts due Feb. For more, contact AMS Faculty Co-Advisor Gina Wade gwade@usouthal.edu or visit check www.southalabama.edu/meteorologyclub/secaps.

9th Annual National Severe Weather Workshop: March 5 - 7

Contribute your input by using the first-ever National Severe Weather Workshop survey (online for a limited time at: https://www.surveymonkey.com/s.aspx?sm=cbcttdbgCU6ou9EieQO1_2fQ_3d_3d). Survey results will be used to better design the overall workshop experience for attendees. Scheduled for Norman, Okla.

34th Annual Northeastern Storm Conference: March 6 - 8

Sponsored by the Lyndon State College AMS/NWA Chapter. Dr Joshua Wurman is the banquet speaker and Wendy Abshire will speak at the Ice Breaker. Abstracts due Jan. 30. Visit http://apollo-dev.lsc.vsc.edu/ams/index.php?page=nesc for more.

2009 Alaska Weather Symposium: March 10 – 12

Scheduled for Fairbanks, Alaska, more information is available at http://weather.arsc.edu/Events/ASWo9.

2009 TESSA National Storm Conference: March 14

This public event features the third annual Super Storm Spotter Session which provides the highest level of training available to storm spotters anywhere in the country. The session will be presented by Ft. Worth NWS Warning Coordination Meteorologist Gary Woodall. Watch the TESSA Web site www.tessa.org for a complete list of presenters.

7th Annual Climate Predication Applications Science Workshop: March 24 - 27

Scheduled for the National Weather Center in Norman, Okla. Visit http://climate.ok.gov/cpasw/ or call Diane Perfect at (301)713-1970 ext. 132 for more.

The 2009 Southeast Severe Storms Symposium: March 27 - 28

This is the eighth annual symposium sponsored by the East Mississippi Chapter of the NWA and AMS. Learn more at http:// www.msstate.edu/org/nwa/sympos.shtml.

7th Annual Great Lakes Meteorology Conference: March 28

Sponsored by the Valparaiso University AMS/NWA Chapter and scheduled for Strongbows Inn located in Valparaiso, Ind. The keynote speaker will be Dr. Tim Marshall from Haag Engineering. Abstracts due Feb. 8. Visit www.valpo.edu/organization/nwa/.

13th Annual Severe Storms and Doppler Radar Conference: Tentatively scheduled April 2 - 4

Sponsored by the Central Iowa Chapter of the NWA. Visit www.iowa-nwa.com for updates as plans progress.

13th Annual Northern Plains Weather Workshop: April 27 – 28

Scheduled for Rapid City, S.D., the sponsors are the NWS and the SD School of Mines and Technology. Invited talks will be given on VORTEX2, dual-polarization radar, incident support meteorology, tower strikes and high-speed lightning photography, and climate services and mesonet applications. Abstracts are due March 1. Visit www.ias.sdsmt.edu/NPWorkshop/ for more.

23rd AMS Conference on Weather Analysis and Forecasting/19th AMS Conference on Numerical Weather Prediction: June 1 - 5

Scheduled for Omaha, Neb. Co-sponsors are the American Meteorological Society and the National Weather Association; organized by the AMS Committee on Weather Analysis and Forecasting with assistance from the NWA Committee on Weather Analysis and Forecasting, Abstracts due Jan. 29. Call for Papers is at www.ametsoc.org/MEET/ann/callforpapers.html.

Inland Impacts of Tropical Cyclones Conference: June 10 – 12

Scheduled for the Westin Peachtree Plaza in Atlanta, Ga., the host is the Metro Atlanta NWA/AMS Chapter. Oral presentations are solicited around the broad theme of the inland impacts of tropical cyclones. Abstracts due Feb. 6; submit electronically to science committee chairperson Rob Handel (robert.handel@noaa.gov). For more, call Trisha Palmer (trisha.palmer@noaa.gov) or visit www.ametsoc.org/chapters/atlanta/iitc.htm.

34th NWA Annual Meeting: Oct. 17 - 22

Scheduled for the Sheraton Waterside Hotel in Norfolk, Va. As is it available, details will be posted at www.nwas.org/meetings.

We're Looking for Winter!

When you think wintertime, what's your mind's eye see? We're searching for that perfect picture to illustrate winter ... if you capture it, you may be the showcase photo on the next DIGEST cover!

Hurry and submit your best winter images by Jan. 10 via email to exdir@nwas.org or on a disk to NWA headquarters.

The Publication Committee selects the images used on DIGEST covers. (Preferred formats are EPS or TIFF and high-resolution JPGs.)



Dates 2 Remember

Jan. 11 – 15: 89th AMS Annual Meeting, Phoenix, Ariz.

Feb. 27 - 28: 6th Annual SeCAPS

March 5 – 7: 9th Annual National Severe Weather Workshop

March 6 – 8: 34th Annual Northeastern Storm Conference

March 14: TESSA National Storm Conference

March 24 - 27: 7th Annual Climate Prediction Applications Science Workshop

March 27 – 28: 2009 Southeast Severe Storms Symposium

March 28: 7th Annual Great Lakes Meteorology Conference

Oct. 17 - 22: NWA Annual Meeting, Norfolk, Va.

See page 7 or www. nwas.org/events.php for details on these and additional Professional Development Opportunities!

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Members receive the Newsletter and *National Weather Digest* as part of their regular, student or corporate membership privileges. Newsletter subscriptions are available for \$18 per year plus extra shipping costs outside U.S. Single copies are \$1.50. **Please send address, phone number, email and affiliation changes to assist@nwas.org.**

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