

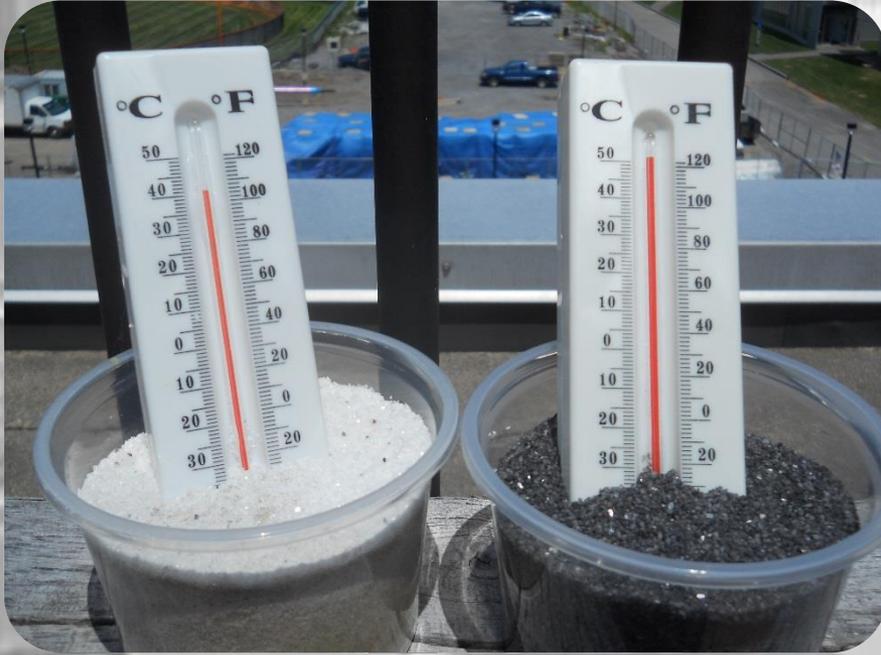


The Weather Garden is an offshoot of the Campus Beautification Committee: making landscaping, tree planting, and flowerbeds a priority in beautifying the campus. The terrace Weather Garden adds an educational component to the beautification. Here the elements of weather – sun, heat, wind, and rain – are on display, as well as links between weather and plants.

The Weather Garden was planted in the spring of 2013. Contact Dr. Stephen Vermette at [vermetsj@buffalostate.edu](mailto:vermetsj@buffalostate.edu) to learn more.

**A Short Tour Follows**  
(10 Slides)

## Two Experiments



Albedo is a term that describes the reflectivity of a surface. A light colored surface exhibits a high albedo (very reflective). As some of the Sun's energy is reflected away less energy is available to heat the surface. A dark colored surface exhibits a low albedo (low reflectivity). More of the Sun's energy is absorbed, thus more energy is available to heat the surface. This difference in temperature between the two surfaces is most apparent on a sunny day. Looking at the two thermometers, which is recording the highest temperature?

The rotation of the radiometer's vanes is due to the power of sunshine. The vanes in the radiometer are alternately black and white. As the dark vanes absorb more of the sun's energy than the white ones, the black surface becomes warmer than the white surface. The temperature difference around the vanes causes a pressure difference, which in turn forces air molecules to move around the edges of the vanes, resulting in their rotation. Come to think about it, wind is the result of pressure differences (winds travel from high to low pressure), which in turn are caused by temperature differences over land surfaces.



## Morning Glory

As its name implies, the morning glory flowers unravel into full bloom in the early morning – blooming from dawn to late afternoon. When it does bloom, the blossom lasts for but a single day. The variety planted in the Weather Garden is 'Heavenly Blue'; the blossoms color is sky blue with a white sun shining in the center of each blossom. The Aztecs believed that Morning Glory seeds were connected with the Sun Gods.



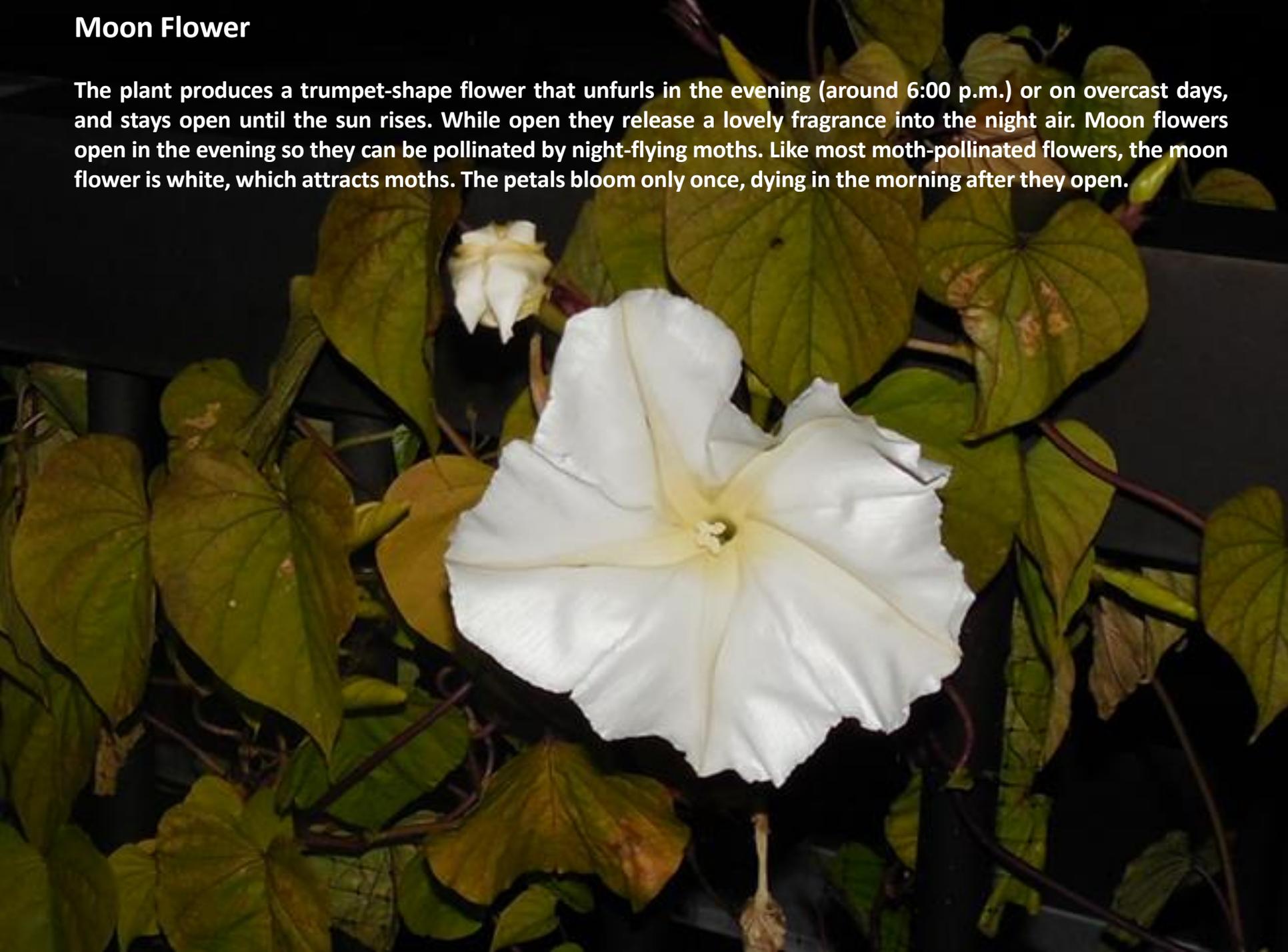


## Making the Invisible visible!

Catching the wind by day and night, and aeolian tones captured by chimes, but also by friction, falling, rolling or rubbing – that brings a hodgepodge of sounds to our ears.

## Moon Flower

The plant produces a trumpet-shape flower that unfurls in the evening (around 6:00 p.m.) or on overcast days, and stays open until the sun rises. While open they release a lovely fragrance into the night air. Moon flowers open in the evening so they can be pollinated by night-flying moths. Like most moth-pollinated flowers, the moon flower is white, which attracts moths. The petals bloom only once, dying in the morning after they open.





## Sundial

This instrument is called a 'sundial'. It is aligned such that the movement of the sun across the sky gives the time of day. The metal bar across the sun face is called a 'gnomon'. It is the shadow cast by the gnomon that gives the time of day. The shadow rotates around the gnomon in a clockwise direction, and its position can be used to mark time. Indeed, it has been claimed that the "clockwise" direction in which the hands on a clock rotate was chosen for this reason.

WATER GARDEN  
SUN  
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Sunflowers are heliotropes, buds following the sun in the sky until mature. Once mature, they face east.

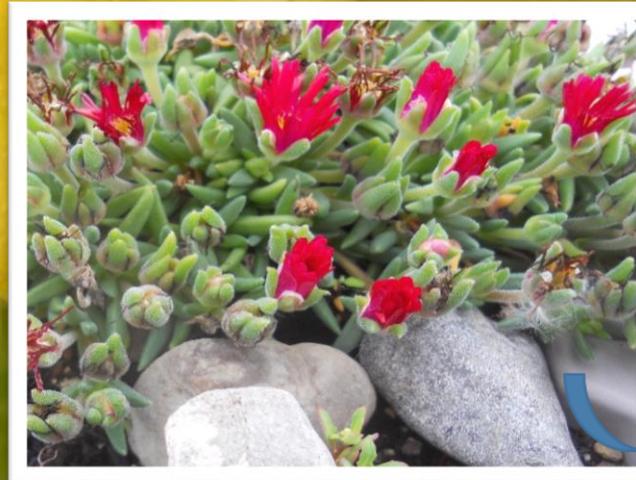


Four O'clocks open in the late afternoon, after the heat of the day.

Cloudy Day



Sunny Day





Wind cannot be seen, but its feel on our face, its sound to our ears, or the swirling and movement of an object in its path tells us it is real. Wind direction is defined as the direction that the wind blows from. On hot summer days the wind is our best friend, bringing us relief from the heat. Although in winter, the wind combined with cold temperatures; make us feel a temperature -- wind chill -- that is far colder than what the thermometer is reading. Winds disperse seeds from various plants and even disperse insects. The Billion-Bug Highway describes an enormous herd of insects that ride the winds above!



Prostrate plants and shrubs grow close to the ground. In cold Arctic and Alpine environments these plants take advantage of the warmth nearest the ground, and are protected from drying winds. In desert environments branches grow below the soil surface to protect themselves from too much sunlight. In windswept and exposed areas, winds carrying salt and sand tend to kill erect branches creating a prostrate habitat.

# Celosia

Derived from the Greek word κηλος (kelos), meaning "burned," and refers to the flame-like flower heads which aptly describe the look of celosias - especially the yellow, red, and orange plumed varieties - which bear a resemblance to licks of flames erupting from the stems or, in the case of the weather garden, the burned colors of a colorful sunrise and sunset.



**Linking Tree  
Rings and  
Fossils to  
Climate**





**The Weather Garden is located on the Classroom Building's 4<sup>th</sup> floor terrace. The garden can be seen by taking the elevator up to the terrace, but access may be restricted at certain times. A key can be obtained from the SNSS Dean's office.**