

Asheville AMS  
Minute of Meeting  
16 November 2006

1. The third meeting for 2006-07 of the Asheville American Meteorological Society (AMS) chapter was held on Thursday night, Nov 16, 2006, in Laurel Forum on the University of North Carolina – Asheville (UNCA) campus. It was called to order by the President, Maj Paul Roelle. There were 33 persons in attendance, including several students from the Asheville AMS student chapter. There were also two guests from the Upstate South Carolina AMS chapter in Greer, SC.
2. Mr Larry Lee, President of the Upstate SC AMS, took a few moments to highlight National Weather Service (NWS) internship programs for students. He stated there are a few “SKEP” internships at selected NWS stations around the country, but not at the GSP NWS station this upcoming year. Within the scope of this program students are brought on board in paid positions while still in school, leading to possible full-time positions with the NWS upon graduation. He also mentioned a program where students can internship with the NWS during the summer in unpaid positions, enhancing their job opportunities upon graduation.
3. The secretary, Mr John Gray, read the minutes for the previous meeting. There were no additions or corrections. The treasurer’s report was also presented by Mr Gary Swanson, with no corrections. Mr Bruce Bureson then talked about the upcoming western North Carolina science fair later in the winter, with preliminary plans progressing for the chapter. Finally, the President, Maj Paul Roelle, stated the next meeting would be the Christmas meeting with refreshments. Mr Grant Goodge will present a slide show of his many fabulous weather pictures taken over the years. Maj Roelle also mentioned that the Jan-Feb-Mar meetings would be a series of presentations focusing on climate change, with distinguished speakers for each month already lined up. The meeting was then adjourned by the President for the following presentations.
4. There were two speakers for the meeting. Mr Steve Ansari works for the National Climatic Data Center (NCDC) in Asheville. Mr Chad Hutchins, currently a student in the meteorology department at UNCA, also works part time at NCDC.
5. Steve Ansari presented a slide show entitled “Radar Visualization and Data Exporter Tools to Support Interoperability and the Global Earth Observation System of Systems.” He stated in February 2005, 61 countries around the world agreed on a 10 year plan to share geospatial data and services. This system is known as the Global Earth Observation System of Systems (GEOSS). GEOSS focuses on easy access to environmental data and interoperability across different systems, allowing participating countries to measure the “pulse” of the planet. In support of GEOSS goals, NOAA’s National Climatic Data Center (NCDC) has developed radar visualization and data exporter tools in an open system environment.
6. Mr Ansari further explained that:

a. Primary radar network data and products archived at NCDC includes Weather Surveillance Radar 1988 Doppler (WSR-88D) and Next Generation Doppler Radar (NEXRAD) (S-Band) which includes 160 NEXRAD sites in the CONUS, Alaska, Hawaii, Puerto Rico, Guam, and Korea.

b. Other radar network data and products available includes: NOAA regional & CONUS radar-based precipitation mosaic (multi-sensor product), the Collaborative Adaptive Sensing of the Atmosphere (CASA) radar network (X-band), the Environment Canada Radar Network (C-band), and the NOAA 3-D reflectivity and QPE mosaic product at 1km resolution.

c. Potential radar networks data and products in the future include the Department of Transportation Terminal Doppler Weather Radars (C-band), the Phase Array Radar networks, and other global distributed radar networks.

7. Mr Ansari explained the data available at NCDC includes the entire NEXRAD period of record from 1991 to present, which includes volume scan data (Level II) and derived products (Level III). This consumes 1.5 petabytes, or the equivalent of 334,652 DVDs. Anticipated increases in radar data will expand required storage requirements to 6.4 terabytes/day in 2010 and 32 terabytes/day by 2020.

8. The NCDC radar tools are used to view, analyze and export radar data from multiple sources and networks in an Open Geospatial Consortium (OGC) and Common Data Model (CDM) compliant environment. The NCDC Radar Data Exporter will serve as the bridge to other scientific user communities, including engineering, biology, education, atmospheric sciences, disaster relief, insurance, hydrology, and multimedia applications. The NCDC Radar Viewer will be a cross-platform, GIS-based viewer able to integrate personal GIS datasets and web services with NEXRAD data, save images and animations, and apply filtering, smoothing, mosaic, and composite and math operations to the images. Using several slides and animations, including sequences from hurricanes Charlie and Katrina, he illustrated the exciting current and future developments available in this area of display and research. There were several in the audience associated with the developing Asheville “weather initiative” who offered assistance in the form of expertise and software to help the UNCA students with this field of study.

9. NCDC recently partnered with NOAA’s National Severe Storms Lab to decode Sigmnet C-band radar data giving the NCDC Viewer/Data Exporter the functionality to read C-Band. This supports a bi-lateral agreement between the United States and Canada for data sharing and interoperability with the WSR-IID and Environment Canada radar networks. NCDC also partnered with the University of Oklahoma to develop decoders to read a test bed of distributed X-band radars that are funded through the Collaborative Adaptive Sensing of the Atmosphere (CASA) project.

10. Mr Chad Hutchins then presented his talk on “Integrated Data Products for NOAA’s Severe Weather Data Inventory.”

11. Mr Hutchins gave an overview of the data types available including NEXRAD Level III products, the National Lightning Detection Network, the Storm Events database, the Storm Prediction Center (SPC) preliminary local storm reports (LSR), and tornado and severe thunderstorm warnings.

12. Products available from the NEXRAD Level III products are point features describing general storm structure, hail, mesocyclone, and tornado signatures. All are searchable and exportable. The Vaisala National Lightning Detection Network (NLDN) includes 130 sensors nationwide with data spanning from 1995 to the present. The Storm Events database includes text reports from the NWS and the SPC databases, including reports of tornadoes, hail, lightning, and wind. Associated fatalities, injuries, and crop/property damage reports are also in the database. This database spans from 1950 to the present. The SPC local severe weather reports includes relayed NWS ground reports from local officials, allowing near real time integration and aiding in disaster operations to make important, key decisions. This particular data is available from 1999 to the present. Data in the severe weather and tornado reports includes NCDC SRRS text products from the HDSS access system. It contains all NWS issued text products from 2001 to the present.

13. The severe weather data inventory consists of multiple data products housed in a geospatial database, is modular, and allows multi-user, multi-platform visualization able to formulate unique dataset relationships. Data downloads can be in shape files, netCDF, or text files. Mr Hutchins gave several examples of web page displays using this information. The web services will allow programmatic access to data, allow integration into custom applications, and is system and language independent.

14. Questions and answers followed each of the presentations.

John D. Gray  
Secretary, Asheville AMS