

# KCCI SchoolNet8 and the Iowa Mesonet

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*Iowa State University*

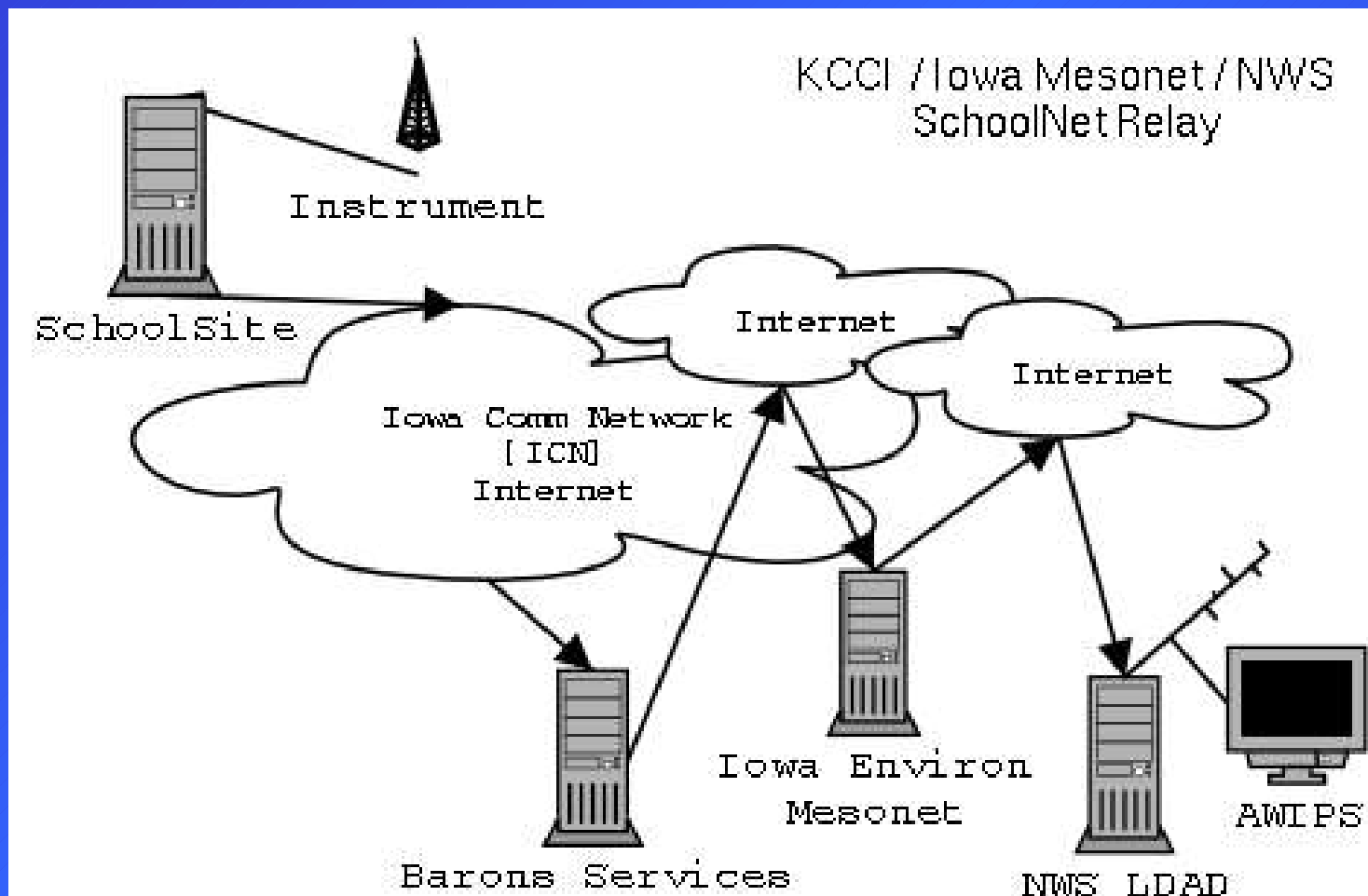
# Iowa Environmental Mesonet 411

- What does 'mesonet' mean?
  - 'meso' - Spatial scale, 'net' - network
- Why 'environmental'?
  - We are interested in air quality, water quality and other non-weather datasets
- Where is 'Iowa'?
  - It is the current state you are in other than confusion.

# More on the IEM

- Project of the Department of Agronomy at Iowa State University
- We are data pigs.
- Look to meet the growing data needs of users in the State and elsewhere.
- KCCI SchoolNet has provided us a valuable network to meet various needs.

# Data Flow



# Data Formatting

C 074 Min 02/17/03 ENE 00MPH 000K 460F 007F 084% 30.08"  
00.00"D 00.07"M 00.00"R

D 074 Max 02/17/03 ENE 10MPH 050K 460F 021F 100% 30.20"  
00.00"D 00.07"M 00.00"R

E 074 12:01 02/17/03 ENE 03MPH 046K 460F 020F 099% 30.09F  
00.00"D 00.07"M 00.00"R

Your site produces roughly 6 obs per minute!

# Converted Data Formats

## METAR

SAUS43 KDMX 171536

METAR

QJEI 171535Z 05004KT M13/M14 A3009 RMK  
T11281144 P0000 70000=

## Comma Delimited

SAEI4,2003/02/17 15:35:00,-11.7,  
13.3,2,180,0.0,0.0,30.09

# SchoolNet8 Data Users

# SchoolNet8 Data Users

- Storm Prediction Center [SPC]
  - Norman, Oklahoma
  - In charge of providing **timely** forecasts and watches of extreme weather.
  - Use schoolNet8 data to identify *mesoscale* boundaries critical in severe weather forecasting



# SchoolNet8 Data Users

- River Forecast Center [RFC]
  - Chanhassen, MN
  - In charge of analyzing and forecasting river flood conditions. Hydrological data.
  - Use SchoolNet8 precipitation totals for their water analysis.
  - The SchoolNet8 network has doubled the hydrological observing sensors in Central Iowa.

# SchoolNet8 Data Users

- Forecast Systems Laboratory [FSL]
  - Boulder, Colorado
  - Data collected under the MADIS project.
  - Data is used in very detailed and heavily quality controlled surface analysis programs.
  - This data is then included in some NCEP models.

# SchoolNet8 Data Users

- National Weather Service [NWS]
  - Des Moines, IA
  - Receiving data in three different formats
  - Use data in hydrological applications, surface analysis, severe weather awareness, winter weather awareness.
  - Are automatically alerted of 50+ MPH wind gusts and heavy rainfall.

# NWS Auto Alerts

- Previously, KCCI would have to manually relay observations to the weather service.
- Now, the IEM automatically generates warnings that appear on forecaster workstations.
- You can also sign up on the web site to receive these alerts!

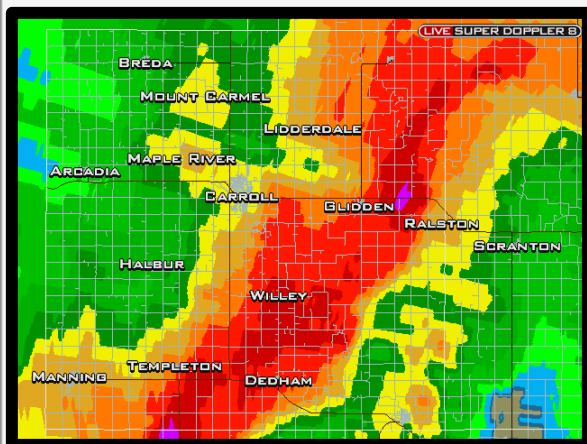
# NWS AWIPS alerts

File Edit Options Version Tools Scripts Products Help

AFOS Browser Load History WMO Search Enter Editor  Accum  Update Obs Clear

AFOS Cmd:  WMO TTAaii CCCC:  AWIPS ID:

KCCI SNET OB: [06:54] 96 MPH GUST SGLI4 Glidden Ralston \_ Glidden  
LATEST OB: [06:54] 65/64 70MPH from NNW P: 01.25" RR: 00.00"



# WWW Resources

# Which website is which?

**IEM | School Network - Galeon**

File Edit View Tab Settings Go Bookmarks Tools Help

http://mesonet.agron.iastate.edu/schoolnet/

Google ke so long to run << Dictionary << Bookmarkslets

CSS IEM JPortfolio Login

redhat.com | F Re: GEMPAK IEM | School Portfolio Disc

**IEM** Iowa Environmental Mesonet  
Iowa State University Department of Agronomy

February 17 2003

Archive | Current | Climatology | IEM Sites | GIS | Info | Plotting | Quality Control

**School Network**

As the name implies, these automated weather stations are located at schools throughout the state. Currently, [KCCI-TV](#) (Des Moines, IA) and [KELO-TV](#) (Sioux Falls, SD) have graciously provided the IEM with the ability to process data from their observing networks. We are pursuing other TV stations, for their networks as well.

**School Network**  
Sampled: 3x / hour  
Reports: Continuously  
Stations: 47 (KCCI)  
Stations: 14 (KELO)  
[KCCI Locations](#)  
[KELO Locations](#)

Select Network: **SCHOOL NET 8** SchoolNet8 **KELOLAND LIVE DOPPLER** WeatherNet

**Current Data**

- [Current Conditions](#) (sortable)
- [Where's it raining?](#)
- [GIS READY!GIS Shapefile](#)

**Station Plots**

- [20 Min Mesonet \[SchoolNet\]](#)
- [Rapid Update every Minute](#)
- [Zoomed in on Des Moines](#)
- [Solar Radiation](#)
- Barometer: [millibar](#) or [inches](#)
- [Visible Satellite Overlay](#)
- [Des Moines NEXRAD Overlay \[Loop\]](#)

**Historical Data**

- [Download](#) from the archive!

**Daily Precipitation Totals**

[Today](#) [Yesterday](#) [Feb 15](#) [Feb 14](#) [Feb 13](#)  
[Feb 12](#) [Feb 11](#) [Feb 10](#)  
[This Month](#)

**Previous Months:**  
[April 2002](#) [May 2002](#) [June 2002](#) [July 2002](#) [August 2002](#) [September 2002](#) [October 2002](#)

**QC Info**

- [Stations Offline \[Graphical View\]](#)

**Plotting Time Series**

http://mesonet.agron.iastate.edu/schoolnet/totals/0204\_pmon.gif

**Netscape: TheIowaChannel.com - School Net 8**

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Netsite: http://www.theiowachannel.com/schoolnet8/ What's Related

Red Hat Network Support Shop Products Training

**THEIOWACHANNEL.COM**  
IOWA'S NEWS LEADER

**WEATHER**

Auto Career Travel Law House & Home Shopping Yellow Pages

Home News Weather Sports Ames Livelin Politics Health Money Tech Entertainment KCCI

Education Dating Weddings Real Estate Family Food

**SCHOOL NET 8** IN PARTNERSHIP WITH: **CIPCO**  
LIVE SUPER DOPPLER CENTRAL IOWA POWER COOPERATIVE

Home Current Conditions Charts/Plots Download Info

Welcome to the KCCI SchoolNet8 website sponsored by [CIPCO](#) and it's member cooperatives!

- [Current Conditions](#)  
Live SchoolNet8 data from your site or all sites in the network!
- [Charts/Plots](#)  
View data time series plots. Meteorological plots. Precip totals and more...
- [Download](#)  
Download historical SchoolNet8 observations from the archive.
- [Information](#)  
SchoolNet8 Site information. Information for site admins.

**What's New in February?**

With this new [dynamic plotting](#) application you can select the KCCI SchoolNet8 sites you want to plot and the data variable to plot. *And there is more!* You can dynamically limit the sites you monitor on the sortable [current conditions](#) page. Look for new features to appear on the KCCI SchoolNet8 website each month!

The KCCI SchoolNet8 is a collection of weather observing stations located at schools throughout Central Iowa that report **live** information via the Internet. While we make every effort to provide reliable and timely data, data presented at this website is provided as-is and without warranty.

The SchoolNet8 section of the KCCI website is hosted and designed by [The Iowa Environmental Mesonet](#) of [Iowa State University](#).

KCCI SchoolNet8 sponsored by: [CIPCO](#)  
WebSite powered by: [Iowa Environmental Mesonet](#)  
17 February 2003 02:55 PM

# IEM Tracker





# IEM Tracker

- System to record metadata about sites
- Most of you have probably gotten the emails from “Iowa Environ Mesonet”
- Since the system came online on 25 June 2002, it has generated over 6800 tickets
- Most of these tickets are generated from the automated data tracking system

# What are offline alerts?

- When 'online', your site is streaming observations to the Internet at roughly 6 obs per minute.
- A process on the IEM server monitors this feed and once the most recent ob is 30 minutes old, a trouble ticket is generated and site contacts are emailed.

# Understanding the Ticket.

| IEM TRACKER REPORT | New Ticket Generated: # 7002

---

Station Name : [IKV] - ANKENY

Status Change : [OFFLINE] Site is NOT reporting to the IEM

Last Observation : 2003-09-17 09:56:00.00

Other Currently 'Open' Tickets for this Site:

#	OPENED_ON	TICKET TITLE
---	-----------	--------------

--None--

Most Recently 'Closed' Trouble Tickets for this Site:

#	CLOSED_ON	TICKET TITLE
---	-----------	--------------

6653	2003-08-30 05 AM	Site Offline
------	------------------	--------------

6564	2003-08-28 07 AM	Site Offline
------	------------------	--------------

6400	2003-08-22 12 PM	Site Offline
------	------------------	--------------

6354	2003-08-22 06 AM	Site Offline
------	------------------	--------------

5850	2003-08-16 05 AM	Site Offline
------	------------------	--------------

# More about the tickets

- Probably 50% of the tickets are network related and out of your hands.
- 5% of the tickets are responded to with further information
- IEM tracker has improved network performance for each of the networks it monitors.

# Trouble Ticket Stats

- Fewest Tickets
  - 3 Bedford
  - 4 NW Webster
  - 8 Iowa Christian
- Highest Online %
  - Jefferson
  - NW Webster
  - Afton
- Most Tickets
  - 75 Colo
  - 63 Mount Ayr
  - 59 Panora
- Lowest Online %
  - Pella
  - Leon
  - Clarion

NEVADA: 12 tickets totaling 4 days of offline time (#8 best)

# Keep those clocks set!

- Data on the IEM website is given a timestamp of the current IEM system clock and **NOT** the timestamp on the observation.
- The precipitation counters are adversely impacted by drifting clocks.
- It makes it a bit more difficult to calculate daily precipitation totals.

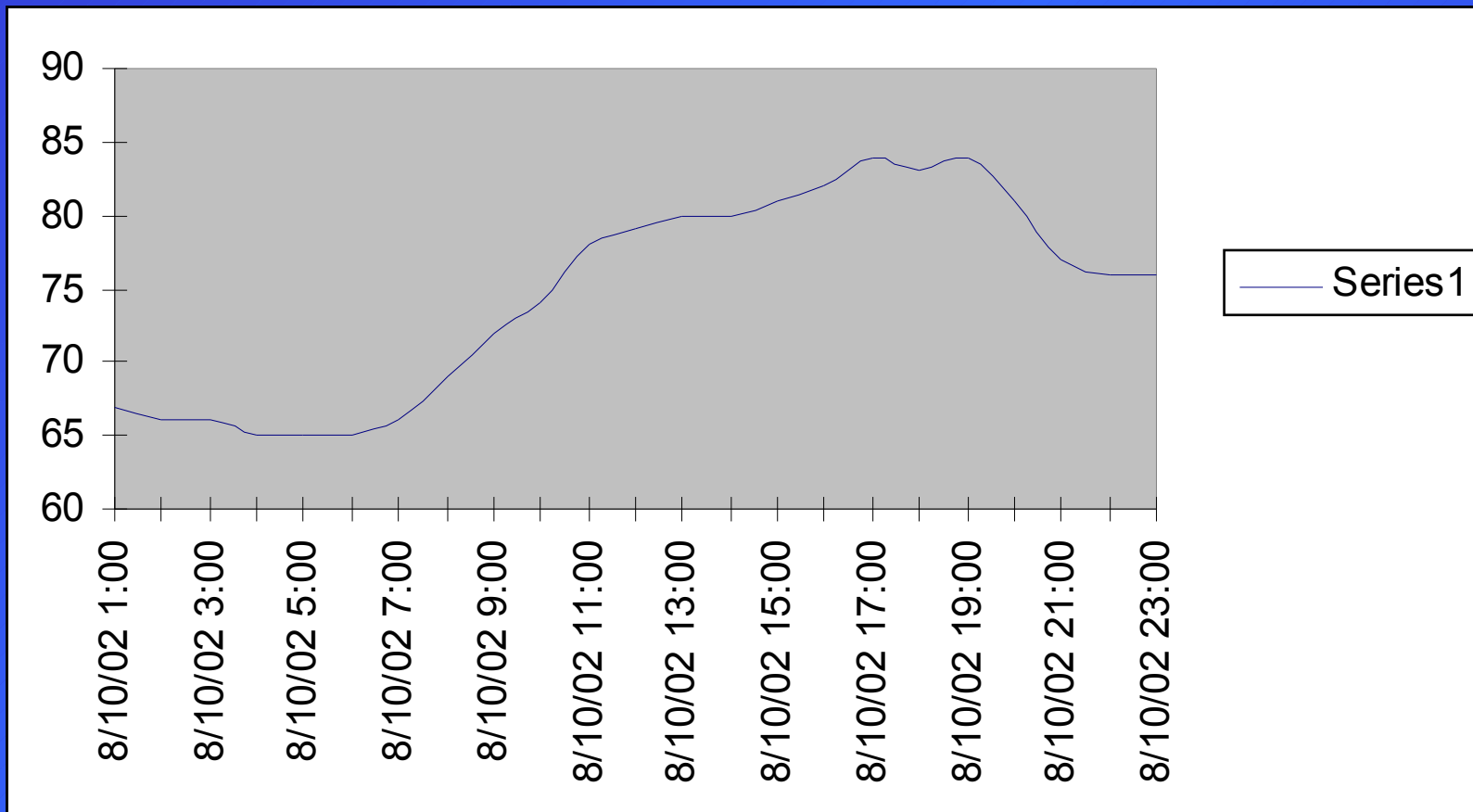
# Download Data Archive

# Data Archives

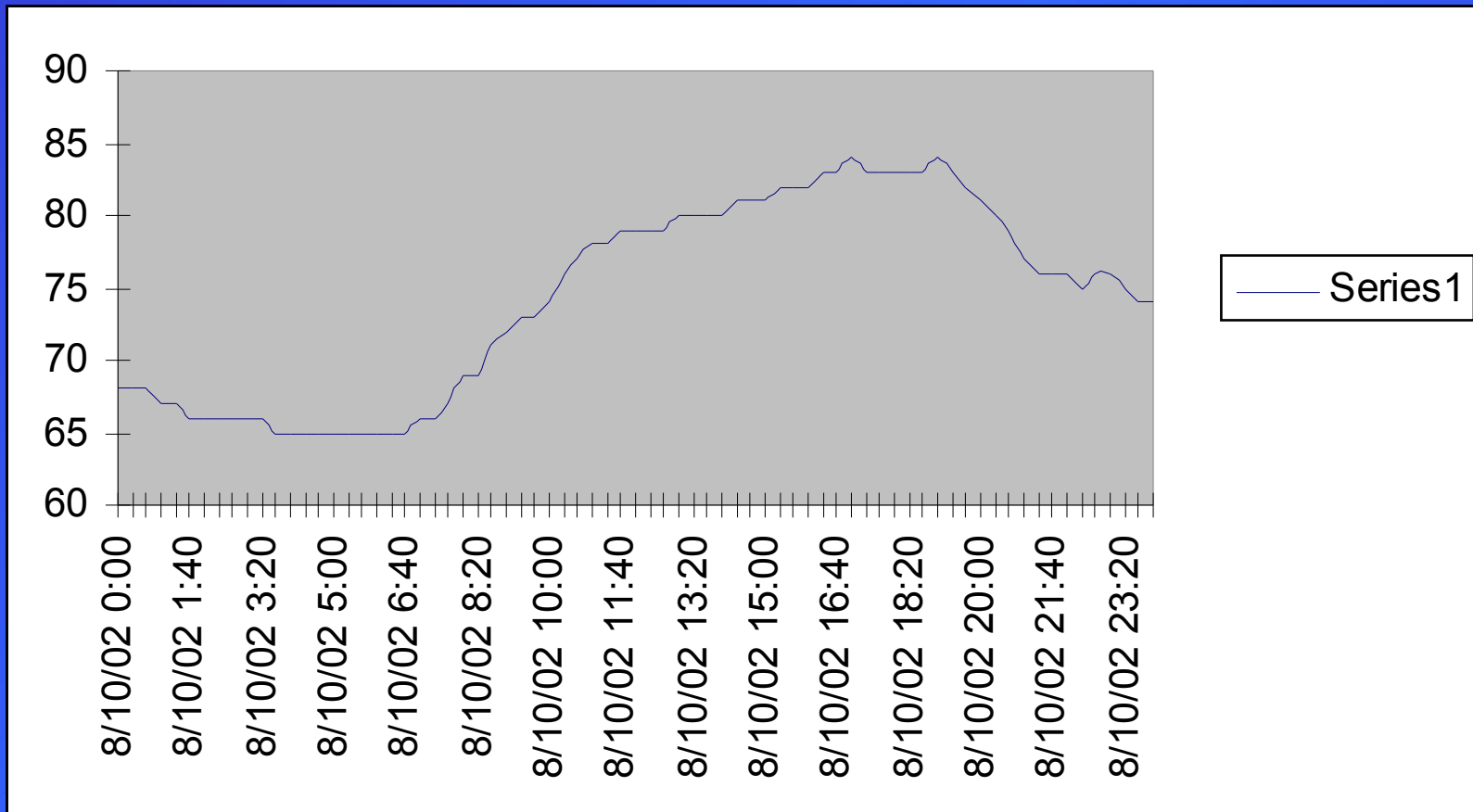
- 1 minute data archive exists since 14 Feb 2002, this is available on-line
- Since 10 Jul 2002, every observation is archived, but not readily available
- Quickly accessible summary data is coming soon.



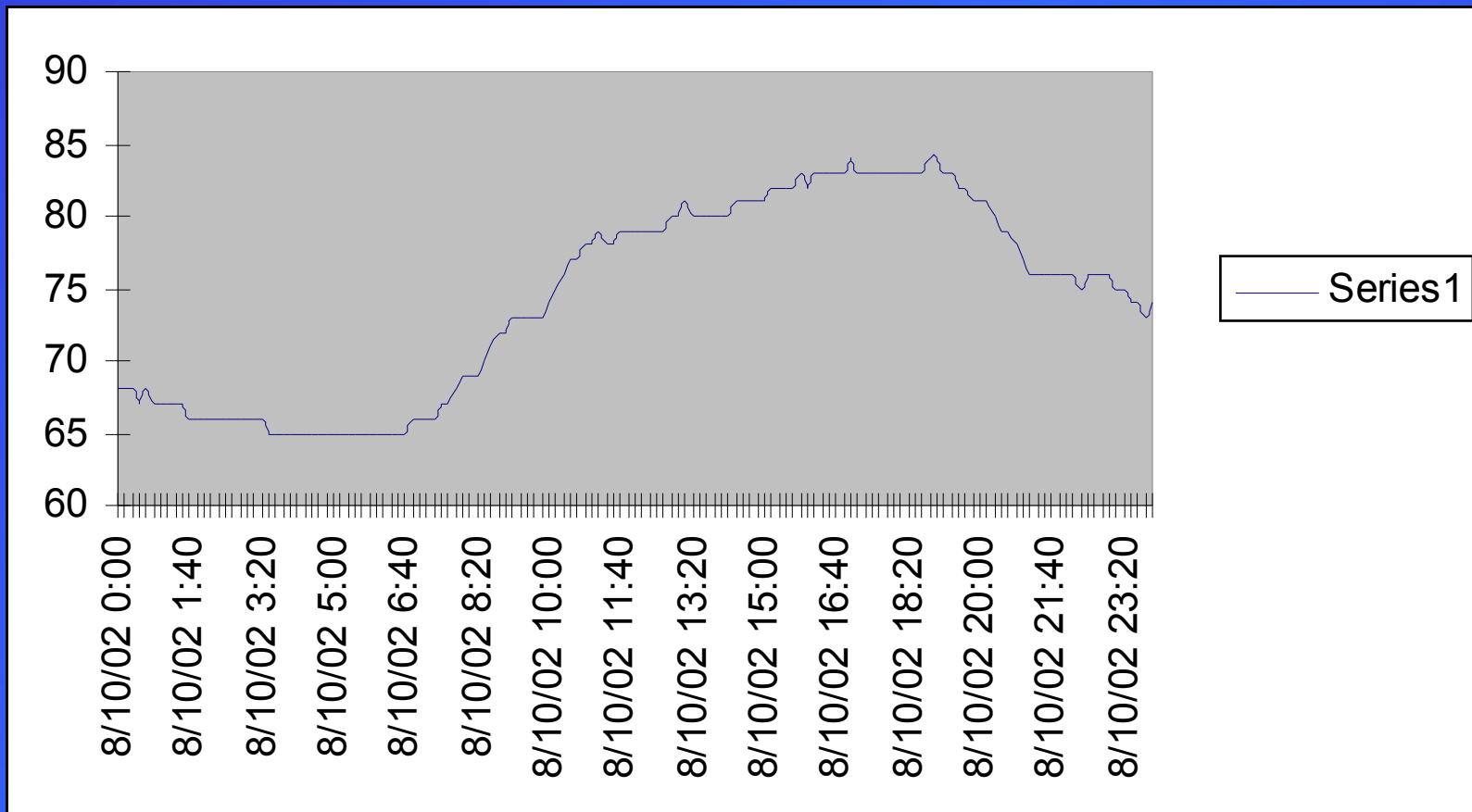
# Hourly temperatures



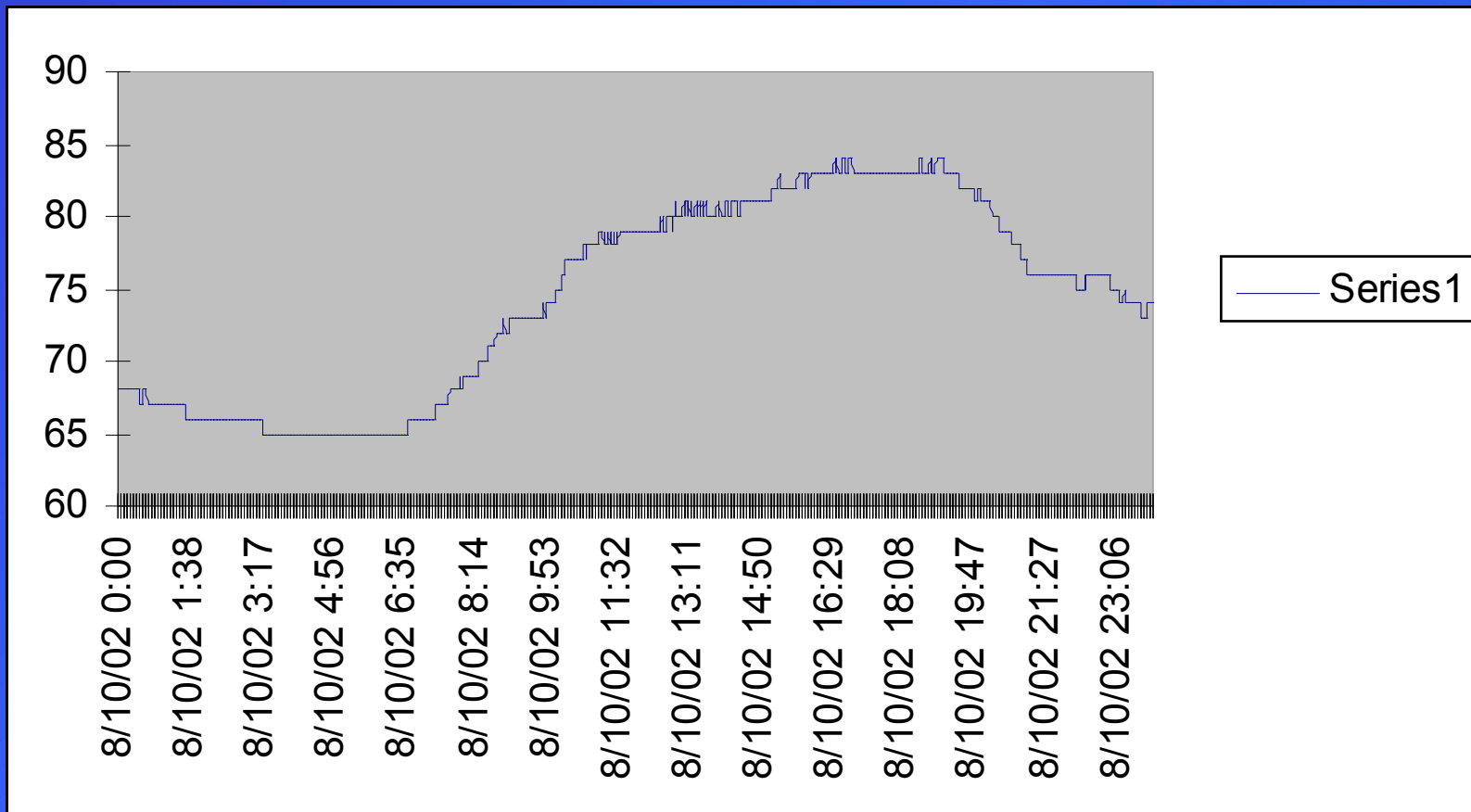
# 20 minute temperatures



# 10 minute temperatures

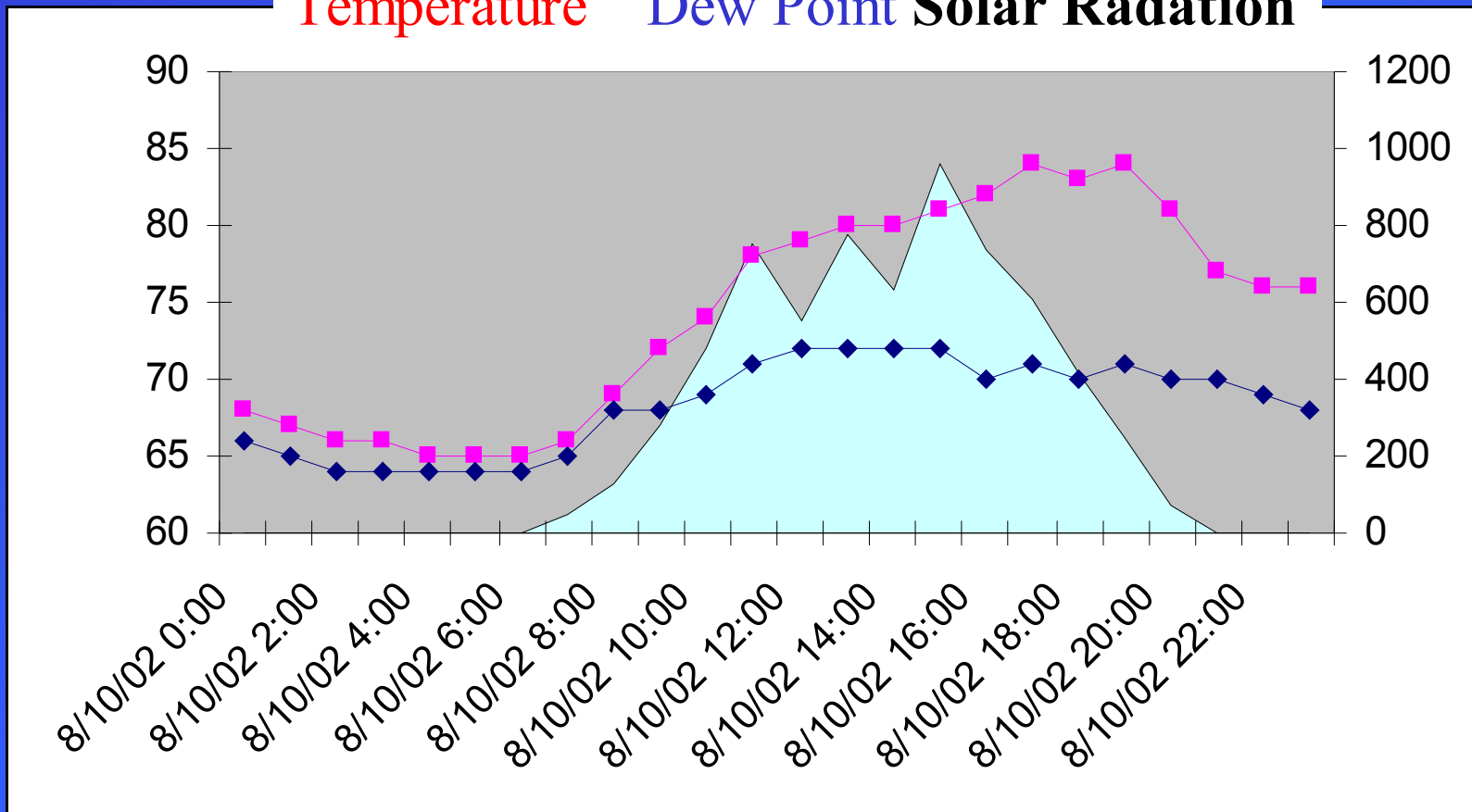


# 1 minute temperatures



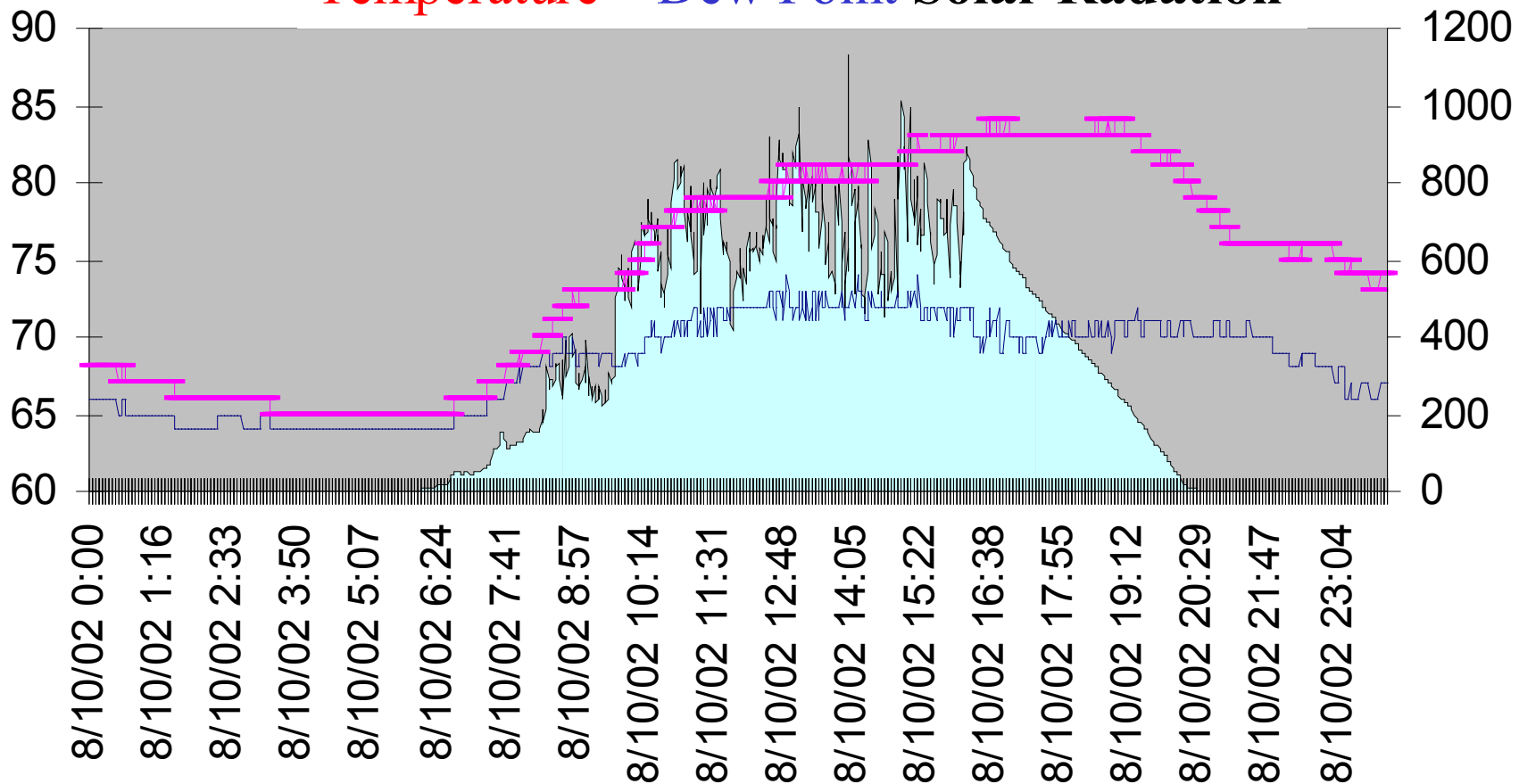
# Hourly data

Temperature Dew Point Solar Radation



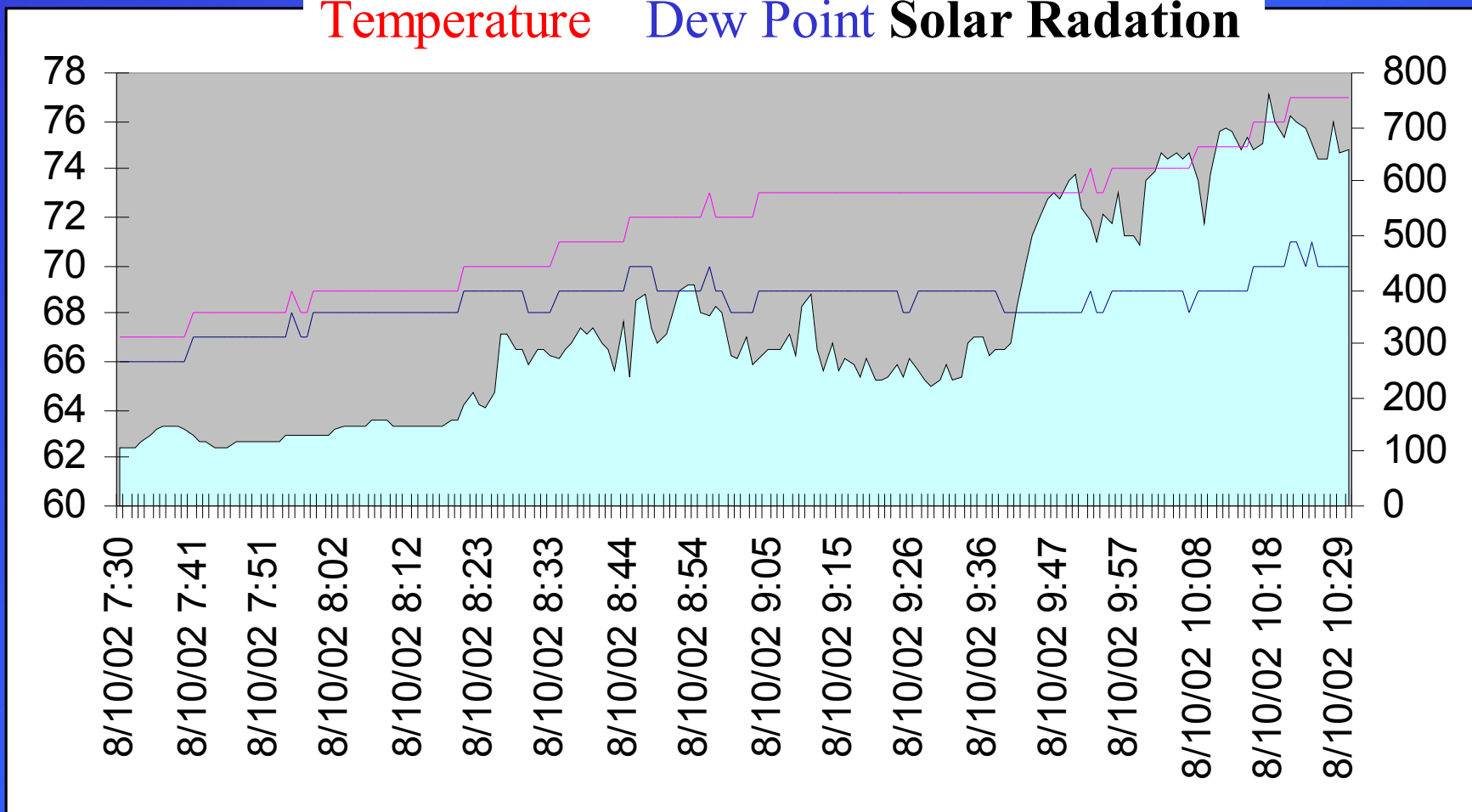
# Minute Data

Temperature Dew Point Solar Radation



# 1 minute data!

Temperature Dew Point Solar Radation

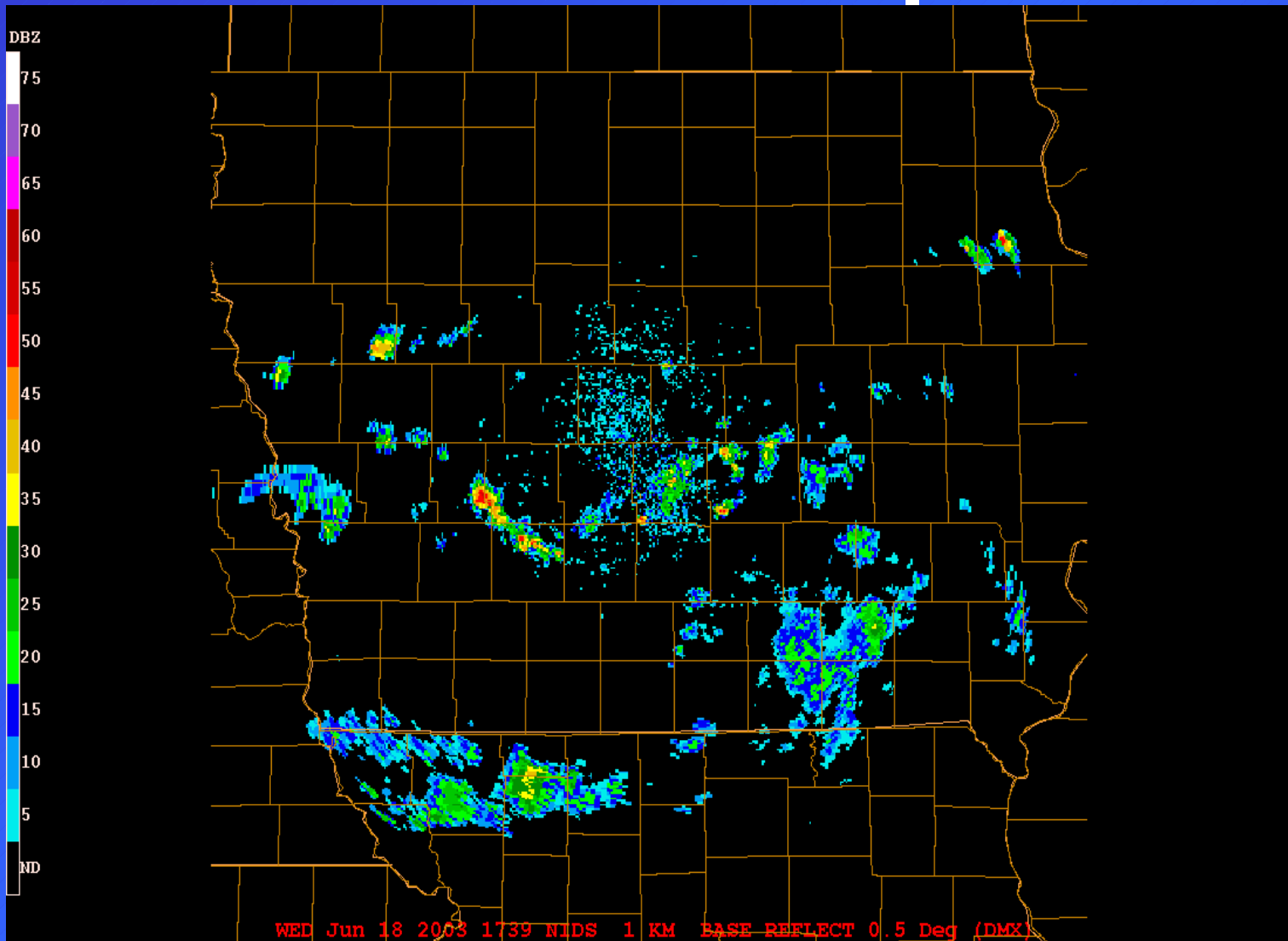


# 18 June 2003: Nevada SchoolNet

- A good example of how data from your school can make a difference in your community.



# RADAR Loop



# At 1:34 PM, an alert is generated

=====  
KCCI SchoolNet8 Wind Gust Alert  
-----

Time: 01:34 pm -- 18 June 2003

Site: NEVADA COMMUN

Gust: 58 MPH

# At 1:37 PM, the NWS warns

137 PM CDT WED JUN 18 2003

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A

\* SEVERE THUNDERSTORM WARNING FOR...  
EASTERN STORY COUNTY IN CENTRAL IOWA

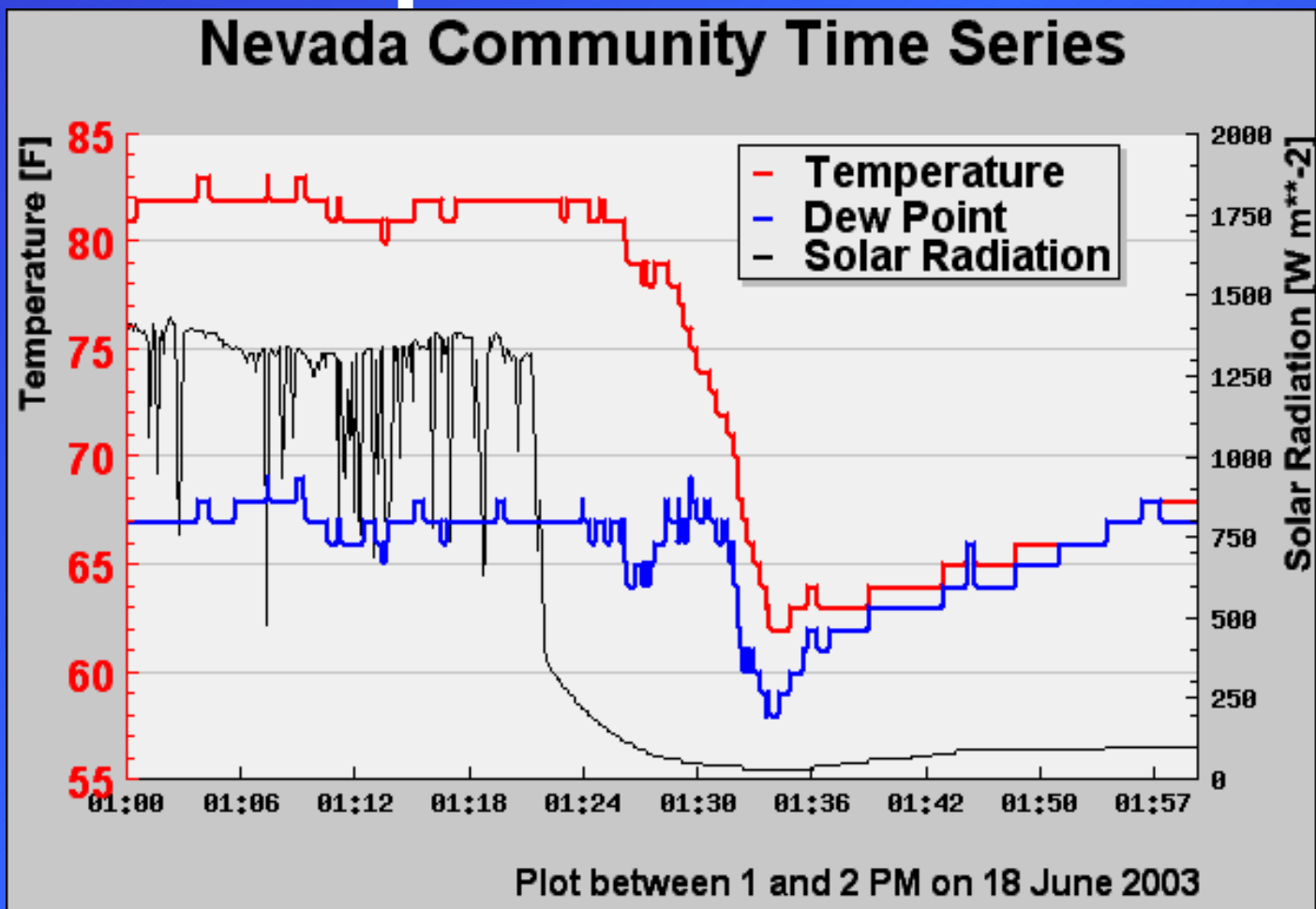
\* UNTIL 230 PM CDT

7 MILES WEST OF COLLINS AROUND 150 PM AND  
NEAR MAXWELL AROUND 155 PM.

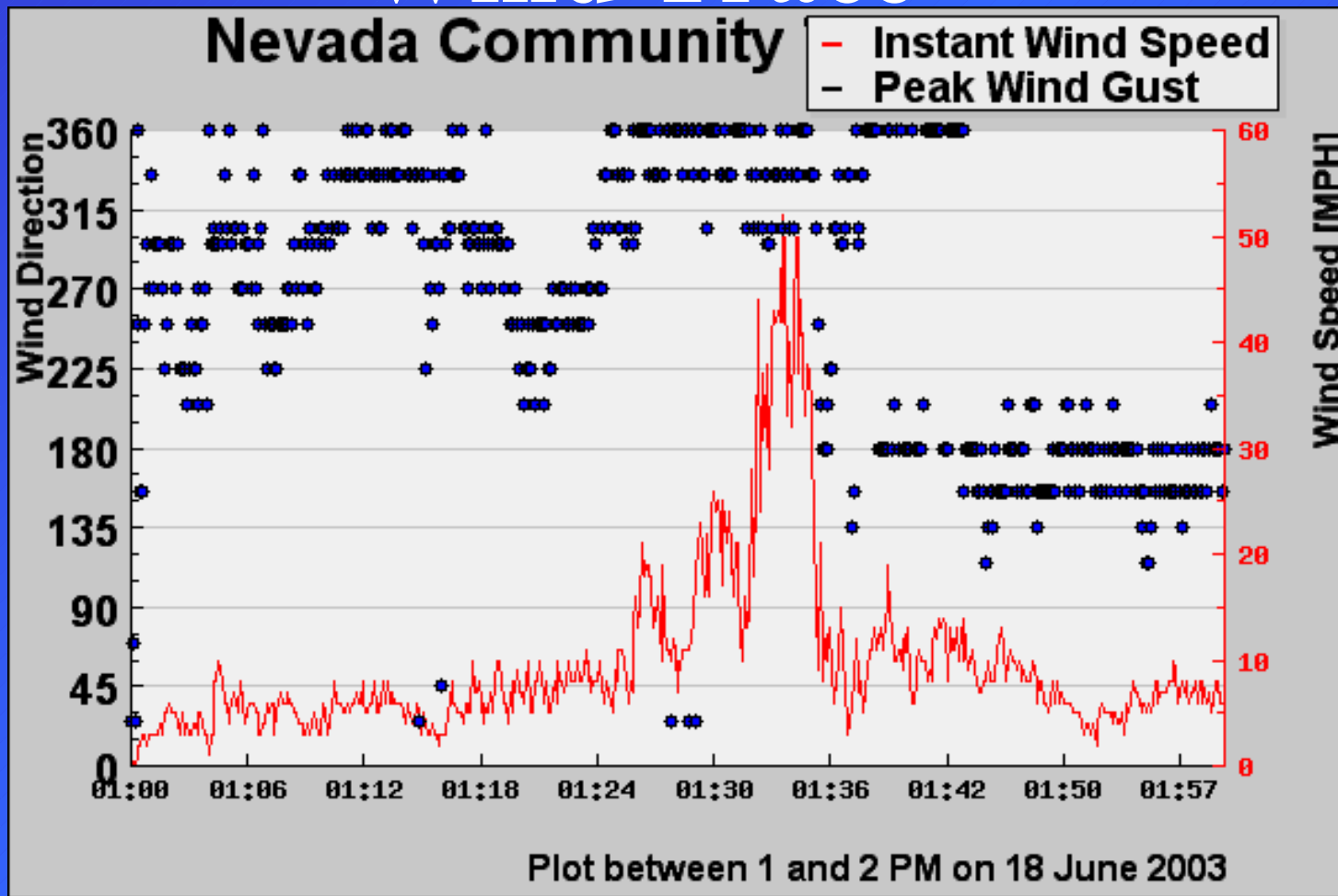
DAMAGING WINDS OF 60 TO 70 MILES AN HOUR ARE LIKELY IN THE WARNED  
AREA. THE KCCI SCHOOLNET SITE IN NEVADA REPORTED 58 MPH WINDS AT 134  
PM.

# Temperature Trace

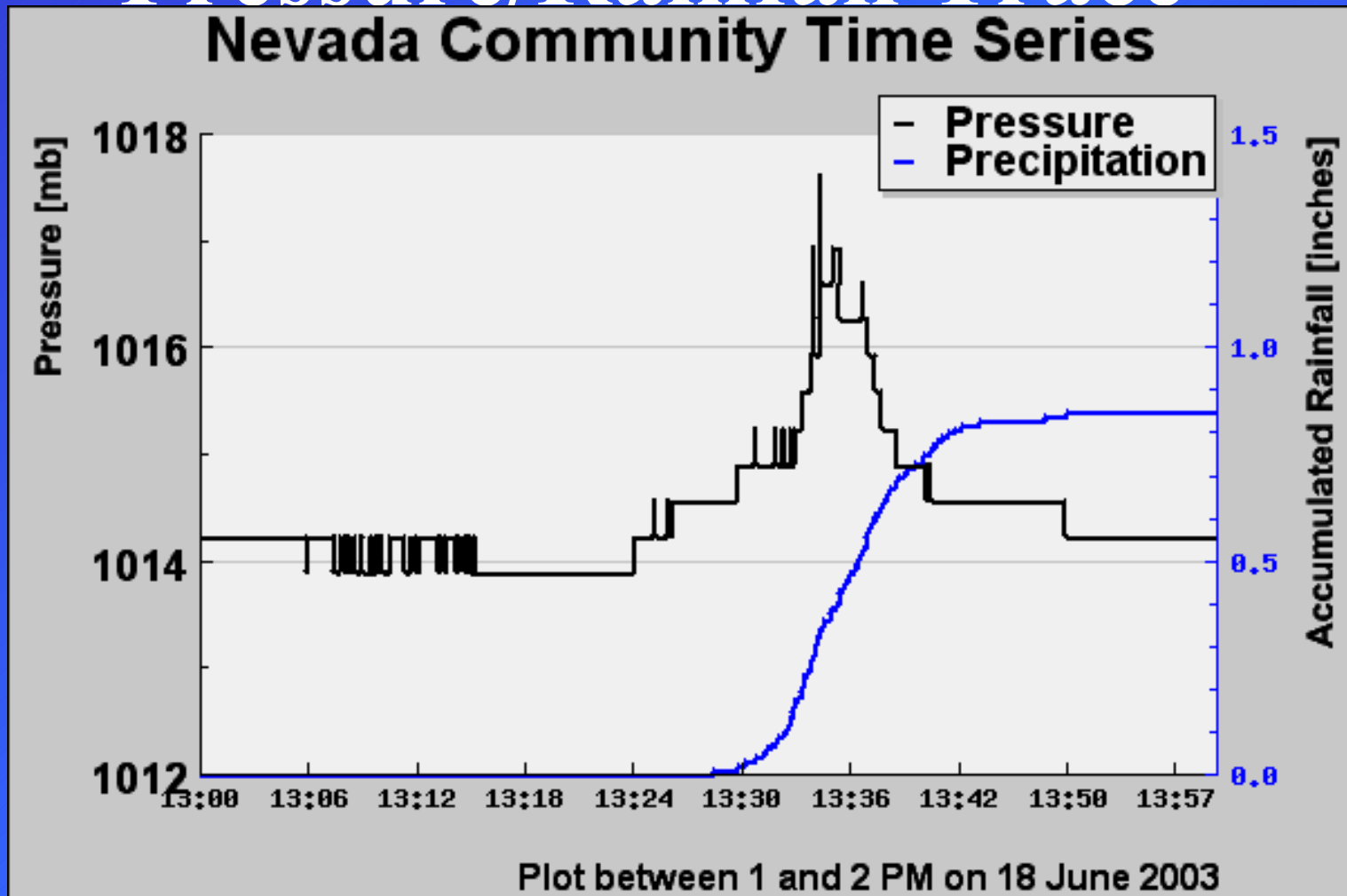
## Nevada Community Time Series



# Wind Trace



# Pressure/Rainfall Trace



# Questions?



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