

KCCI SchoolNet8 Workshop

Daryl Herzmann

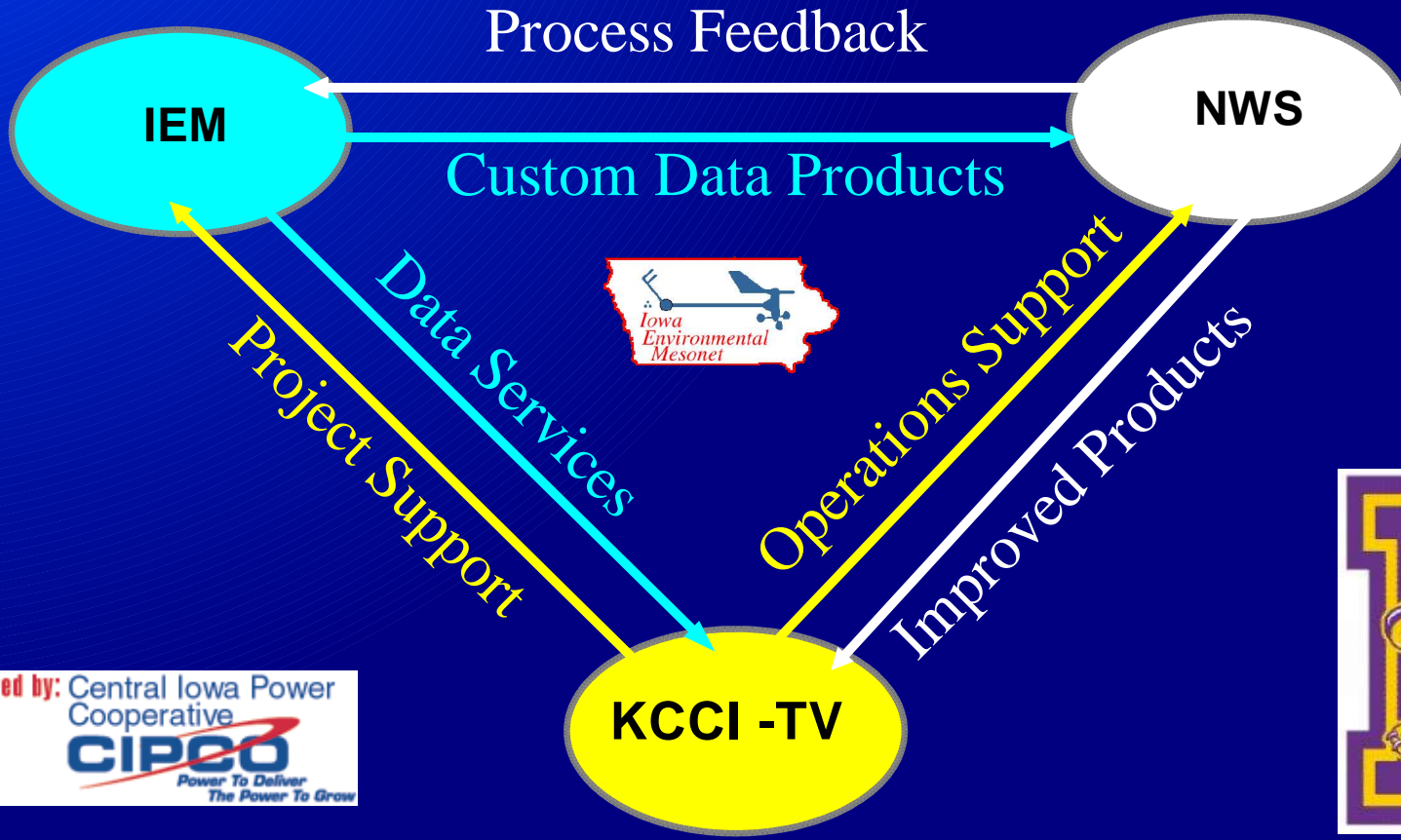
Iowa Environmental Mesonet

Iowa State University

The Rundown

- CIPCO/IEM/KCCI/NWS partnership
- Who is using your data?
- IEM Tracker (a.k.a. spam generator)
- Downloading Data
- Website Demo
- Java Viewer Demo

Our Partnership



<http://kcci.mesonet.agron.iastate.edu>



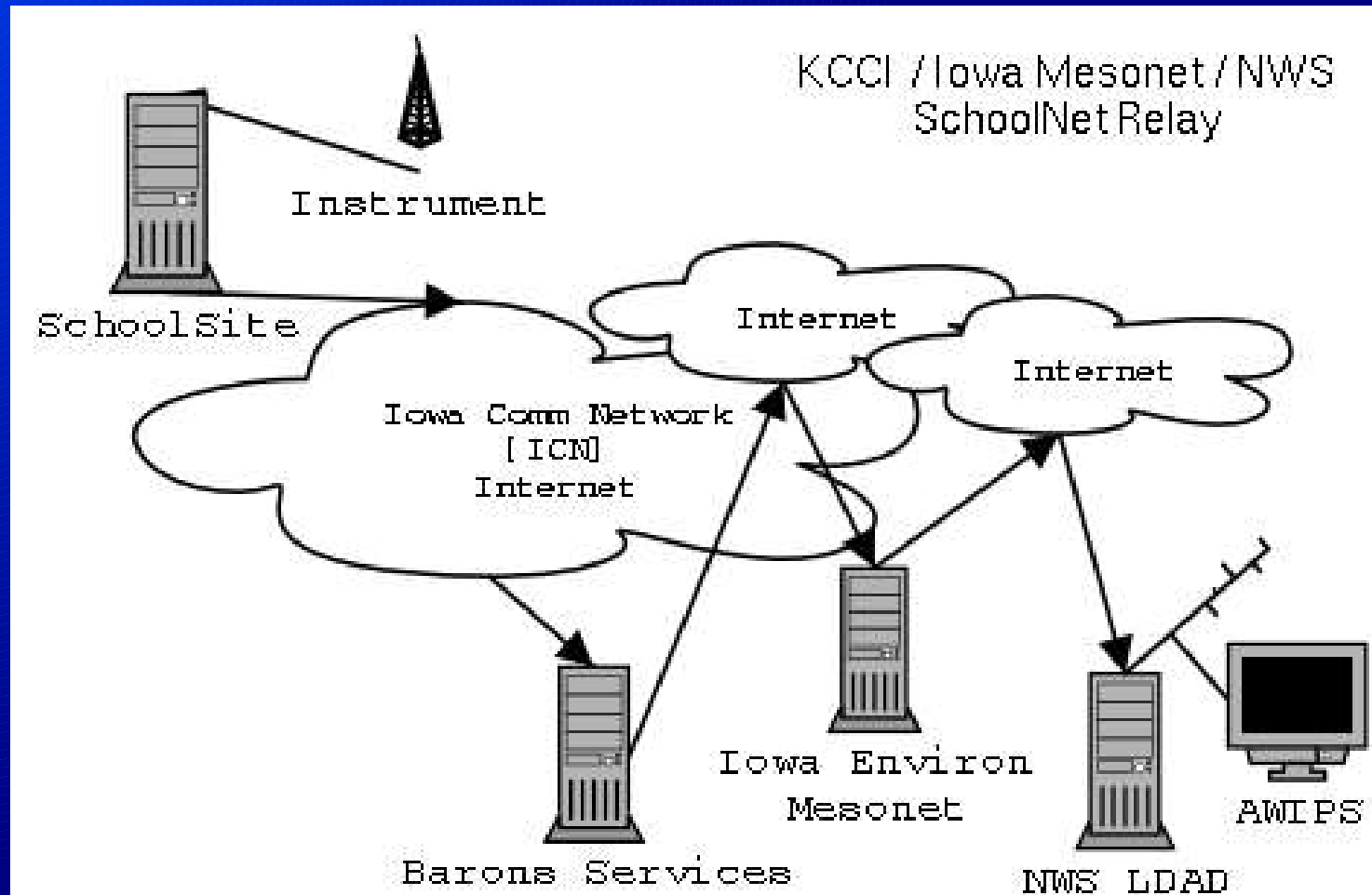
Iowa Environmental Mesonet 411

- 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, soon you will all be asleep.
- Abbreviated 'IEM'

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 is one of the many networks that send data to us.

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

SHEF

.B DMX 0221 C DH22/TA/PPH/PPT/PPQRS/PPDRS/PCIRP

SADI4 35 / 0.00 / 0.00 / 0.00 / 0.00 / 0.68

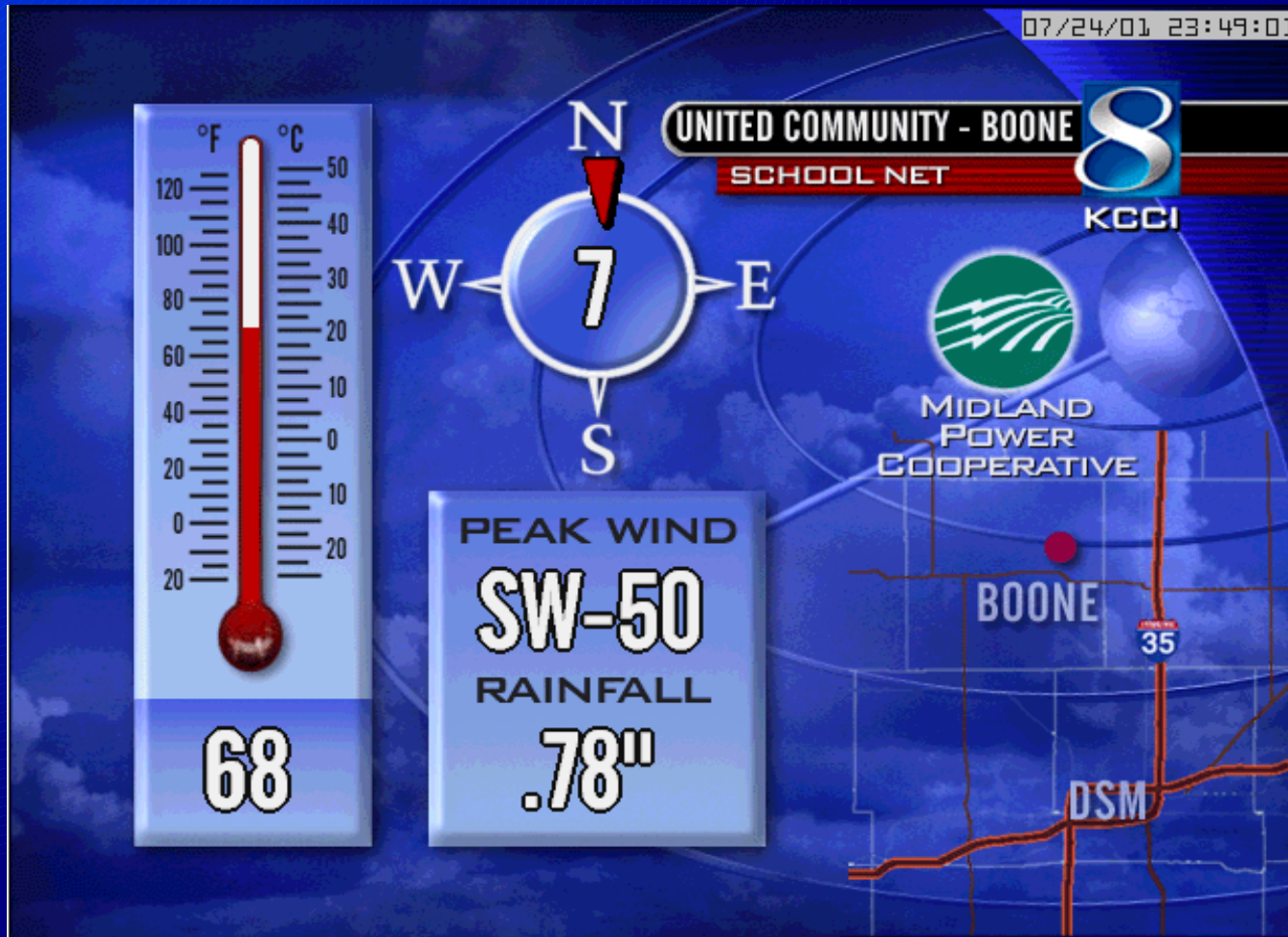
SchoolNet8 Data Users



<http://kcci.mesonet.agron.iastate.edu>



KCCI uses it!



SchoolNet8 Data Users

- Storm Prediction Center [SPC]
 - Norman, Oklahoma
 - In charge of providing **timely** forecasts of extreme weather.
 - Use schoolNet8 data to help 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 operational weather forecasting models run in D.C.

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.

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 TTAai CCCC: AWIPS ID:

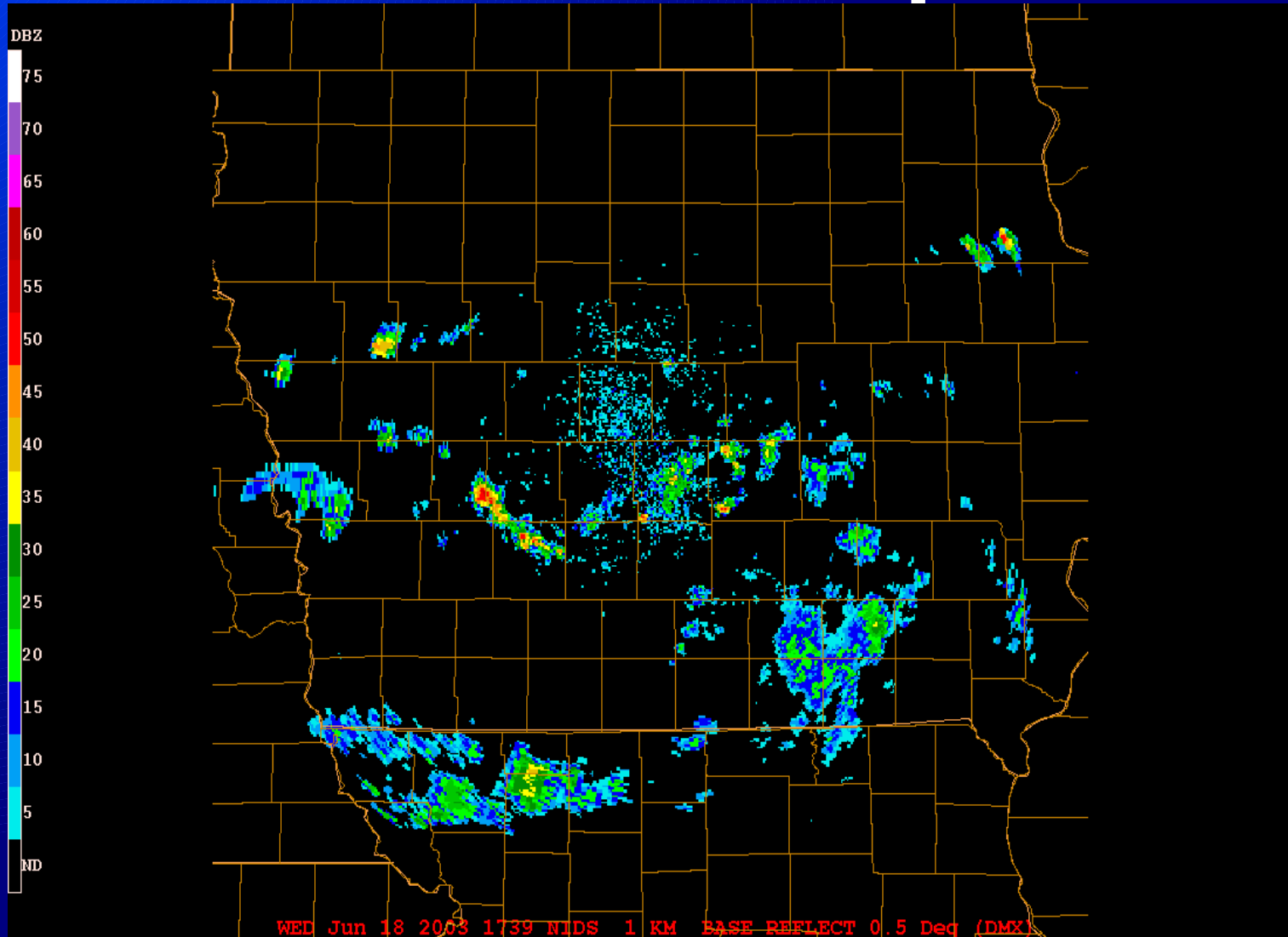
KCCI SNET OB: [06:54] 96 MPH GUST SGLI4 Glidden Ralston _ Glidden
LATEST OB: [06:54] 65/64 70MPH from NNW P: 01.25" RR: 00.00"



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

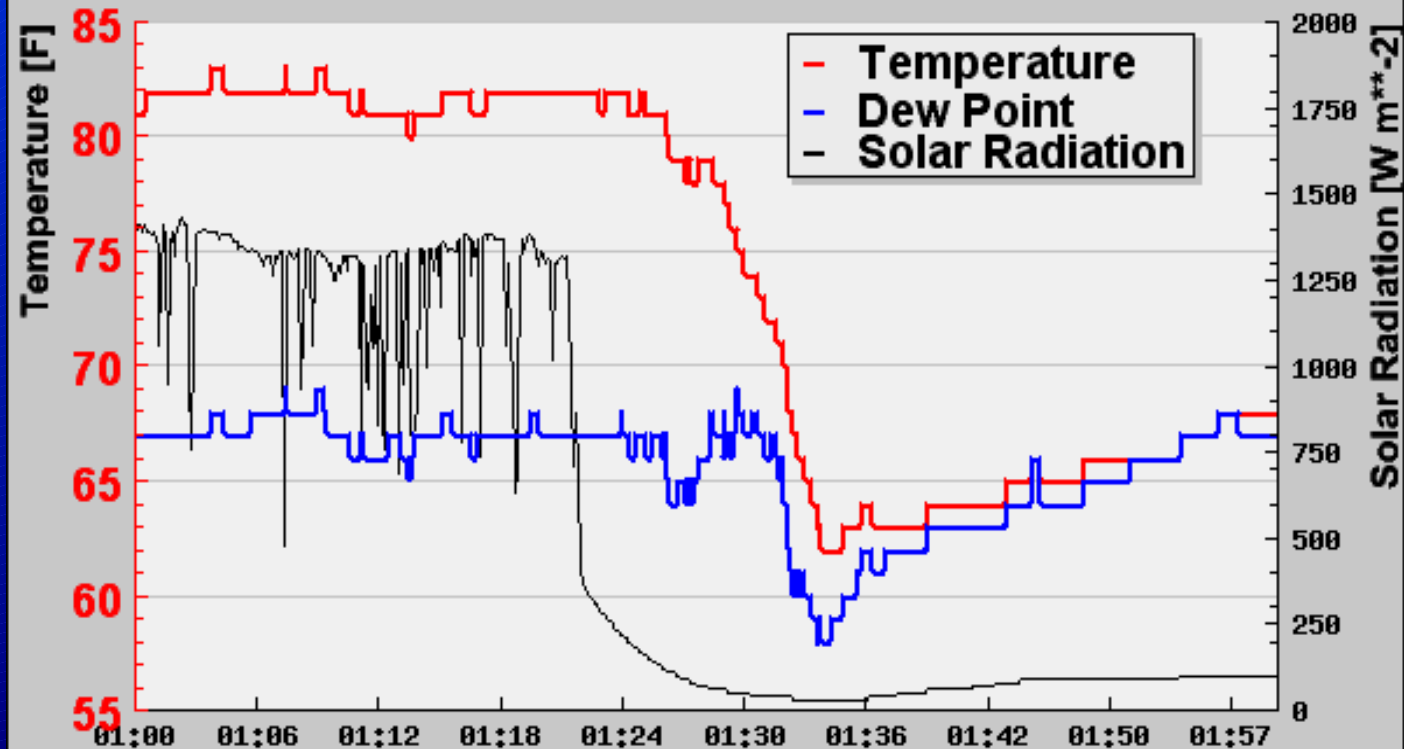
* UNTIL 230 PM CDT

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.

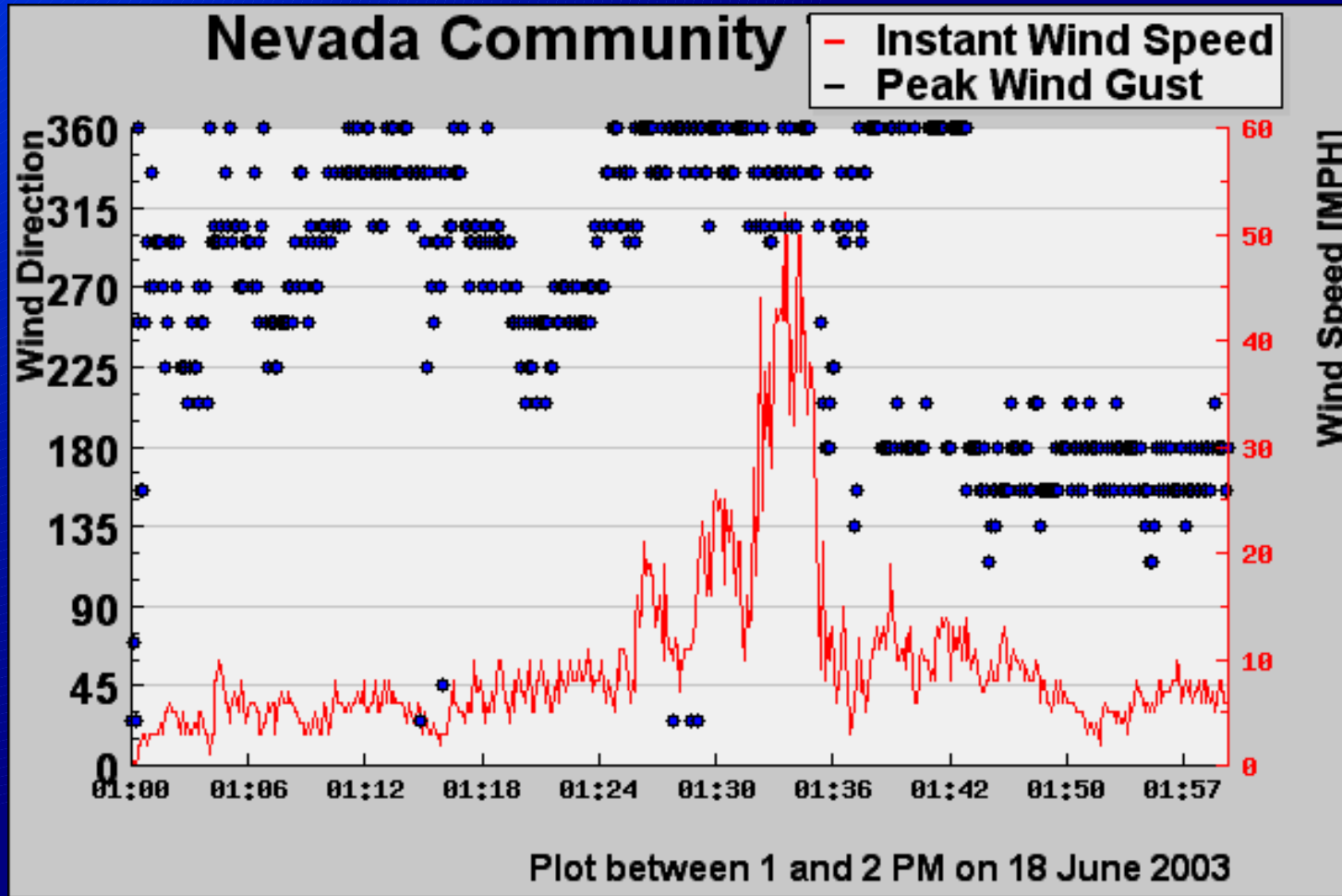
Temperature Trace

Nevada Community Time Series

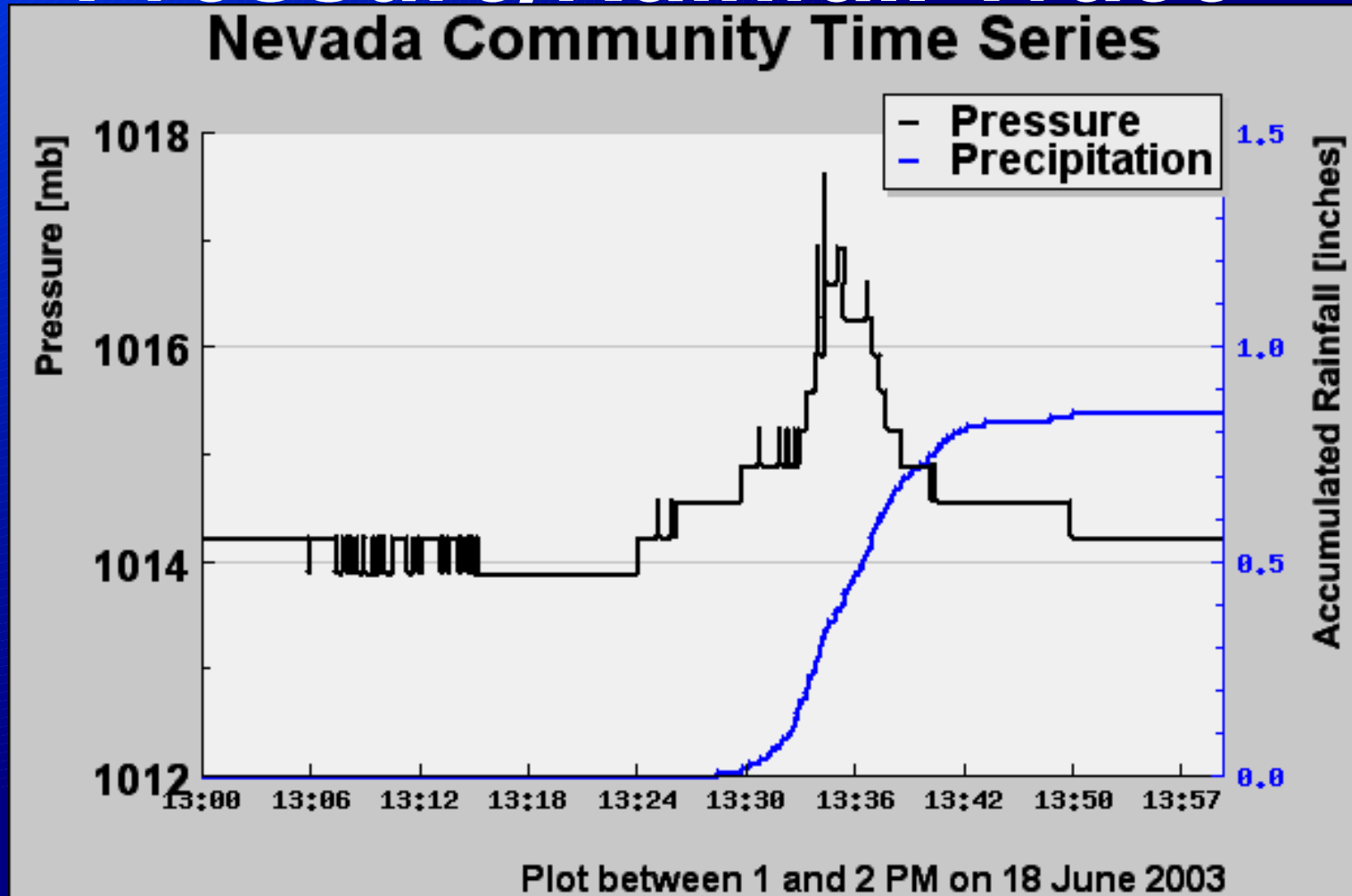


Plot between 1 and 2 PM on 18 June 2003

Wind Trace



Pressure/Rainfall Trace



IEM Tracker

IEM Tracker

- System to manage 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 11,000 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 ***

ID : SCOI4

Station Name : COLO ELEM _ COLO

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

Trouble Ticket# : 3704

Last Observation : 2003-02-17 23:53:00.00

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.

SchoolNet8 Performance

- Fewest Tickets
 - 5 Bedford
 - 5 Bloomfield
 - 10 NW Webster
- Highest Online %
 - 93 Jefferson
Scranton
 - 92 Afton
 - 92 River Woods DSM
- Most Tickets
 - 89 Colo
 - 88 Adel
 - 70 Panora
- Lowest Online %
 - 61 Clarion
 - 69 Murray
 - 73 Pella

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.

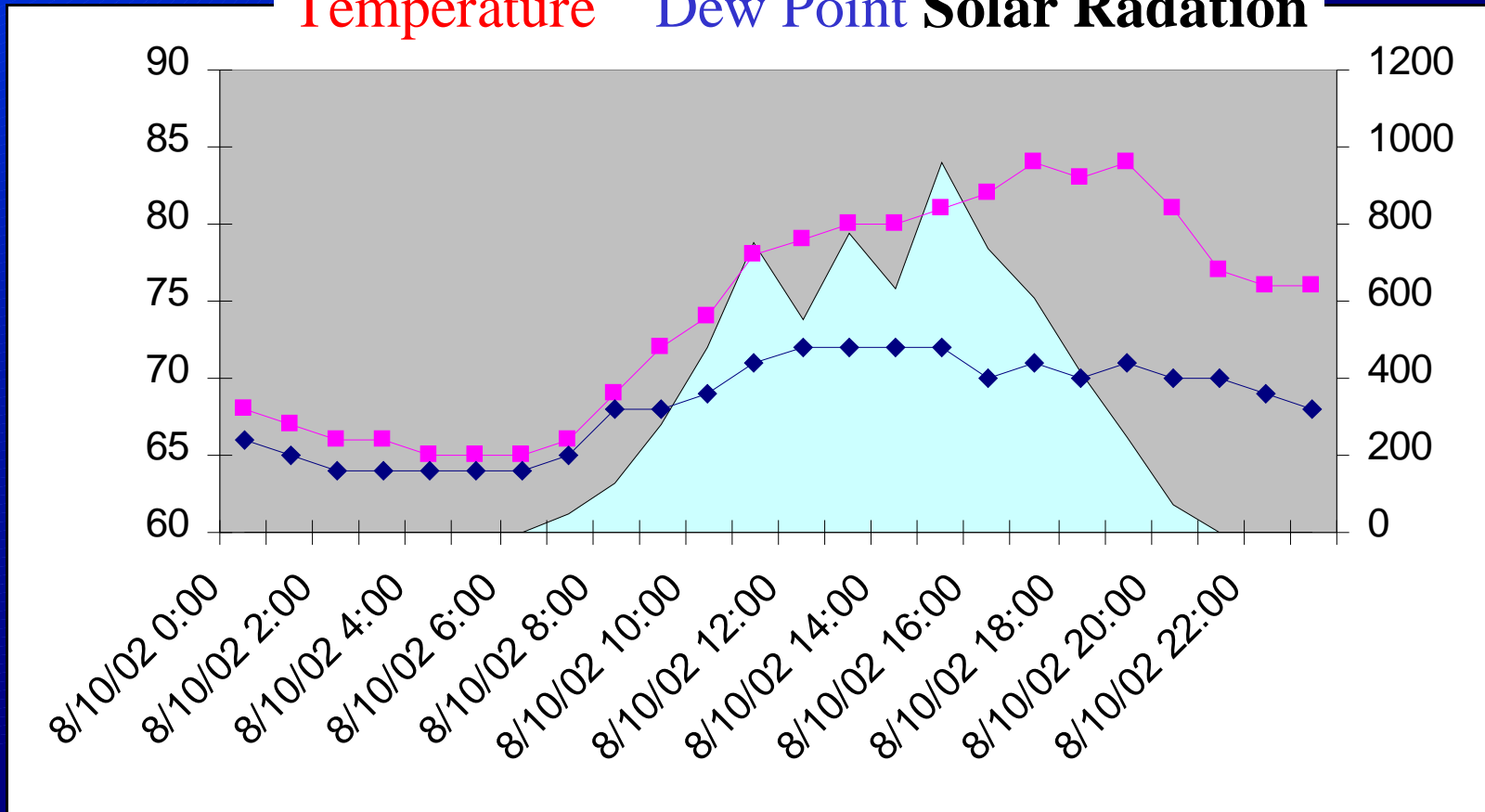
Download Data Archive

Data Archives

- 1 minute data archive exists since 12 Feb 2002, this is available on-line
- Since 10 Jul 2002, every observation is archived, but not readily available. I can fill these data requests if you send me an email.

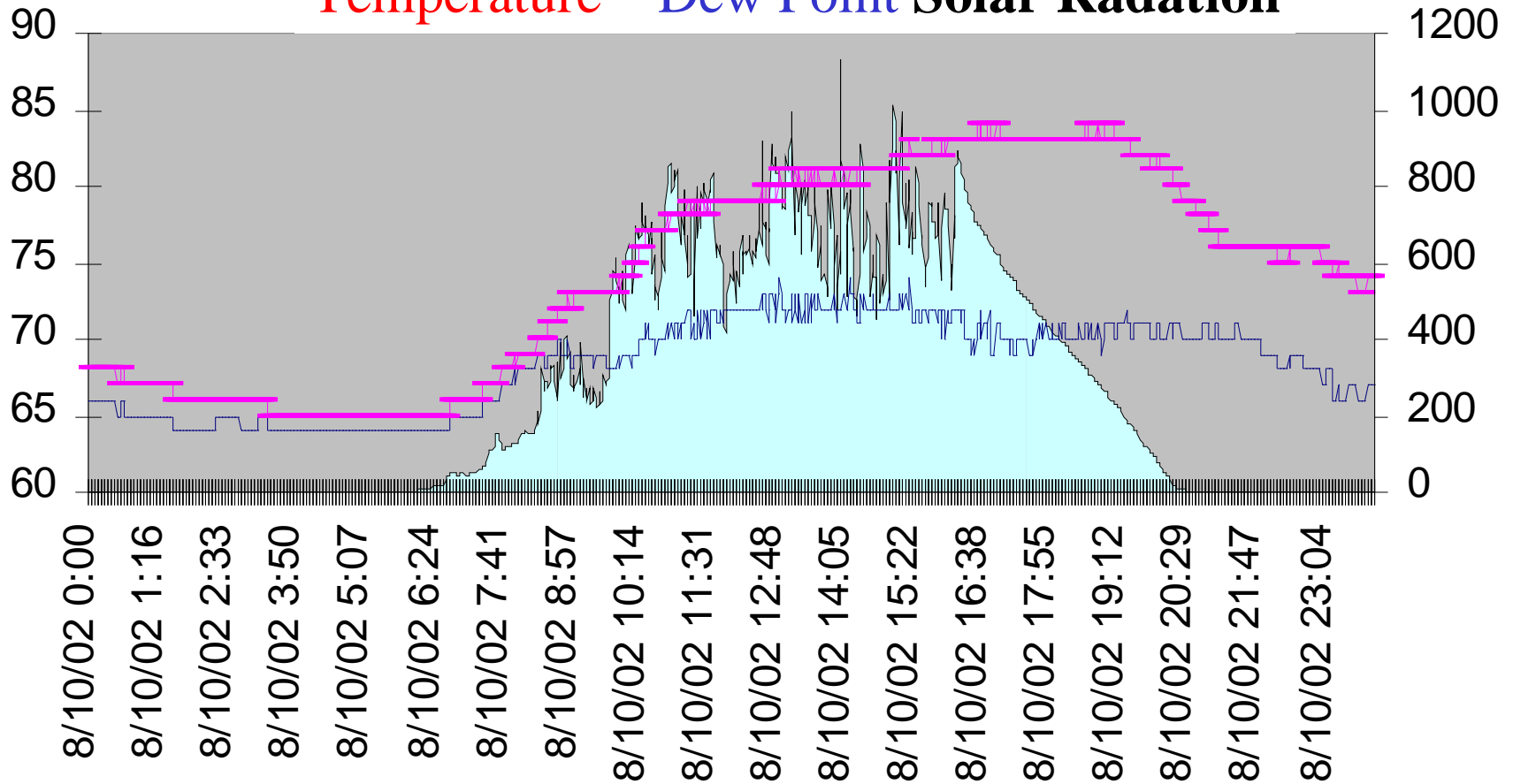
Hourly data

Temperature Dew Point Solar Radation



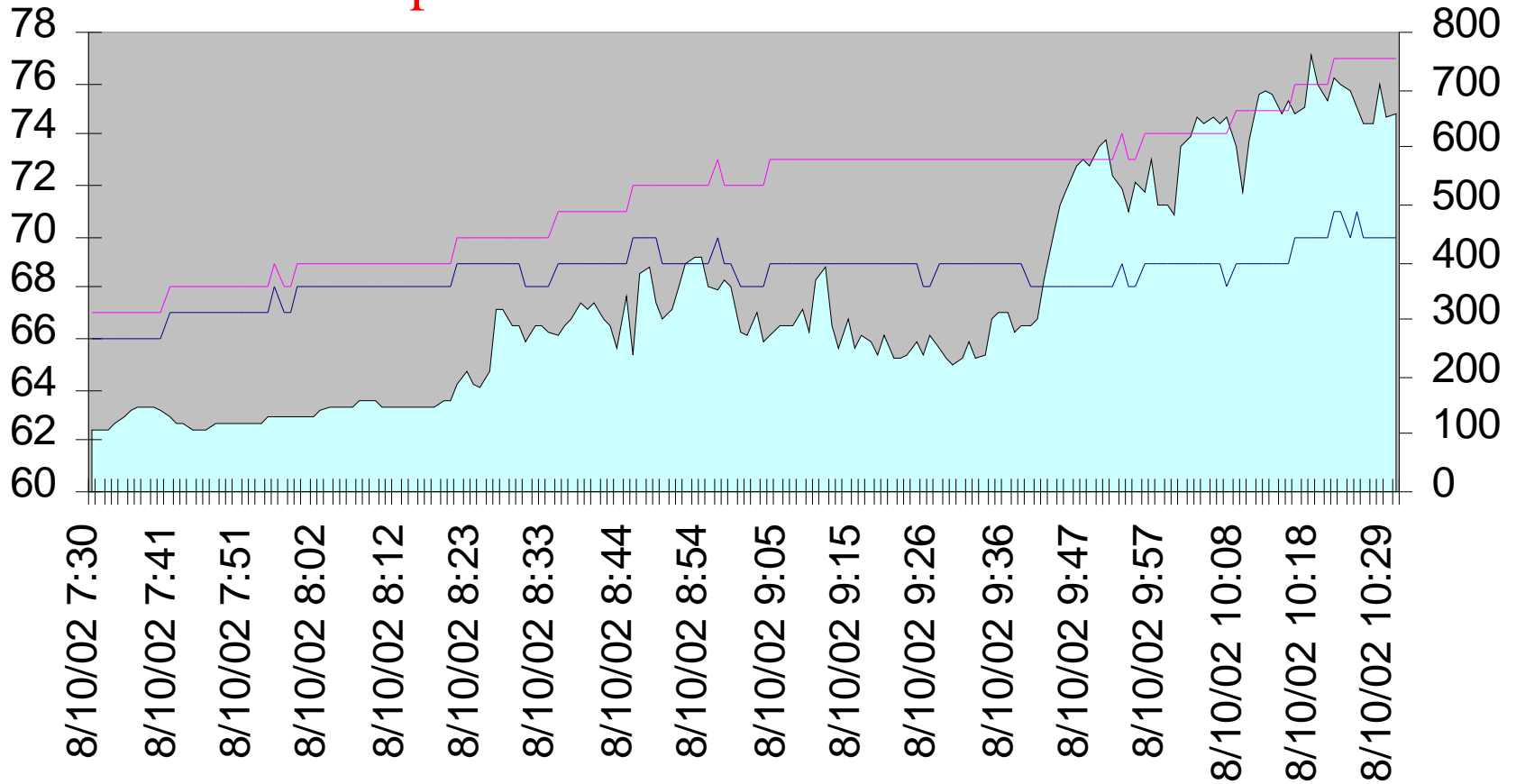
Minute Data

Temperature Dew Point Solar Radation



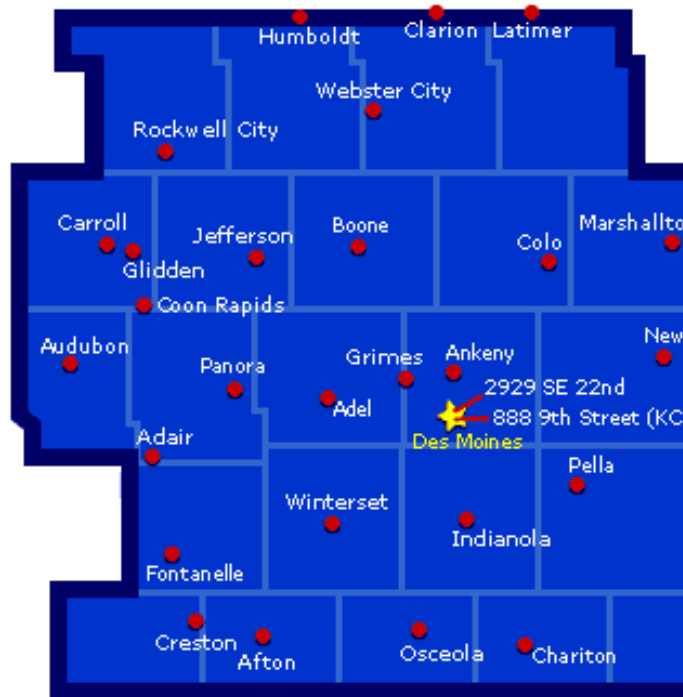
10 second data!

Temperature Dew Point Solar Radation



WWW Resources

Circa 2001



Real-Time School Net Information

Emerson Elementary/Indianola

Time	01/09/02 21:37
Temperature	45 F
Humidity	63%
Dew Point	33 F
Wind	W-6
Pressure	29.93
Solar	0
Feels Like	42 F
Rain for the day	0.00
Rain for the month	0.00
Rain Rate	0.00
High Rain Rate	0.00
High Temperature	57 F
Low Temperature	44 F
High Humidity	63%
Low Humidity	46%
High Pressure	29.93
Low Pressure	29.71
High Wind	NW-19
Low Wind	Calm
High Solar	28

LIVE SUPER DOPPLER

SCHOOL NET 8

<http://kcci.mesonet.agron.iastate.edu>



Circa 2002

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

8 THEIOWACHANNEL.COM
KCCI IOWA'S NEWS LEADER WEATHER

Auto Career Travel Law House & Home Shopping Yellow Pages

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

Education Dating Weddings Real Estate Family Food

LIVE SUPER DOPPLER SCHOOL NET 8 IN PARTNERSHIP WITH: **CIPCO**
Power To Deliver The Power To Grow

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



<http://kcci.mesonet.agron.iastate.edu>



Circa 2003

File Edit View Web Go Bookmarks Tabs Help

http://fedora

Google Dictionary Bookmarkslets

CSS IEM JPortfolio Login

IEM | 1 Mini x KCCI Scho x


Support your SchoolNet8 station by clicking on the banner.

LIVE SUPER DOPPLER SCHOOL NET 8 IN PARTNERSHIP WITH: Midland Power Cooperative

Home Current Conditions Charts/Plots Download Info Site Guide

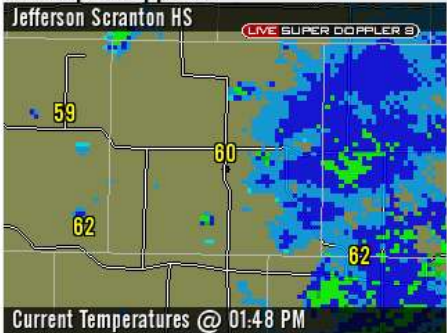
Live SchoolNet8 Information for Jefferson Scranton HS

Latest WebCam Still Image:



Jefferson Scranton WebCam Mon Sep 22 13:45:05 CDT 2003
Internet service by: Jefferson Telephone Co.

Live Super Doppler8:
Jefferson Scranton HS



Current Temperatures @ 01:48 PM

Plot: Temperature Go

Done.

Real-Time School Net Information

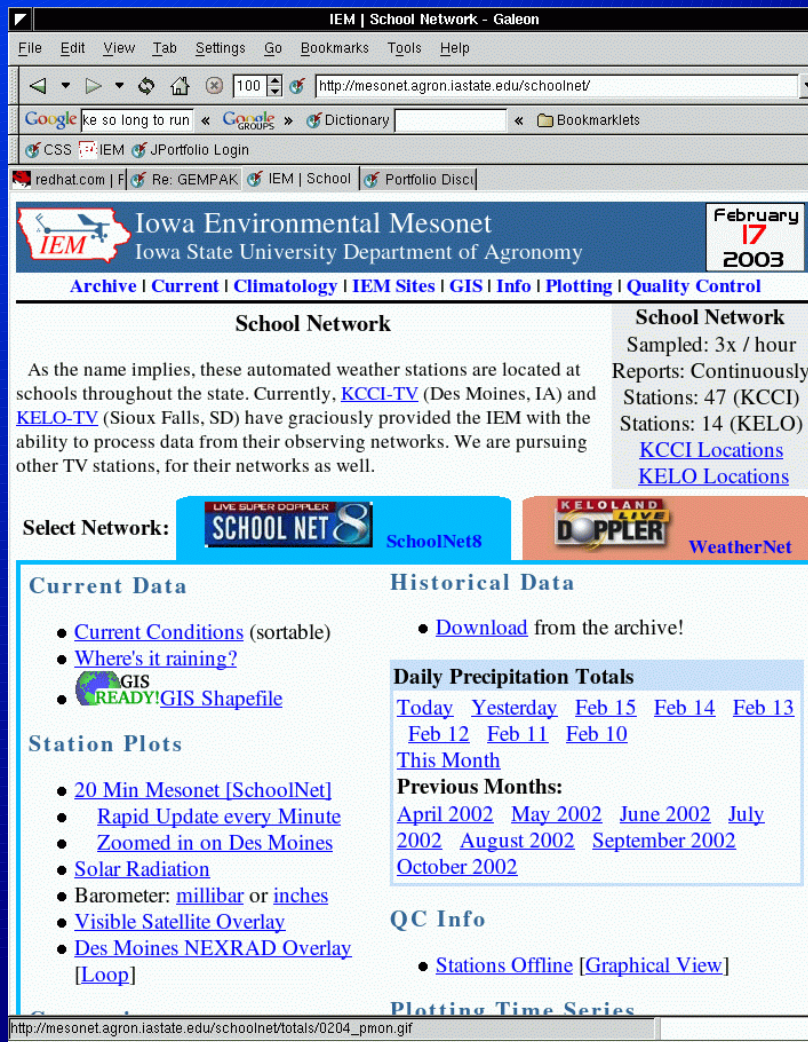
View: Jefferson Scranton HS

Compare Station Go!

-or- Select from map

Station	Jefferson Scranton HS
Date/Time	Sep 22 01:47 PM
Temperature	60 F
Relative Humidity	73 %
Dew Point	51 F
Wind	WNW @ 8 mph
Pressure	29.955
Solar	270 W/m ²
Feels Like	58 F
Rain for the Day	00.00 in
Rain for the Month	01.72 in
High Temperature	63 F
Low Temperature	50 F
High Humidity	100 %
Low Humidity	70 %
High Pressure	29.97"
Low Pressure	29.91"
High Wind	NW @ 21 mph
Low Wind	0 mph
High Solar	1000 W/m ²

Which website is which?



IEM | School Network - Galeon

File Edit View Tab Settings Go Bookmarks Tools Help

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

Google IEM JPortfolio Login



February 17 2003

Iowa Environmental Mesonet
Iowa State University Department of Agronomy


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.

Select Network:  SchoolNet8  WeatherNet

Current Data

- [Current Conditions](#) (sortable)
- [Where's it raining?](#)
-  [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



ThelowaChannel.com - School Net 8 - Mozilla

File Edit View Go Bookmarks Tools Window Help

http://www.theiowachannel.com/schoolnet8/

Home Bookmarks JPortfolio Login

Iowa Soil Erosion Project ThelowaChannel.com - School Net 8

Part of The IBS Network

Search Site/Keyword Web Yellow Pages Contact the Station Sign up for E-News

THEIOWACHANNEL.COM

KCCI IOWA'S NEWS LEADER

Ask A Professional Auto Dating Career Education Food Family House and Home

Home News I Saw It On KCCI Weather Sports Ames Livelink Politics Health Money Tech Entertainment

LIVE SUPER DOPPLER SCHOOL NET 8

IN PARTNERSHIP WITH: CIPCO

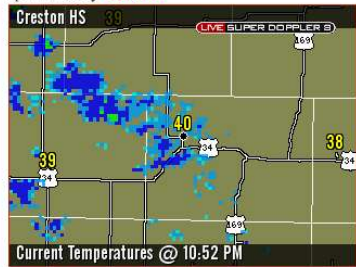
Home Currents Download Info Site Guide WebCams

Welcome to the KCCI SchoolNet8 website sponsored by CIPCO and its member cooperatives!

[Click to select your site from a map](#)

Live Super Doppler!

Shown: **Creston HS** SchoolNet sponsored by CIPCO



Current Temperatures @ 10:52 PM

- [Live Super Doppler for your SchoolNet8 Site](#)
- [Pick your site from a map](#)
- [Live Super Doppler with multiple sites](#)

Quick Links:

- [Sortable Currents](#)

Sites with Web Cameras:

- [Canoll](#)
- [Creston](#)
- [Humboldt](#)
- [Jefferson](#)
- [Marshalltown](#)
- [Pella](#)
- [Webster City](#)

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**.



<http://kcci.mesonet.agron.iastate.edu>



Questions?



Daryl Herzmann
3010 Agronomy Hall
Ames, IA 50010

515.294.5978

Cell: 515.451.9249

akrherz@iastate.edu