Weather Observation Project

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Introduction

During the period between February 25th and February 28th, data was collected and compared to illustrate weather changes over the course of four days. Data collected included temperature, dew point temperature, relative humidity, barometric pressure, wind speed and direction, cloud conditions, and precipitation.

Methods

Information was gathered though online resources and local observation at home in Overland Park. Additional observations were made at Johnson County Community College. The online resource used was https://www.wunderground.com. Observations were made to collect cloud conditions and directional wind information was compared to online data. Online data was preferred for accuracy. Personal graphs were generated using www.OnlineChartTool.com.

Results

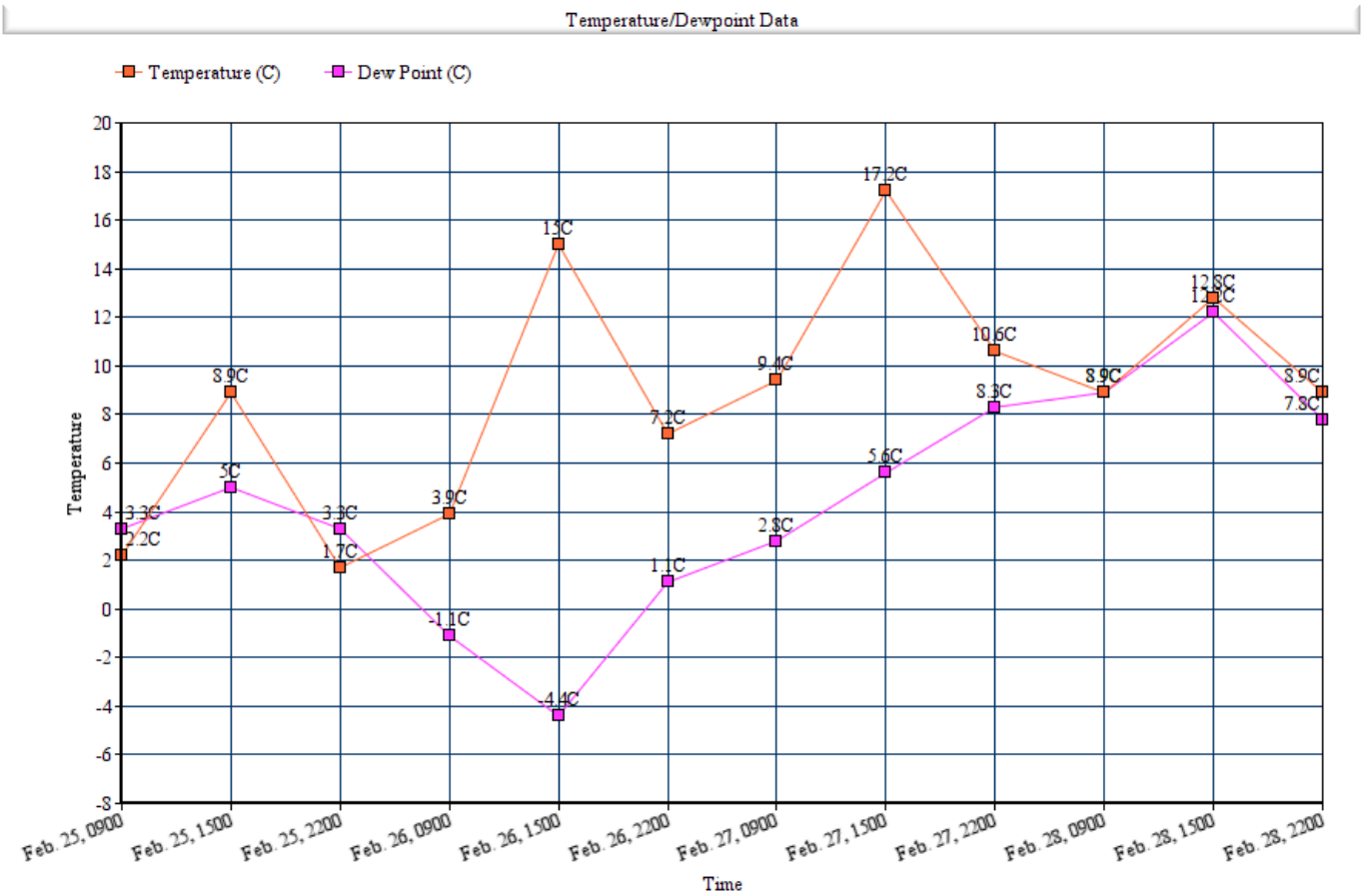
Date/Time	Temp	Dewpoint	Humidity	Baro Pressure	Wind Speed	Wind Dir	Clouds	Precip
Feb. 25, 0900	2.2 C	-3.3 C	67%	1019.3 hPa	4.1 m/s	SSW	Clear	None
Feb. 25, 1500	8.9 C	-5.0 C	37%	1018.2 hPa	3.6 m/s	SSW	Cloudy	None
Feb. 25, 2200	1.7 C	-3.3 C	70%	1029.8 hPa	Calm	Calm	Clear	None
Feb. 26, 0900	3.9 C	-1.1 C	70%	1023.8 hPa	2.1 m/s	SSW	Clear	None
Feb. 26, 1500	15.0 C	-4.4 C	26%	1021.7 hPa	4.1 m/s	S	Clear	None
Feb. 26, 2200	7.2 C	1.1 C	65%	1020.1 hPa	3.1 m/s	SSE	Clear	None
Feb. 27, 0900	9.4 C	2.8 C	64%	1018.2 hPa	7.2 m/s	S	Clear	None
Feb. 27, 1500	17.2 C	5.6 C	46%	1011.4 hPa	8.7 m/s	S	Partly Cloudy	None
Feb. 27, 2200	10.6 C	8.3 C	86%	1011.6 hPa	4.6 m/s	S	Cloudy	None
Feb. 28, 0900	8.9 C	8.9 C	100%	1008.8 hPa	2.1 m/s	SSE	Cloudy	None
Feb. 28, 1500	12.8 C	12.2 C	96%	1005.0 hPa	2.1 m/s	E	Cloudy	None
Feb. 28, 2200	8.9 C	7.8 C	93%	1009.3 hPa	7.2 m/s	N	Cloudy	None

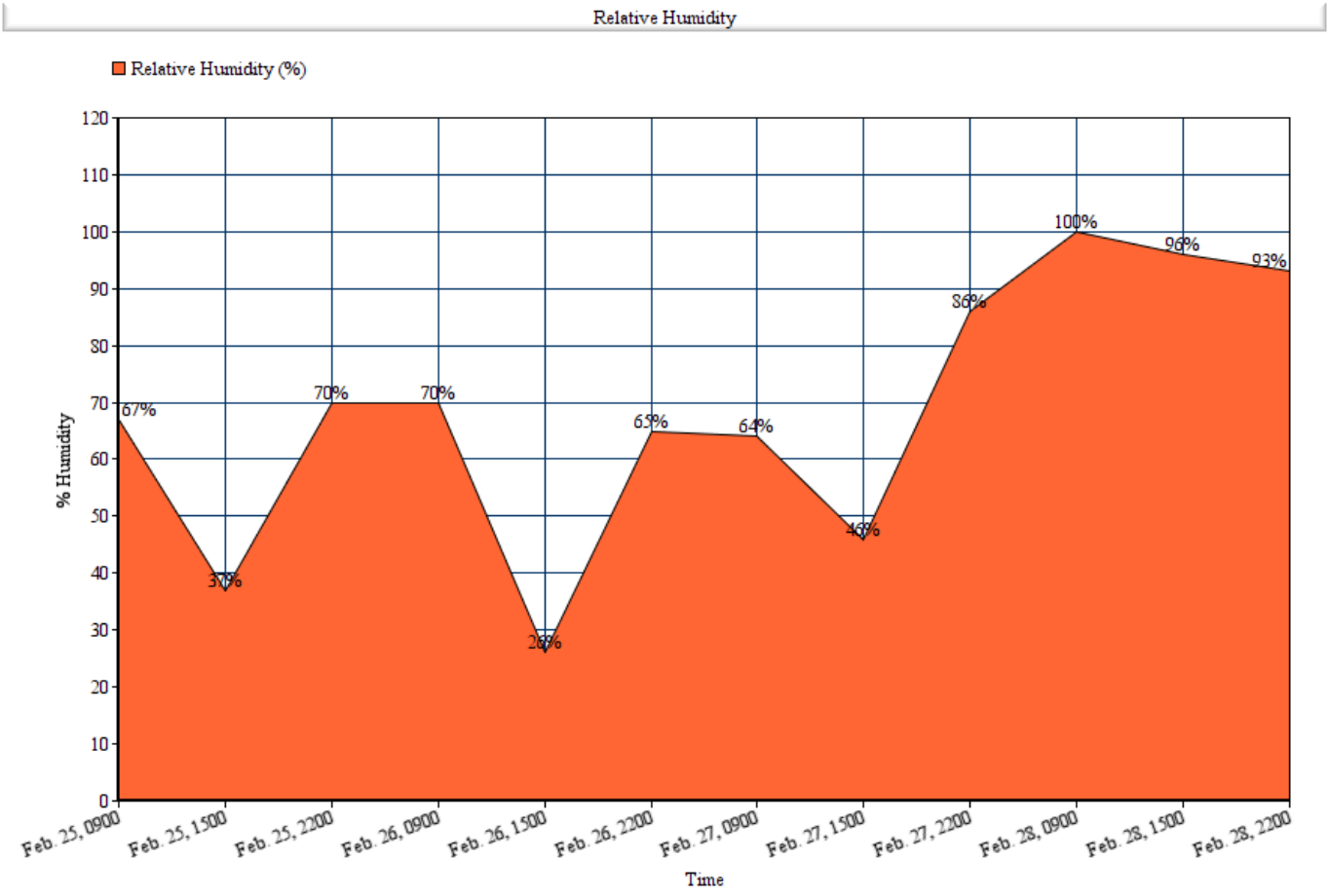
Numerical Data: Source Visual Data: Local observation

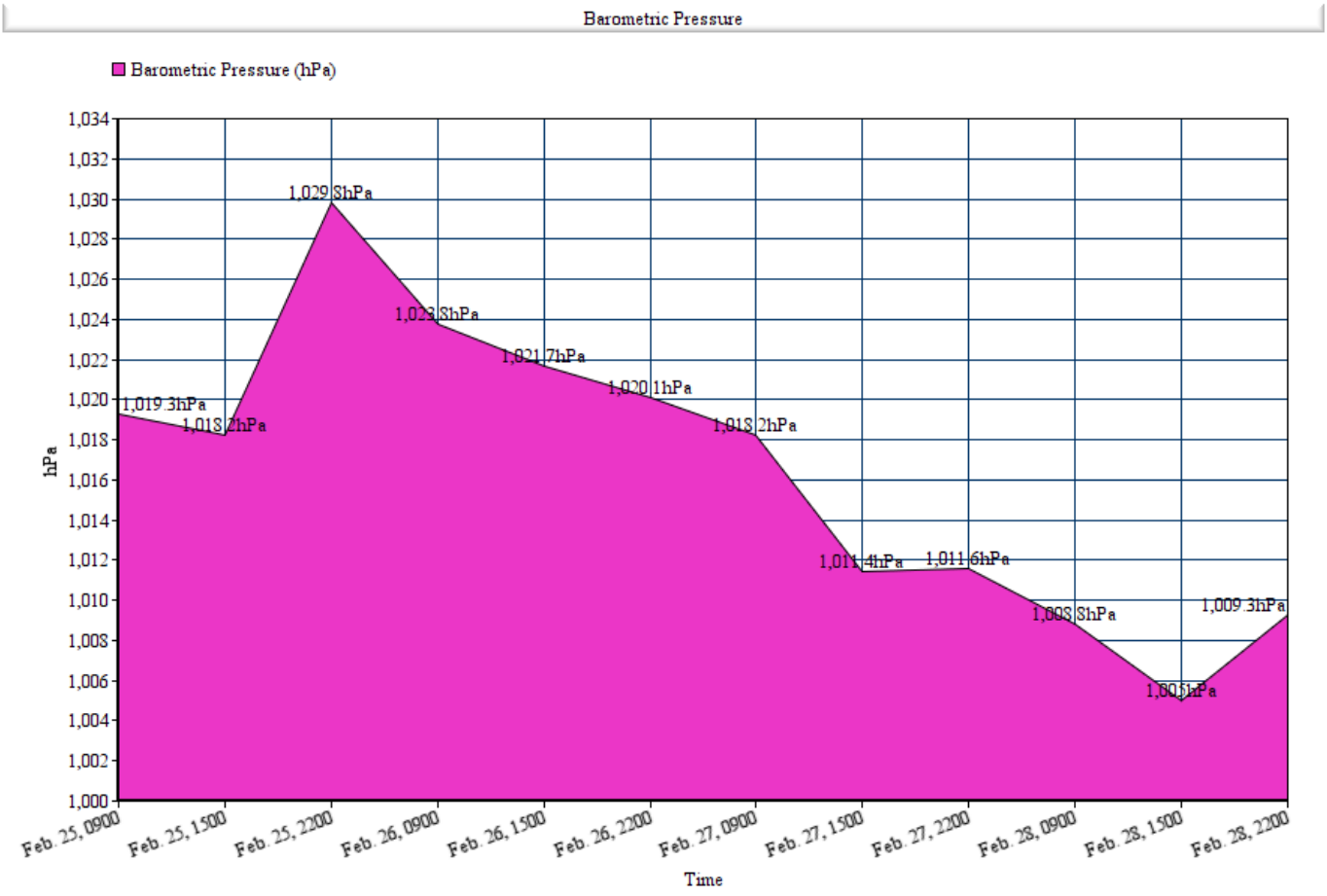
Daily Summary

- On Sunday, Feb. 25, the low was -6.1 C at 0700. The high reached 8.9 C at 1700. The winds started from the west and changed directions to the south east by the end of the night. Skies were clear in the morning and became partly cloudy in the afternoon and for the rest of the day with no precipitation.
- On Monday temperatures warmed with the low at -2.2 C at 0400. The high reached 15 C by 1500. Calm winds and clear skies persisted all day with no precipitation.
- On Tuesday,temperatures continuted to warm. The high was 15.0 C and the low was 9.4 C. By the afternoon the skys were mostly cloudy for the rest of the day.
- On Wednesday, the high was 12.8 C with a low of 8.9 C. The skies were mostly cloudy with close to 100% humidity all day.

Graphs




Relative Humidity
Relative Humidity (%)
% Humidity
120
110
100
90
80
70
60
50
40
30
20
10
0
67%
70%
70%
65%
64%
88%
100%
96%
93%
Feb. 25, 0900
Feb. 25, 1500
Feb. 25, 2200
Feb. 26, 0900
Feb. 26, 1500
Feb. 26, 2200
Feb. 27, 0900
Feb. 27, 1500
Feb. 27, 2200
Feb. 28, 0900
Feb. 28, 1500
Feb. 28, 2200
Time



Interpretations/Analysis

The week started out with calm, mild weather. The air was cool and dry with a low relative humidity and high pressure compared to the rest of the week. Temperatures warmed and pressure dropped over the next four days, along with increasing humidity. By Wednesday, the dew point temperature was near or equal to the air temperature producing 100% relative humidity.

The data shows the relationship between pressure and relative humidity is inversely proportional. Higher pressure air cannot hold as much water vapor as low pressure air. Over the next four days the pressure dropped sand therefor allowed increased capacity for water vapor. As the water vapor in the air increased, this also raised the dew point temperature, or temperature at which the air cannot hold any more water vapor. The data shows 100% humidity was reached on Wednesday morning.

On Sunday, the temperatures and humidity was low, and the pressure was high compared to the rest of the week. This indicates a cool, high pressure system with calm winds. As the pressure dropped we saw an increased in winds and mostly cloudy skies. This indicated a warmer, low pressure system moved in. The wind direction was from the south indicating the low pressure system came from the south, bringing with it warmer temperatures, moisture, and cloudy skies.