

Sky Touch Forecast: Illustrating the Latest Global Weather Patterns



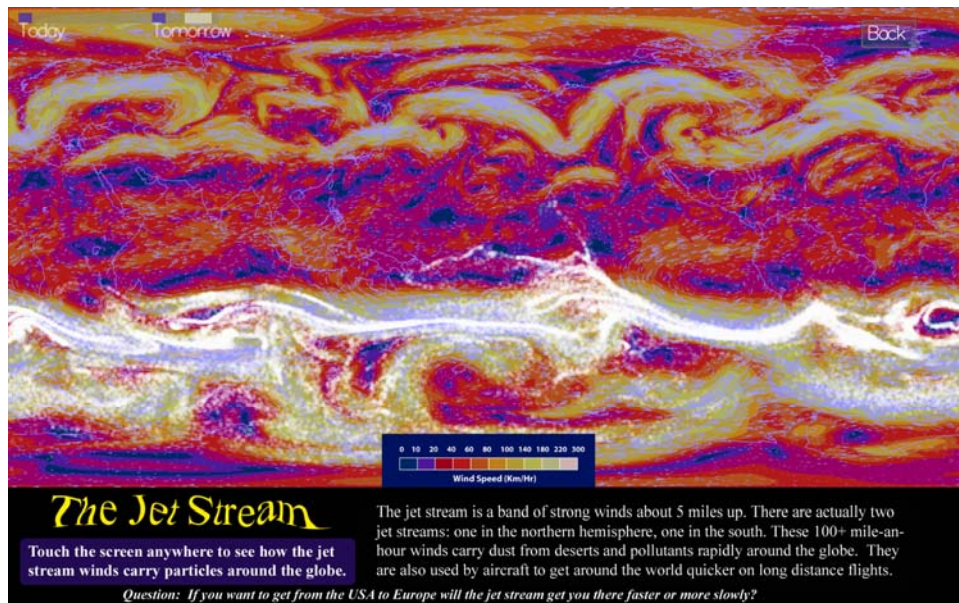
The start screen of the Sky Touch display

Using up-to-date NOAA weather forecast models makes it possible to see the global pattern of winds at different levels in the atmosphere. A touch screen kiosk allows users to choose what they wish to explore and to literally get their hands into evolving wind patterns. The system works by uploading global flow patterns predicted by NOAA's forecasting supercomputers for the next several days.

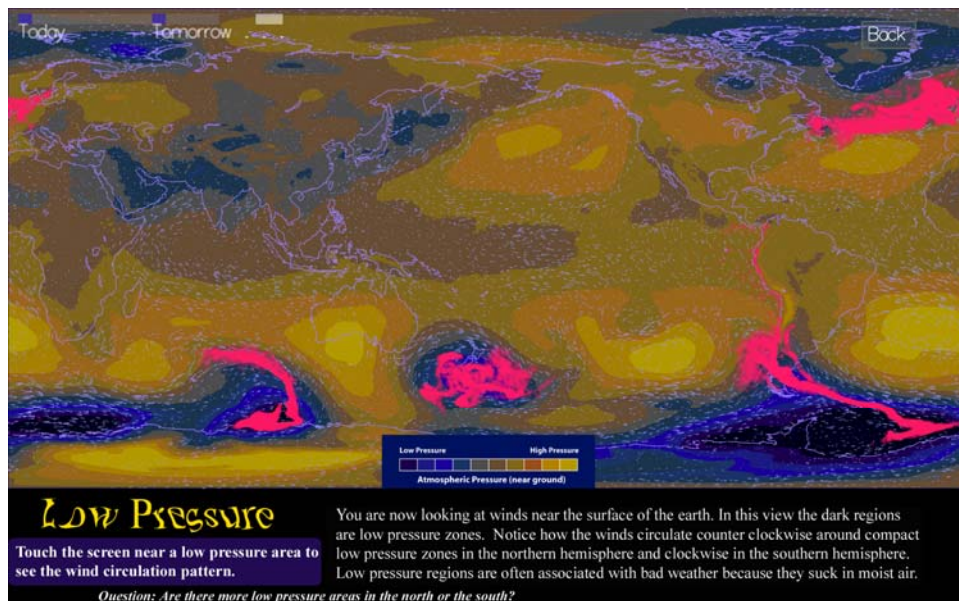
- Museum visitors can touch the screen thereby adding virtual "dye pots" to different layers of the atmosphere. This allows them to explore the jet stream, circulation patterns around low pressure areas or understand how a windstorm in the Sahara or Gobi Desert can result in dust being carried around the world.
- Different levels of the atmosphere can be selectively highlighted. The upper atmosphere illustrates how the northern and southern jet streams encircle the globe. Ground level winds can be used to highlight individual storm events.
- Surface pressure, surface temperature, or wind speed can be color coded and turned on and off.
- A plug-in for Definiti theaters allows the simulation to run in real-time on the dome.

The Three Modes

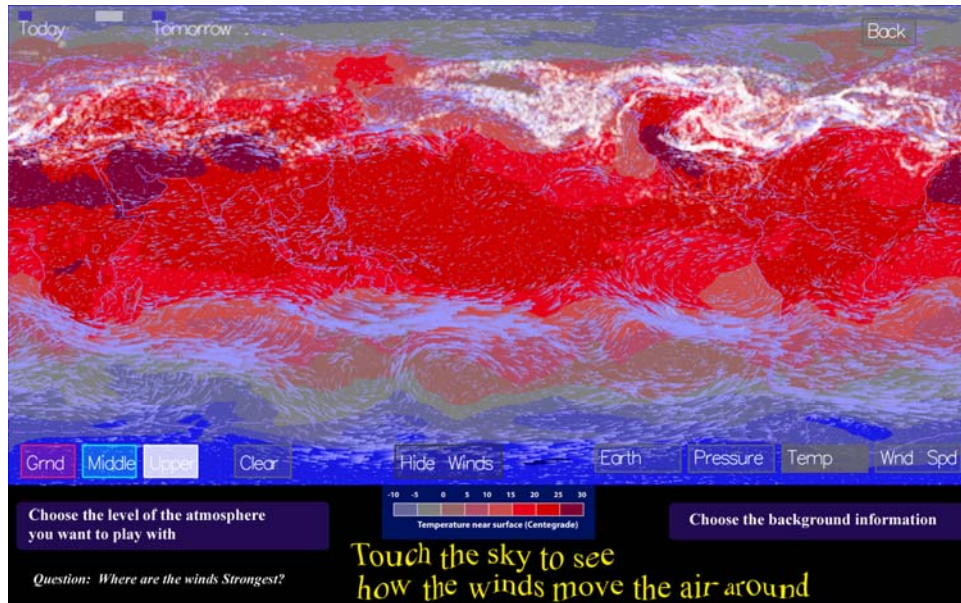
The Start Screen, illustrated on the previous page, gives three options for further exploration. If there have been no touches on any of the screens for more than 90 seconds the display reverts to this screen.



In **Jet Stream Mode** the user can paint particles into the 250 millibar pressure level of the atmosphere. Typically jet streams are present in both the northern and southern hemispheres. Here someone has painted in the southern jet stream.



In **Atmospheric Pressure Mode** visitors can explore circulation patterns around high and low-pressure areas.



In **Free Exploration Mode** the visitor has a wide range of options. Here the winds in the upper atmosphere are being shown together with surface temperature.



The touch screen kiosk. The system can also be connected to a Definiti GaiaSphere or Definiti dome theater so that whatever the visitor does is echoed on the larger display.

Sample Questions and Answers for use with **Sky Touch** Forecast

Each of these should be illustrated by placing particles in appropriate places

Jet Stream

Use the jet stream view (use the background showing speed).

Q: Is it faster to fly from Europe to the US or in the reverse direction?

A: It is much faster to go from the US to Europe. The jet stream can add between 50 and 100 MPH to the speed. This can make over an hour of difference.

Q: How many Jet streams are there?

A: Normally two, one in the northern hemisphere, the other in the south. Although sometimes these can split, so that there are two in the north, or two in the south. Contrast this with Jupiter (many jet streams).

Q: How does the jet stream affect the weather?

A1: Roughly divides cold weather from warm weather (show temperature background).

A2: It steers weather systems as they move around the globe.

Q: What causes pollution and dust to be carried around the globe?

A: You guessed it – the jet stream: It can take only a few days for dust to be carried around the earth if it gets up into the jet stream. This takes dust from the Mongolian desert to north America, for example. (If the jet is not passing over Mongolia, use Australia.)

Pressure:

Q: How do winds circulate around a low pressure area?

A: Counter clockwise in the north, clockwise in the south. Illustrate with particles. Why? Because of the rotation of the earth and the coriolis force.

Q: Why do we get wet weather in low pressure areas?

A: Because low pressure area tend to suck in wet moist air – often from the ocean – this rises, cools and causes moisture to condense as rain.