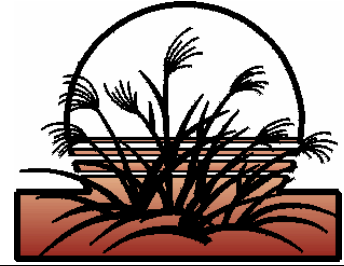




**NEWSLETTER  
TWIN CITIES CHAPTER  
AMERICAN METEOROLOGICAL  
SOCIETY  
October, 2007 Vol. 29 No. 2**



**The meeting of the Twin Cities Chapter of the AMS will be at 7 PM Tuesday, October 16th, 2007, Flying Cloud Airport, Eden Prairie. Specific directions to the meeting can be found on page 5. AMS chapter members, interested acquaintances and potential members are invited to attend.**



*Speaker: Patrick Didier*

*Topic: NOHRSC Gamma Snow Survey*

LTJG Didier joined the airborne snow survey program in January of 2006, after 8 months of flight training in Vero Beach, Florida. Originally from San Diego, he graduated with a BS in Ecology from California Polytechnic, San Luis Obispo in 2001. He joined the NOAA Corps in 2002, and served two and a half years as a junior officer on board the NOAA Ship GORDON GUNTER out of Pascagoula, Mississippi.

*President's Corner: Chris Bovitz*

Okay, who ever is in charge of the rain, you can stop now. I suppose it's good in the greater scheme of things to recharge our aquifers, bring up our lake levels and ensure there's enough soil moisture for spring planting, but I think we're good now.

It was great to see so many people at the September meeting! And we got a good number of new members, too, some of whom came alllll the way from St. Cloud. Thanks, too, go to the Twister Sisters and Brad Nelson on the great presentation about their first-hand account of the Greensburg tornado from earlier this year.

We still have plenty of opportunity for those who want to get involved to get involved. The poster committee, science fair judges, DataStreame are all projects looking for a few good people with a few hours to spare.

And keep in mind that you are our best advertisers. When you get this newsletter, post it in a prominent place. E-mail your friends about the newsletter. Like I've said, many hands make light work. And let's make it fun!



And if you don't like what's going on, just standing there isn't going to change anything. If you have some ideas, let's hear them!

## *Movin' On, Movin' Up, Movin' Out*

If you've heard some news about a member, send it to Kurt ([newsletter@twincitiesams.org](mailto:newsletter@twincitiesams.org)).

If you have big changes in your personal or professional life you would like to announce to the chapter, please send a summary to [newsletter@twincitiesams.org](mailto:newsletter@twincitiesams.org).

## *Member Sign-up and the Member Page*

This year, we have a new and improved [member application page](#) to support our new [member page](#). You can fill out the page on-line and send the information to the secretary/treasurer, or you can print it out and send it in, too. Either way, we need your dues, dependent on how you want your newsletter delivered.

We're going to have a list on the web of our members. You can see it at <http://twincitiesams.org/members.html>. This will be a list that the public will see, so if there's something you don't want to be seen, denote that when you fill out the membership form. I know that web spiders are out there and can pull e-mail addresses out of web pages. To fix that, I will make e-mail addresses images, making them harder to see by these web-page-searching programs. And if you don't want any information of yours listed, let us know.



## *Minutes of the September 2007 meeting*

The September 2007 meeting of the Twin Cities chapter of the American Meteorological Society was called to order at 7:05 pm on September 18, 2007 by President Chris Bovitz. Vice President Lisa Schmit, Secretary/Treasurer Lori Bovitz, and Newsletter Editor Kurt Scholz were in attendance along with approximately 20 members and potential members.

Introductions were made of all members present. A recap of the May meeting and a tour of the current web site - [twincitiesams.org](http://twincitiesams.org) - were provided.

Requests for volunteers for the Poster Committee for the National AMS meeting and for the DataStream project were made. In general, it was requested for volunteers to step up and help out as needed throughout the year.

The main goal for the year is to increase the awareness of our group. We cater not only to the professionals in the area, but also to the general weather enthusiasts in the community across southern Minnesota. Outreach events are planned, but the members are also requested to post the newsletter or let others in the community know about our group. This includes in conversation, forward the newsletter, or post the meeting notice in community locations. Some of our best advertising is word-of-mouth.

It was announced that this is our 60<sup>th</sup> year. The first Twin Cities local chapter was organized was September 1, 1948. More about this at future meetings.

The business portion of the meeting was adjourned at 7:40 p.m.

After the meeting, the Twister Sisters ([www.twistersisters.com](http://www.twistersisters.com)), Peggy Willenberg and Melanie Metz along with Brad Nelson from DTN/Meteorlogix gave a presentation on their experiences during the Greensburg, KS tornado of May 4, 2007.

The Twister Sisters were in the area and chased the Greensburg, KS. They had video and video captures of the actual tornado despite it being a night tornado. The tornado touched down at around 8:30 p.m. and entered Greensburg just before 10:00 p.m. It was up to two miles wide and was a part of a family of 12 tornadoes, one of which was actually larger than the Greensburg, KS tornado. The Greensburg, KS was the first tornado rated EF-5. The rating is based on the new Enhanced Fujita scale that takes into consideration differences in construction and other variations not originally considered when the original Fujita scale was created.

The tornado developed near a dryline bulge in SW Kansas just north of another storm that developed in extreme northern Oklahoma. This storm may have helped to break the cap and along with moisture being fed northeast into the area set the stage for the initiation of the storm cell. Once it developed, the storm cell ended up riding up along the dryline, remaining in an area of high shear and high CAPE. The tornado was on the ground for about an hour and lifted just northwest of Greensburg. The storm curled up and the storm cell recycled and produced another tornado northeast of Greensburg.

### *Upcoming AMS Chapter Meetings and Other Events*

<b>2007-2008 Chapter Year</b>		
<b>Date &amp; Time</b>	<b>Event</b>	<b>Location</b>
Tuesday, October 16 7:00 pm	October meeting Speaker: Patrick Didier Topic: NOHRSC Gamma Snow Survey	<a href="#">Flying Cloud Airport</a> Eden Prairie, MN
Thursday, October 18	<a href="#">The 15th Kuenast Lecture</a> Speaker: Dr. Kerry Emanuel, Massachusetts Institute of Technology Topic: Divine Wind: The History and Science of Hurricanes	Room 335, Borlaug Hall <a href="#">University of Minnesota</a> St. Paul, MN <a href="#">(map)</a>
October 24-25	<a href="#">2007 Northern Plains Winter Storm Conference</a>	<a href="#">Kelly Inn</a> St. Cloud, MN
Tuesday, November 13 7:00 pm	November meeting Speaker: Rich Naistat Topic: His take on the DOC Inspector General's report on the Rogers Tornado	tbd
Second week of December 2007 7:00 pm	Tour of <a href="#">KSTP</a>	<a href="#">KSTP-TV Studios</a> St. Paul, MN <a href="#">(map)</a>
January 2008 7:00 pm	January meeting Speaker: Bill Sites Topic: Life aboard a NOAA Corps ship	<a href="#">Twin Cities WFO</a> Chanhassen, MN <a href="#">(map)</a>
January 20-24	<a href="#">88th Annual Meeting of the American Meteorological Society</a>	New Orleans, LA
February 2008	February meeting Speaker and topic: tbd	tbd
March 2008 7:00 pm	March meeting Speaker: Jim Gilbert Topic: Climate and Plants	<a href="#">Minnesota Landscape Arboretum</a> Chanhassen, MN

		<a href="#">(map)</a>
April 2008 7:00 pm	April meeting Speakers: Seniors at St. Cloud State University Topic: Their senior theses	<a href="#">St. Cloud State University</a> St. Cloud, MN
May 20, 2007 7:00pm	May meeting Picnic, recap of the year, elections, and planning for next year	<a href="#">Twin Cities WFO</a> Chanhassen, MN <a href="#">(map)</a>



## *A Look at Weather History: The Discovery of Air*

Anthony Stender

Most people today take for granted that we know what air is and that air consists of key elements from the periodic table. Prior to the 1700s, the only four recognized elements were earth, air, wind, and fire. Not until the 1700s, a golden age for chemistry and science, did it become clear that the air around us was a mixture of many ingredients.

Antoine Laurent Lavoisier (1743 – 1794) initially followed the family tradition of becoming an attorney. However, he became increasingly interested in science, and he had the fortunate opportunity to be educated by some of the leading scientists of his day. By the age of 20, he had taken an interest in chemistry and meteorology, and he began taking barometric measurements on a daily basis. Because of a close association with a geologist, Lavoisier focused his chemistry studies on water and applications to geology. During his 20s, Lavoisier also joined a tax collection agency, which probably seemed like a good idea at the time.

In his experiments with fire and water, Lavoisier soon concluded that oxygen was a unique and important kind of air that played a role in combustion. Once Lavoisier became adept at making oxygen in the lab, other scientists began experimenting with it and soon found that birds lived longer in a pure oxygen environment than in standard air. Lavoisier came up with the name oxygen for this element, which is Greek for “acid former”, because he actually misunderstood the role that oxygen plays in acids. He soon became equally adept at generating hydrogen gas and experimented with it. In time, Lavoisier suggested the presence of 33 elements, although this list included such things as heat and light.

Before Lavoisier’s work with hydrogen, hot air balloons could only travel as high as 1,000 feet. However, balloons soon became capable of reaching 10,000 feet with the aid of this new hydrogen gas. As a result, Lavoisier was put on a committee to improve ballooning. He was also appointed to a position on the Royal Gunpowder and Saltpeter Association in order to make better gunpowder.

Lavoisier also made a variety of other noteworthy contributions to science. For a time, he worked with Benjamin Franklin on lightning research, and they worked on installing lightning rods together. He also collaborated with other weather observers and stated that it could be possible to predict the weather by knowing the weather at other locations and at different altitudes. In addition, Lavoisier helped with the establishment of the metric system, and he did extensive work on the phase changes of water. Lavoisier was also a friend of the famous mathematician, Joseph Louis Lagrange. Lagrange stated that Lavoisier made chemistry “as easy as algebra”.

Because of his role as a tax collector, Lavoisier met his fate during the French Revolution. Despite his request to finish some of his scientific experiments, he was sent to the guillotine at the age of 51.

Sources:

“Chemical Achievers: The Human Face of the Chemical Sciences: Antoine-Laurent Lavoisier”, Chemical Heritage Foundation. On the web at:

<http://www.chemheritage.org/classroom/chemach/forerunners/lavoisier.html>

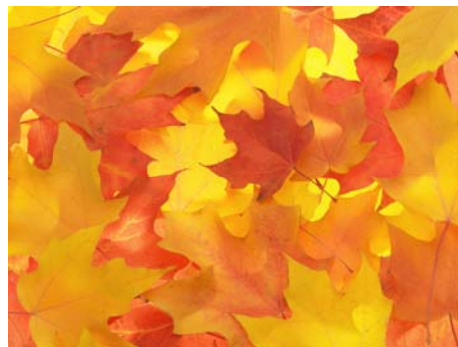
Bell, E. T., Men of Mathematics. 1965, Simon and Schuster, p. 153-171.

Gaffney, J. S. and N. A. Marley, “Chemist and meteorologist – Antoine Lavoisier”, 5<sup>th</sup> Conference on Atmospheric Chemistry. On the web at:

[http://ams.confex.com/ams/annual2003/techprogram/paper\\_56568.htm](http://ams.confex.com/ams/annual2003/techprogram/paper_56568.htm).

### ***AMS on the WWW***

Please check <http://www.twincitiesams.org> for lots of interesting information, changes and updates.



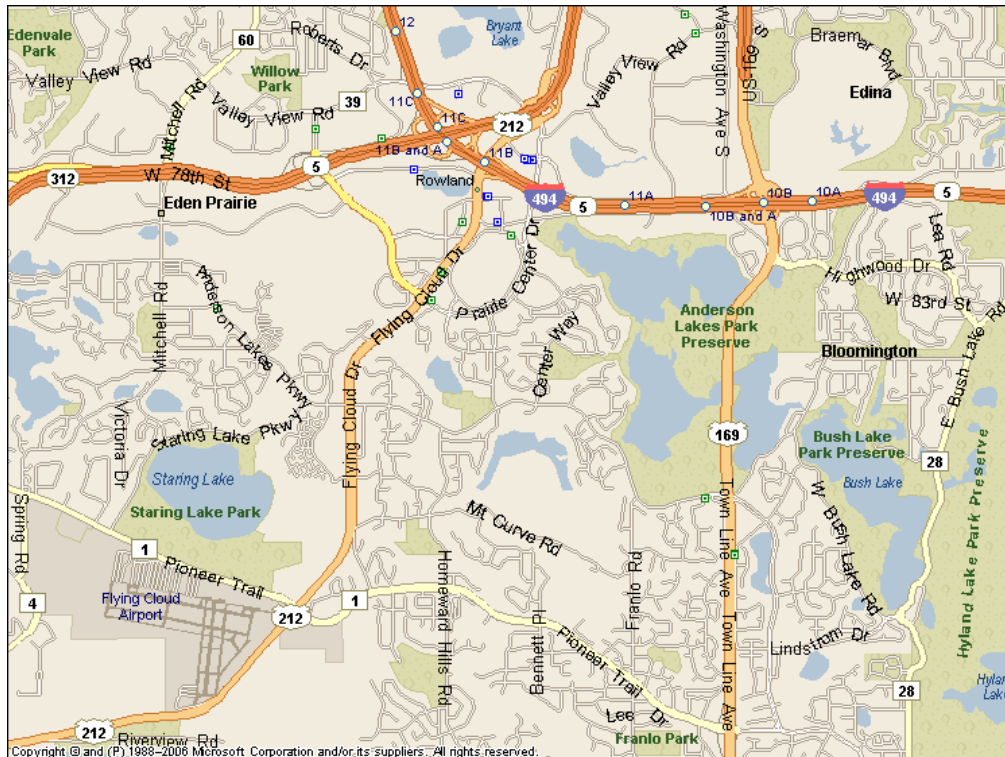
### ***Editor's notes – Kurt Scholz***

Doug Dokken and I participated, on behalf of our AMS chapter, in the two-day annual “3M Visiting Wizards” events held at the 3M campus in Maplewood on Friday and Saturday, October 5<sup>th</sup> and 6<sup>th</sup>. There were probably more than 50 exhibitors including the U of M Raptor Center, the Bakken Museum, Dragonfly TV, MN Microscopy Society, First Lego League, MN Herpetological Society, Carpenter Nature Center, and many others. In addition, there were plenty of hands-on activities: tea-making, origami, operating a pin-hole camera. We had a great time on Friday talking to more than 300 elementary and middle school science teachers. Many were very interested in obtaining new ideas for their science courses. We demonstrated a mini tornado simulator and how to build one of your own, showed videos, internet weather data, made hail stones of different sizes (from play-doh and other props), and generally answered hundreds of interesting questions. The enthusiasm of the teachers was wonderful. On Saturday, over 500 3M employees and their elementary and middle school kids visited the exhibits.

Consider attending the 15<sup>th</sup> Annual Kuehnast Lecture Series held on Thursday, October 18 at 3:30 in Borlaug Hall on the St. Paul campus of the University of Minnesota. The speaker is the distinguished researcher, author and one of TIME Magazine's "100 People Who Shaped the World", Dr. Kerry Emanuel of M.I.T speaking on “Divine Winds: The History and Science of Hurricanes”.

*The October meeting will be held at 7pm, on October 16<sup>th</sup>, 2007, at Flying Cloud Airport, 9960 Flying Cloud Dr, in Eden Prairie.*

## Directions



From the east, I-494 to exit 11A, keep left on ramp, turn left on to US-212 (Flying Cloud Dr.). If coming from the North on Flying Cloud Dr (212), it is the first turn past the Pioneer Trail Intersection. If coming on Pioneer Trail, turn South on Flying Cloud Dr and it's the first turn on the right. If coming from the South on 212, the entrance is to the left once you get to the top of the hill. Try to get as many people to carpool as possible, as parking is somewhat limited, although at 7pm this might not be an issue.

The meeting will be at Executive Aviation, South Hangar. The easiest way is just to meet in the main entrance, and once everyone is there, we can all walk back together. I'll get some folding chairs set up in front of the plane. Executive is at 9960 Flying Cloud Dr, Eden Prairie.

Please fill out this form - either online or printed - and send it in with your annual Chapter dues (only by regular mail), whether or not you are entering the forecast contest. This information is used for Chapter purposes only, and only your name will be listed on the Chapter website, unless you tell us otherwise.

♣ information required for membership  
♦ information which be posted on the member page unless you tell us otherwise

**♣ Type of membership desired**

Regular member (dues: \$20/year with hardcopy of newsletter, \$18 with electronic copy)

Student member (dues: \$6/year with hardcopy of newsletter, \$5 with electronic copy)

**Personal information**

♣ ♦ Name: \_\_\_\_\_  Don't publish my name

♣ Street address: \_\_\_\_\_

♣ ♦ City: \_\_\_\_\_  Don't publish my city

♣ ♦ State/Province: \_\_\_\_\_  Don't publish my state/province

♣ ZIP/Postal code: \_\_\_\_\_

♦ Country (if not USA): \_\_\_\_\_  Don't publish my country

Telephone number: \_\_\_\_\_

♣ ♦ E-mail address: \_\_\_\_\_  Don't publish my e-mail address

♦ Occupation/job title: \_\_\_\_\_  Don't publish my job

♦ Place of work: \_\_\_\_\_

You may also send us a picture of yourself for the [member page](#). Please limit the size to at most 200 pixels on a side. Attach it to the e-mail that pops up when you submit your application, or [create a new message](#) and attach it to that. Pictures (and other information) will be screened, so don't try to get cute. Okay, maybe a little.

If you've never been a member of our chapter before, how did you hear about us?

\_\_\_\_\_

Suggestions for meeting topics or speakers:

\_\_\_\_\_

Other ideas for the chapter:

\_\_\_\_\_

You may also send e-mail to [info@twincitiesams.org](mailto:info@twincitiesams.org) if you need to elaborate more than what there is room for here.

After submitting this form, send a check (payable to **Twin Cities AMS**) with the correct amount of dues (as noted above), to

Twin Cities AMS  
c/o Lori Bovitz  
20716 Hurley Ave.  
Lakeville, MN 55044

### Weather forecast contest entry

Entries for the weather contest will be accepted through December 15, 2007. We must receive your dues by then for your entry to qualify.

in = Total snowfall from December 1, 2007, to May 1, 2008,  
as recorded at the MPX WFO in Chanhassen, MN

°F = Coldest temperature for the winter (December 22, 2007, through March 20, 2008)  
as recorded at MSP International Airport

°F = Tiebreaker: Warmest temperature for the winter (December 22, 2007, through March  
20, 2008)  
as recorded at MSP International Airport

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Arden Hills MN 55112-3644

