Laboratory 1, Fig 1.1
Laboratory 1, Fig 1.2
Laboratory 1, Fig 1.3
Laboratory 1, Fig 1.4
Laboratory 1, Fig 1.6
Laboratory 2  Fig 2.1
Laboratory 2  Fig 2.1
Laboratory 3  Fig 3.1
Laboratory 3  Fig 3.3
Laboratory 3   Fig 3.4
Laboratory 4  Fig 4.1
Laboratory 4  Fig 4.2
Laboratory 4  Fig 4.3
Laboratory 4  Fig 4.4

Satellite Images

Current US Infrared Image

These images are generated by geostationary satellites orbiting 22,000 miles above the equator looking at the United States. These include Visible, Infrared, and water vapor images. The images are updated once an hour at about 30 after the hour.

More Information
Return to Unisys Main Page
Visible Satellite Images

Current US visible image

These images shows the reflectance from the visible portion of the solar spectrum. Bright areas show clouds and snow cover. Dark areas are ground and ocean surfaces.

More Information
Return to Satellite Page
Return to Unisys Main Page
These images show the reflectance from the visible portion of the solar spectrum. Bright areas show clouds and snow cover. Dark areas are ground and ocean surfaces.

More Information
Return to Satellite Page
Return to Unisys Main Page
Laboratory 4  Fig 4.7
Laboratory 4   Fig 4.8
Laboratory 4  Fig 4.9
Laboratory 4  Fig 4.10
Laboratory 4  Fig 4.11
Laboratory 4  Fig 4.12

Satellite Images

These images are generated by geostationary satellites orbiting 22,000 miles above the equator. They include visible, infrared, and water vapor images. The images are updated once an hour, or at about 30 after the hour.
Infrared Satellite Image

This type of image shows heat-based radiation from the infrared spectrum. In other words, the warmer the surface, the more infrared radiation it emits. For a satellite image, cooler surfaces are bright while warmer surfaces are dark. Since the atmosphere cools as you increase in altitude, clouds would show up as bright areas and land surfaces as dark areas. In addition, low clouds will be more grey and higher clouds will show up more white. Tall thunderstorm clouds will show up as bright white and fog will be hard to discern from land areas. A large advantage of IR is that you can view 24 hours a day.

There are 5 sectors for the visible image:
1. East - GOES east view centered over 75 west longitude showing eastern US and Atlantic Ocean
2. West - GOES west view centered over 125 west longitude showing western US and Pacific Ocean
3. Hemisphere - this is a pieced/merged view of both the GOES east and GOES west satellite views remapped to a Mercator projection
4. US - this is a pieced view of GOES east and west remapped to a polar stereographic projection
5. Regional views - these are regional views remapped to a polar stereographic projection

Enhanced Infrared Satellite Image
Laboratory 4  Fig 4.16
Laboratory 4  Fig 4.17
Enhanced Infrared Satellite Image

This is an infrared image enhanced to highlight the cloud areas and the coldest cloud tops. Since IR images are used to determine cloud height, these images are enhanced to highlight the highest, coldest cloud tops. Areas of strong precipitation will show up as shades of cyan. Thunderstorms will show up in blue and green. In addition, the contrast of warmer clouds is increased so that low clouds will show up. A color bar at the bottom of the image will describe the enhancement scheme. The tick marks at the top of the bar represent 10 degree Celsius increments starting at 50° on the left and going to -110° on the right.

The color range represents:

<table>
<thead>
<tr>
<th>Colors</th>
<th>Temps (C)</th>
<th>Temps (F)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dark cyan</td>
<td>-32 to -43</td>
<td>-35 to -45</td>
<td>Jet stream and anvil clouds</td>
</tr>
<tr>
<td>cyan</td>
<td>-43 to -54</td>
<td>-45 to -65</td>
<td></td>
</tr>
<tr>
<td>light blue</td>
<td>-54 to -80</td>
<td>-55 to -75</td>
<td>Thick jet stream clouds</td>
</tr>
<tr>
<td>dark blue</td>
<td>-60 to -64</td>
<td>-75 to -68</td>
<td>Strong thunderstorm tops</td>
</tr>
<tr>
<td>dark green</td>
<td>-64 to -70</td>
<td>-83 to -84</td>
<td></td>
</tr>
<tr>
<td>green</td>
<td>-70 to -75</td>
<td>-105 to -105</td>
<td>Severe thunderstorm tops</td>
</tr>
<tr>
<td>brown</td>
<td>-75 to -81</td>
<td>-105 to -114</td>
<td>Strong Hurricane tops</td>
</tr>
<tr>
<td>yellow</td>
<td>-81 to -90</td>
<td>-114 to -130</td>
<td></td>
</tr>
</tbody>
</table>

Water Vapor Satellite Image
Laboratory 5  Fig 5.1
Visible Satellite Images

These images show the reflectance from the visible portion of the solar spectrum. Bright areas show clouds and snow cover. Dark areas are ground and ocean surfaces.

More Information
Return to Satellite Page
Return to Unisys Main Page
Laboratory 5 Fig 5.3
Laboratory 5  Fig 5.4
Laboratory 5 Fig 5.5

Satellite Images

These images are generated by geostationary satellites orbiting 22,000 miles above the equator looking at the United States. These include visible, infrared, and water vapor images. The images are updated once an hour at about 30 after the hour.

More Information

Return to Unisys Main Page
Laboratory 5  Fig 5.6

Composite Satellite Images

There are two images, one with a radar and surface map overlaid on the satellite image and another with just the radar summary.

More Information
Return to Satellite Page
Return to Unisys Main Page
Laboratory 5  Fig 5.7
Laboratory 5  Fig 5.8
Laboratory 5  Fig 5.9
Laboratory 5  Fig 5.10

Unisys Weather

Satellite Images

Current US infrared image

These images are generated by geostationary satellites orbiting 22,000 miles above the equator looking at the United States. Tracks include visible, infrared and water vapor images. The images are updated once an hour at about 30 after the hour.

More Information
Return to Unisys Main Page
Laboratory 5  Fig 5.11

Unisys Weather - Water Vapor Images - Mozilla Firefox

Water Vapor Satellite Images

Current US water vapor image
This image is taken from an infrared band which returns an integrated amount of water vapor of the top third of the troposphere. Moist areas show up as white on the map.

More Information
Return to Satellite Page
Return to Unisys Main Page
Laboratory 5  Fig 5.12
Laboratory 5  Fig 5.13
Laboratory 5  Fig 5.14
Surface data is reported hourly from places like airports and automated observing platforms. The types of plots using surface data include a composite surface map, weather depiction for aviation, regional plots for the US, Canada, Mexico and Alaska. Contoured analyses of various parameters including temperature and pressure. Finally, there are meteograms which are time cross-sections for individual cities. These data are updated hourly at around 30 minutes past the hour.
Laboratory 6  Fig 6.2

Surface Data

Current surface map

Surface data is reported hourly from places like airports and automated observing platforms. The types of plots using surface data include a composite surface map, weather depiction for aviation, regional plots for the US, Canada, Mexico and Alaska. Contoured analyses of various parameters including temperature and pressure. Finally, there are meteograms which are time cross-sections for individual cities. These data are updated hourly at around 30 minutes past the hour.

More Information on Plots
More Information on Meteograms
Return to Unisys Main Page
Laboratory 6  Fig 6.3

Surface Data

Surface data is reported hourly from places like airports and automated observing platforms. The types of plots using surface data include a composite surface map, weather depiction for aviation, regional plots for the US, Canada, Mexico and Alaska. Contoured analyses of various parameters including temperature and pressure. Finally, there are meteograms which are time cross-sections for individual cities. These data are updated hourly at around 30 minutes past the hour.

More Information on Plots
More Information on Meteograms
Return to Unisys Main Page
Laboratory 6   Fig 6.4
Laboratory 6   Fig 6.5
Laboratory 6  Fig 6.6
Laboratory 6  Fig 6.7
Laboratory 6   Fig 6.8

Surface Data

Current surface map

Surface data is reported hourly from places like airports and automated observing platforms. The types of plots using surface data include a composite surface map, weather depiction for aviation, regional plots for the US, Canada, Mexico and Alaska. Contoured analyses of various parameters including temperature and pressure. Finally, there are meteograms which are time cross-sections for individual cities. These data are updated hourly at around 30 minutes past the hour.

More Information on Plots
More Information on Meteograms
Return to Unisys Main Page
Surface Data Plot

Contour Plots

US Temperature Contour
Contour plot of temperatures (°F) for the contiguous US.

North America Temperature Contour
Contour plot of temperatures (°F) for North America.

24 hour Temperature Change
Contour plot of the temperature change from current hour to the same hour the previous day for the contiguous US. Areas below 0 represent when the temperatures are currently colder and reflect the passage of a cold front. Areas above 0 represent where the temperatures are warmer and often reflect the passage of a warm front.

US Wind Chill Contour
Contour plot of wind chill temperatures (°F) for the contiguous US. The wind chill is the effective temperature of the skin from heat loss due to winds at cold temperatures. Wind chill temperatures less than -20°F are considered low, temperatures less than -40°F are extreme, and temperatures less than -50°F are considered dangerous.

US Heat Index Contour
Contour plot of heat index temperatures (°F) for the contiguous US. The heat index is the effective temperature of the skin due to the inhibiting effects of humidity to allow the body to cool through sweating and evaporation. Heat index values greater than 90°F are considered high, index values greater than 100°F are extreme, and index values greater than 110°F are considered dangerous.

US Pressure Contour
Contour plot of sea level pressure (mb) for the contiguous US. The maximum and minimum values reflect the location of high and low pressure systems.

3 hour Pressure Change
Contour plot of the change in pressure from the current hour to 3 hours previous for the contiguous US. This is a good indicator of the movement and intensification of pressure systems. If the pressure change is negative in the region of a low pressure system (see above chart), the low is deepening. If the negative pressure change is out in front of the low pressure system, it indicates movement. The location of the maximum pressure drop indicates the possible direction of the low pressure system.

US Dewpoint Contour
Contour plot of the dewpoint temperature (°F) for the contiguous US. The dewpoint temperature indicates the amount of moisture (or humidity) in the atmosphere. The amount of moisture in the atmosphere affects how you feel and is used in the heat index computation (see above). Dewpoints above 65 suggest humid conditions. Summer dewpoints can reach the low 80s. Dewpoints above 65 mean that there is enough moisture in the atmosphere to generate thunderstorms. The higher the dewpoint, the easier storms form, and the more potent.
Surface Contour Plots

Current temperature contour

US Temperature Contour
Contour plot of temperatures (°F) for the contiguous US.

North American Temperature Contour
Contour plot of temperatures (°F) for North America.

24 hour Temperature Change
Contour plot of the temperature change from current hour to the same hour the previous day for the contiguous US.
Laboratory 6   Fig 6.12
Laboratory 7 Fig 7.1