

# ISOTHERM AND ISOBAR MAPS

**PURPOSE:** The purpose of this laboratory exercise is to become familiar with how to construct both isotherm and isobar maps.

**VOCABULARY:** (10 points)

**isoline** \_\_\_\_\_

**isotherm** \_\_\_\_\_

**isobar** \_\_\_\_\_

**OBJECTIVES:** Upon completion of this laboratory exercise, you will be able to:

- (1) Define the terms: isoline, isotherm, and isobar
- (2) Construct an isotherm and an isobar map.

**MATERIALS:** pencil colored pencils isotherm map color scheme

**PROCEDURE PART A:** (30 points)

In this part of the laboratory exercise, you will construct a 10°F isotherm map.

- (a) Find the lowest temperature on the Isotherm Map.
- (b) Go to the nearest 10°C increment.
- (c) Construct isolines.
- (d) Using the isotherm map color scheme, correctly color the isotherm map.

**QUESTIONS: PART A:** (10 points)

- (1) Based on this isotherm map, in what direction would you head from New York state to find warmer temperatures?
  
  
  
  
  
  
  
  
  
  
- (2) Based on this isotherm map, what should people in New York state expect to happen to their temperatures over the next two days? **Explain how you know.**

**PROCEDURE: PART B** (10 points)

In this part of the laboratory exercise, you will construct a 4mb isobar map.

- (1) Find the lowest pressure on the Isobar Map.
- (2) Construct the 992mb isoline around the lowest pressure.
- (3) Complete the isolines in increments of 4mb up to the 1028mb isobar.

**PROCEDURE PART B2:** (10 points)

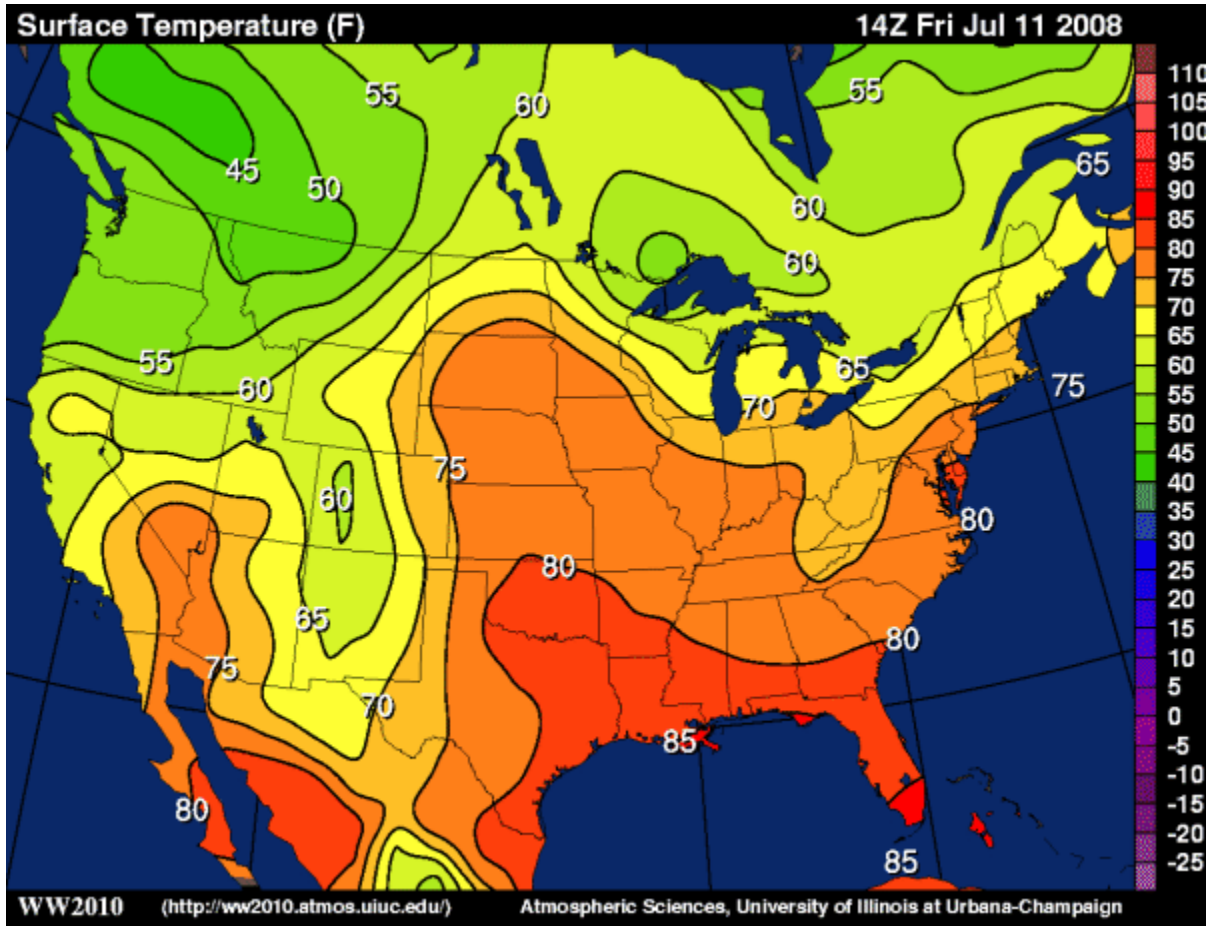
- (1) Label the low pressure center with an “L” and the high pressure center with an “H”.
- (2) Draw the direction the winds will flow around each of the two pressure centers.

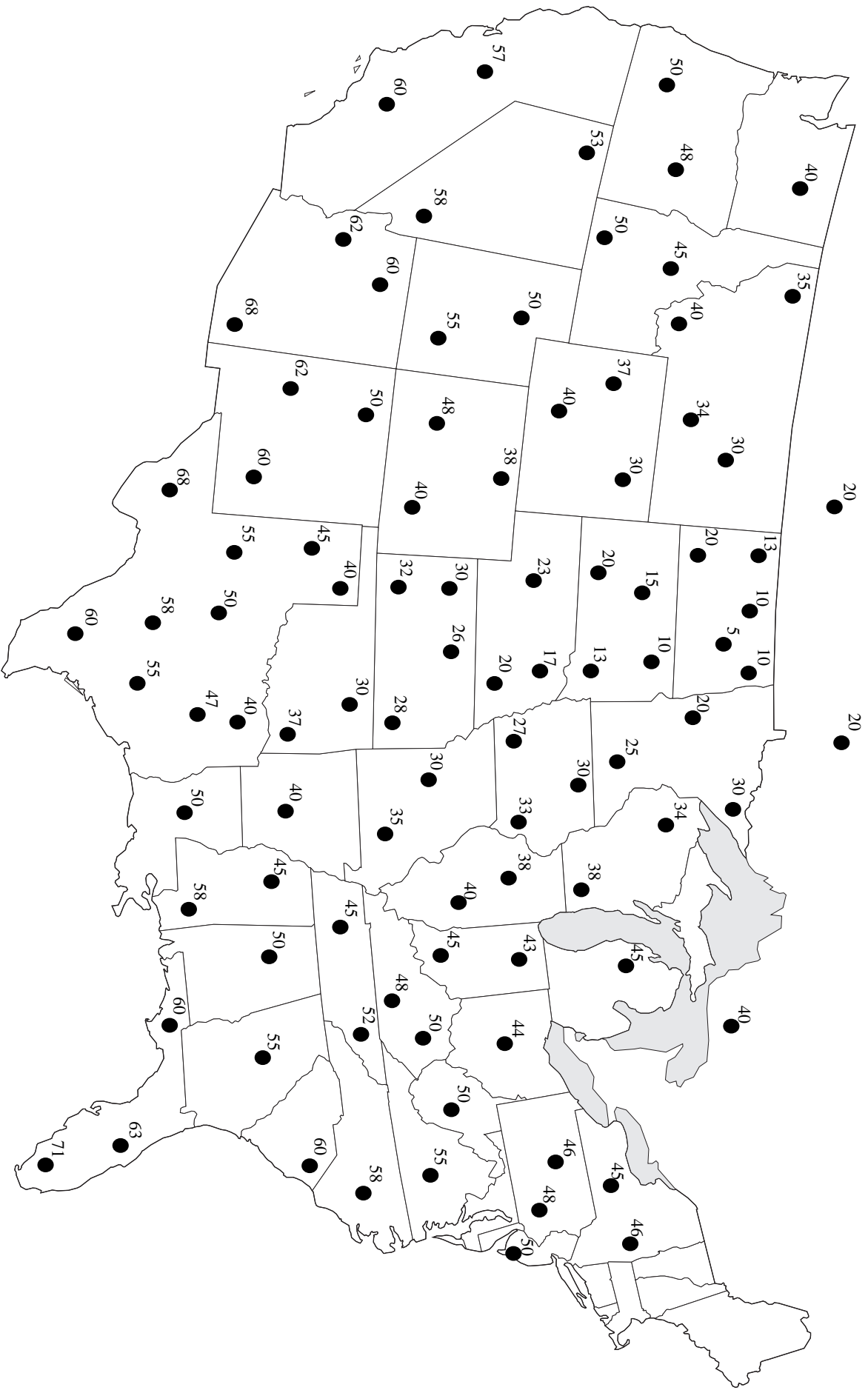
**QUESTIONS PART B:** (30 points)

- (1) In what part of the United States is the high pressure center located? \_\_\_\_\_
- (2) In what part of the United States is the low pressure center located? \_\_\_\_\_
- (3) On which side of the low pressure center would the winds be the strongest? \_\_\_\_\_
- (4) What evidence do you have to support your answer for question #3? \_\_\_\_\_  
\_\_\_\_\_
- (5) In the next two days, what should the people of New York expect to happen to the barometric pressure? \_\_\_\_\_  
\_\_\_\_\_
- (6) Circle each of the characteristics that people in NY State should expect with the approaching low pressure center.

(a)	warmer	colder
(b)	dry	moist
(c)	sinking air	rising air
(d)	clouds	no clouds

Sample Isotherm Map Color Scheme  
found at: [http://ww2010.atmos.uiuc.edu/\(Gh\)/wx/surface.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/wx/surface.rxml)

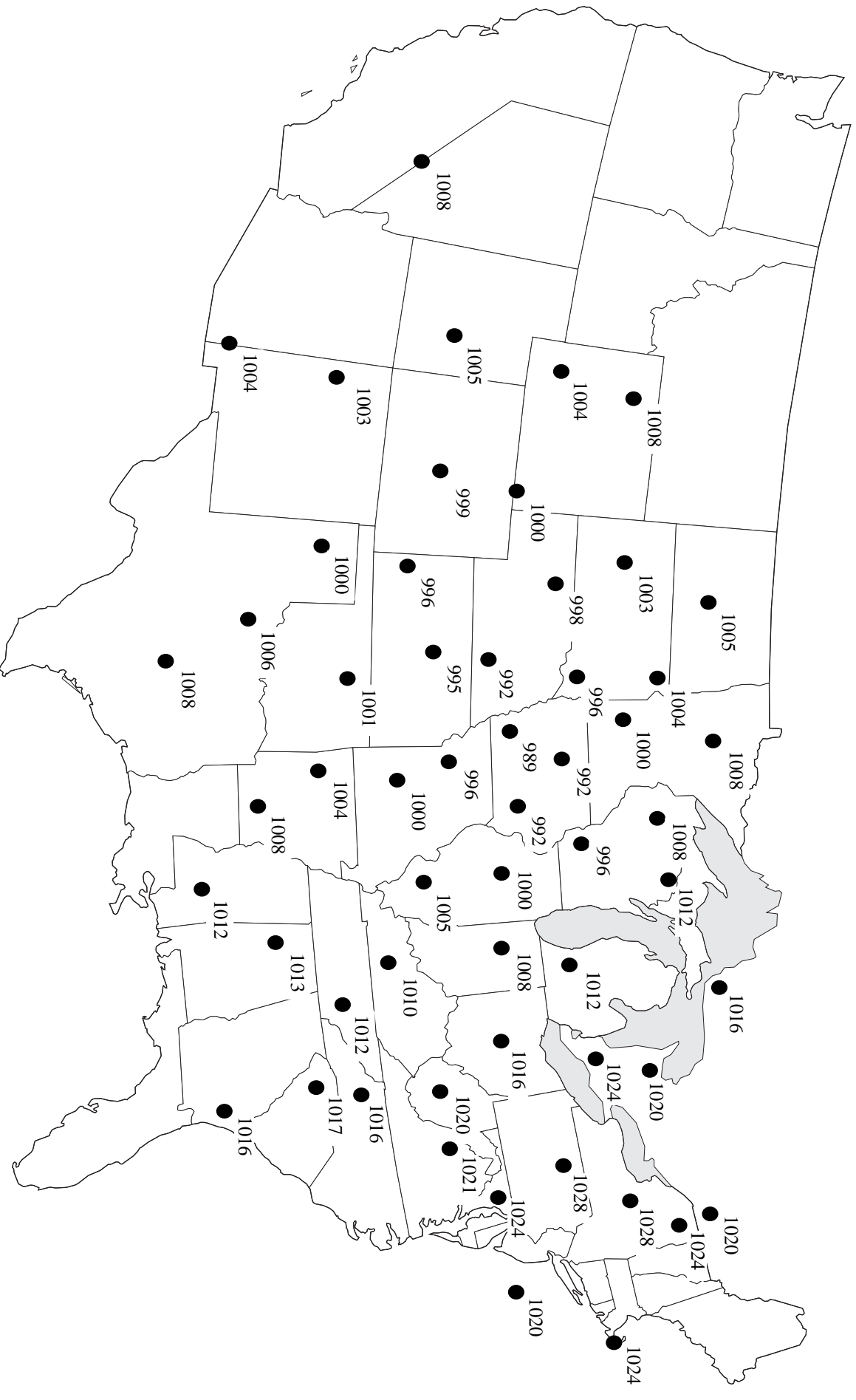




# Isotherm Map

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# Isobar Map