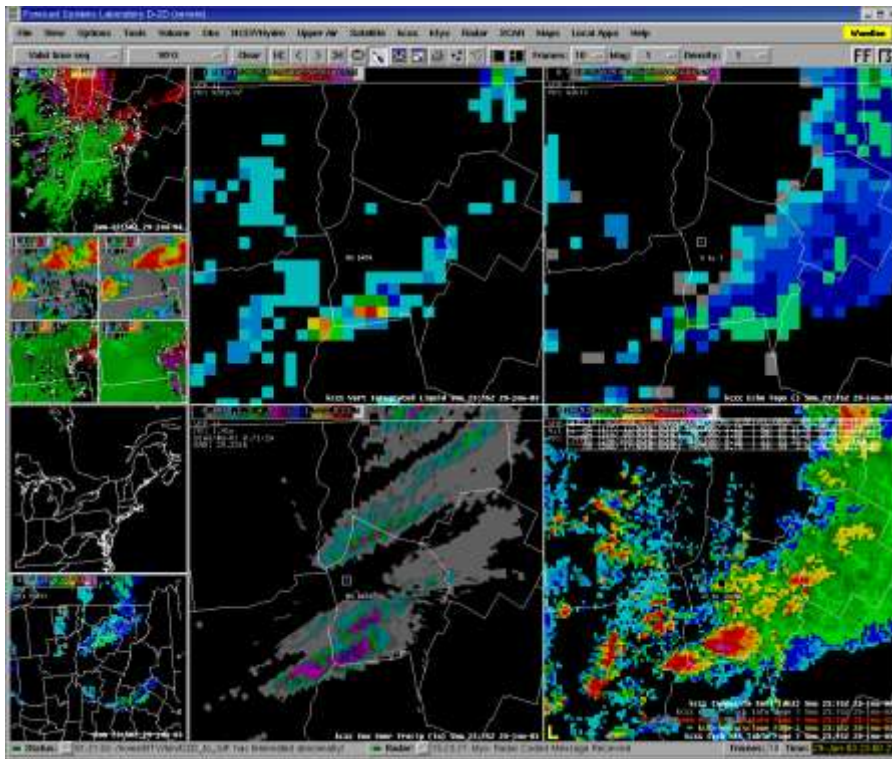


# Severe Weather June 29, 2003

A cold front combined with a strong disturbance in the jet stream winds aloft provided northern New York and central Vermont with strong to severe thunderstorms on June 29th. The first line of thunderstorms developed along a weak pre-frontal surface trough across southern Canada between 11:00 a.m. and 1:00 p.m. These storms moved east at 20 mph and entered Saint Lawrence County around 3:00 p.m.. However, given the lack of low level instability and limited surface moisture these storms quickly weaken over the northern Adirondacks. The broken line of thunderstorms did redevelop across the Champlain Valley between 5:00 p.m. and 7:00 p.m. as southerly winds helped to transport low level moisture into the region.

The first severe thunderstorm warning was issued for Chittenden County, Vermont around 7:25 p.m.. Figure 1 shows a four panel of radar products from the Burlington radar. The vertically integrated liquid (VIL) in the upper left has a value of  $49 \text{ kg/m}^2$ , along with an Echo Tops over 40 thousand feet (upper left). The bottom left shows the heavy precipitation and track of the cell with one hour precipitation amounts. The display on the bottom right shows composite reflectivity with the core over southern Chittenden County.

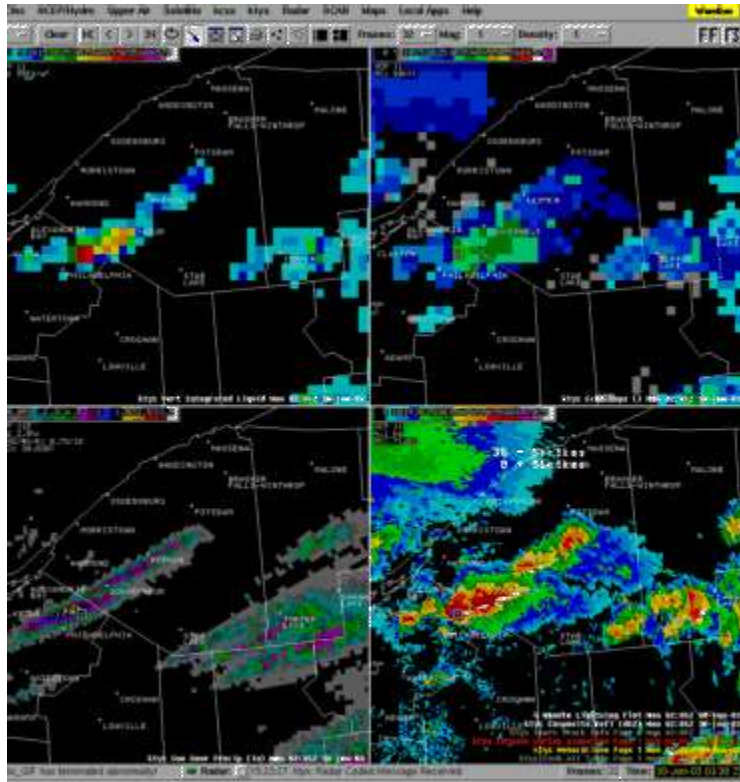


**Figure 1** Shows VIL (upper right)...Echo Top (upper left)...One Hour Precipitation (bottom left)...and Composite Reflectivity (bottom right)

The next round of strong to severe thunderstorms developed across the region between 8:00 p.m. and midnight. The combination of some leftover low level instability, interacted with strong jet energy to produce wind damage across central Vermont. Numerous tree limbs were reported down along Route 30 between Whiting and Salisbury. Also, residents in the town of Salisbury were left without power and telephone service from downed tree limbs on power lines. These individual pulse type cells moved northeast at 15 to 25 mph into Windsor County by 1100 p.m.. Another report of power lines down occurred across northeast Windsor County near the town of Rochester. In addition, very heavy rain fell with these thunderstorms. A cooperative observer from one mile south of Rochester reported a rainfall amount of nearly two inches. Also, another severe thunderstorm developed in Saint Lawrence County after 10:00 p.m. and dropped hail stones up to

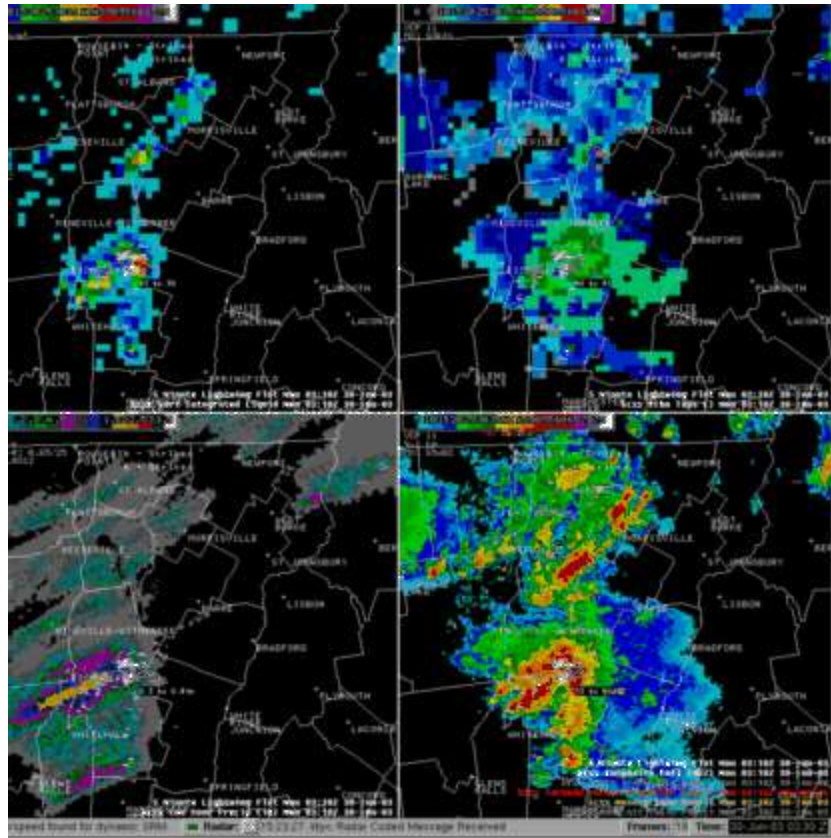
half dollar size.

The second severe thunderstorm warning was issued for Saint Lawrence County at 10:15 p.m.. This was verified by half dollar size hail near Fowler at 10:20 p.m.. The four panel display below shows a VIL of 55 kg/m<sup>2</sup> (upper right) entering southwest Saint Lawrence County...ECHO TOP near 40 thousand feet (upper left)...one to two inch One Hour Precipitation (lower left)...and Composite Reflectivity (bottom right)...along with lightning activity.



**Figure 2** Shows four panel of VIL (upper right)...Echo Top (upper left)...One Hour Precipitation (bottom right)...and Composite Reflectivity (bottom left).

The last sets of warnings were issued for central and southern Vermont around 11:00 p.m.. This four-panel radar display shows the storms as they entered central and southern Vermont. The upper left display shows a VIL Value of 43 kg/m<sup>2</sup>, along with a Echo Top ( upper right) of 43 thousand feet. The bottom left shows one hour precipitation values approaching 2 inches.



**Figure 3** Four Panel shows VIL (upper right)...Echo Top (upper left)...One Hour Precipitation (bottom left)...and Composite Reflectivity (bottom right)

Note: Large VIL values indicate potential of large hail.

Below is a display showing the locations of severe weather reports across northern New York and central Vermont. Also, shown is the local storm report of wind damage and hail that occurred from the storms.



**Figure 4** Plot of severe weather reports across our County Warning Area (CWA).

LOCAL STORM REPORT  
NATIONAL WEATHER SERVICE BURLINGTON VT  
127 PM EDT MON JUN 30 2003

TIME (EDT)	CITY LOCATION	STATE	EVENT/REMARKS
0730 PM 06/29/03	HINESBURG CHITTENDEN	VT	WIND DAMAGE A FEW TREES DOWN. REPORTED BY SHELBURNE POLICE.
1020 PM 06/29/03	FOWLER ST LAWRENCE	NY	1.25 IN HAIL HALF DOLLAR SIZE HAIL REPORTED BY LOCAL RESCUE
1115 PM 06/29/03	WHITING ADDISON	VT	WIND DAMAGE NUMEROUS TREE LIMBS AND SMALL TREES DOWN ALONG ROUTE 30 BETWEEN WHITING AND SALISBURY.
1125 PM 06/29/03	MENDON RUTLAND	VT	WIND DAMAGE NUMEROUS TREES AND LARGE BRANCHES AT ATKINS STATE PARK - BALD MTN.
1150 PM 06/29/03	1NE ROCHESTER WINDSOR	VT	WIND DAMAGE TREE DOWN ON POWER LINES.

The cloud pictures taken below were at the Burlington Airport on June 30<sup>th</sup>. These clouds developed in a moderately unstable airmass along a secondary cold front. These towering cumulus clouds developed a weak line of showers and thunderstorms across central and southern Vermont. However, these storms stayed below severe weather limits

