

EASTERN REGION TECHNICAL ATTACHMENT

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SATELLITE PICTURES ASSIST IN QUICK DETECTION
OF RAPID SEVERE WEATHER DEVELOPMENT

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At about 1600Z June 6, 1975, showers ended in the New York Metropolitan area, and the skies began to brighten. The showers were associated with a frontal wave that passed through the area. The surface map for 1200Z is shown in Figure 1.

At 1630Z some thought was given to updating a forecast, released earlier at 1500Z, by removing the mention of any precipitation. It was noticed, however, that the upper air trough was still approaching from the west and the 1600Z satellite picture (Figure 2A) did show convective clouds to the west over New Jersey and northeast Pennsylvania. By comparison with earlier pictures it could be seen that these clouds were increasing both in size and coverage. It was decided to delay any amendment to the forecast.

The 1730Z satellite picture (Figure 2B) showed rapid increase in the development of the cumulus clouds over northeast Pennsylvania, with precipitation echoes now reported by New York City radar. The activity was spreading into New Jersey. The forecast was amended at 1800Z to increase the precipitation probability to 100%, contrary to earlier thinking.

By 1820Z, the 1800Z satellite picture (Figure 2C) and radar showed extremely rapid development to the activity, now approaching New York City. A telephone report revealed that hail was occurring over northern New Jersey. At 1825Z a special marine warning bulletin and severe thunderstorm warning was issued through the news media. In addition, live radio broadcasts were made by WSFO personnel on several New York City radio stations. National Weather Service broadcasts were made on VHF-FM using the tone alert to automatically activate properly equipped receivers.

At 1910Z, the city was hit by a severe thunderstorm, accompanied by hail and strong winds. The 1930Z satellite picture (Figure 2D) shows the activity over the New York area, and also other activity that rapidly developed to the south over New Jersey.

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Hence, we have a striking case in which originally some thought was given to removing any mention of precipitation from the forecast and subsequently, based on GOES pictures, the thinking changed drastically. Later, based on radar and satellite information, a severe thunderstorm warning was issued.



Figure 1. Surface weather map, 1200Z June 6, 1975 (From Daily Weather Maps, Weekly Series).

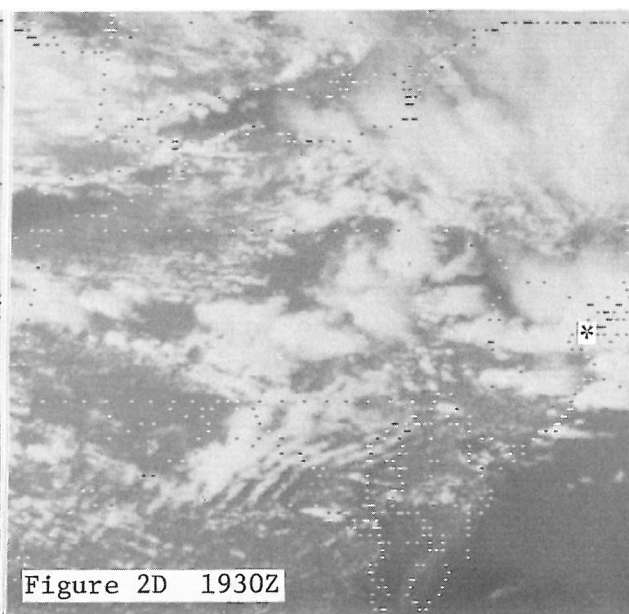
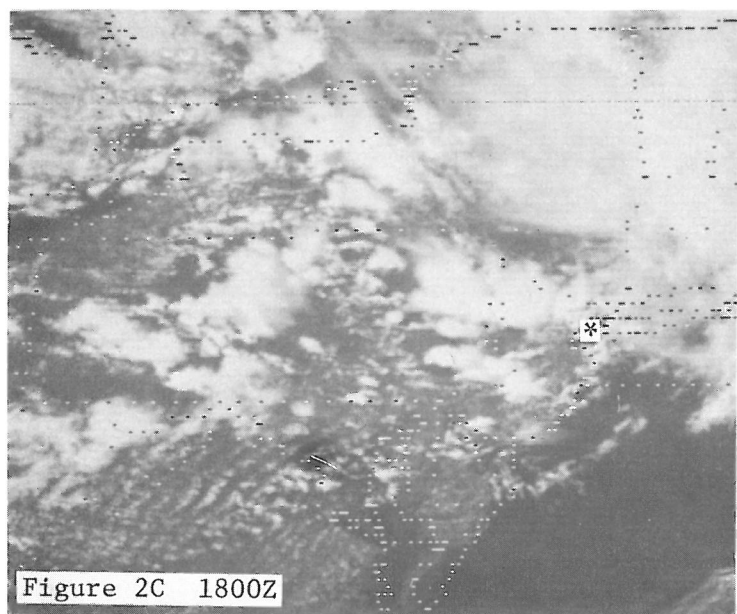
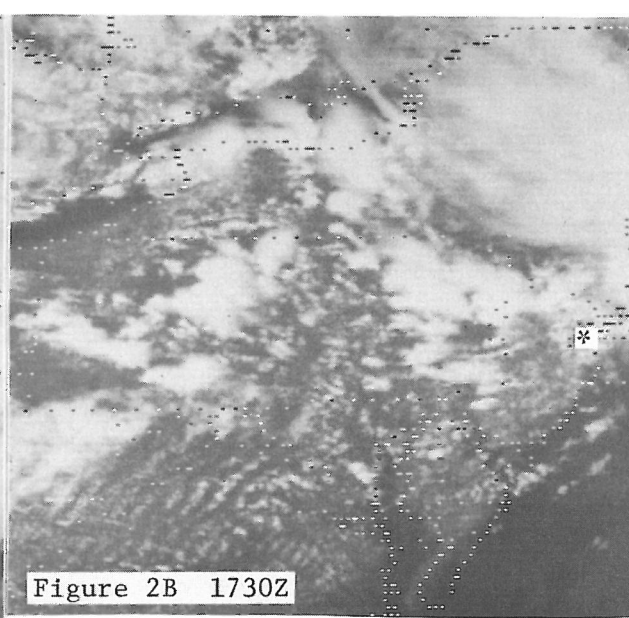
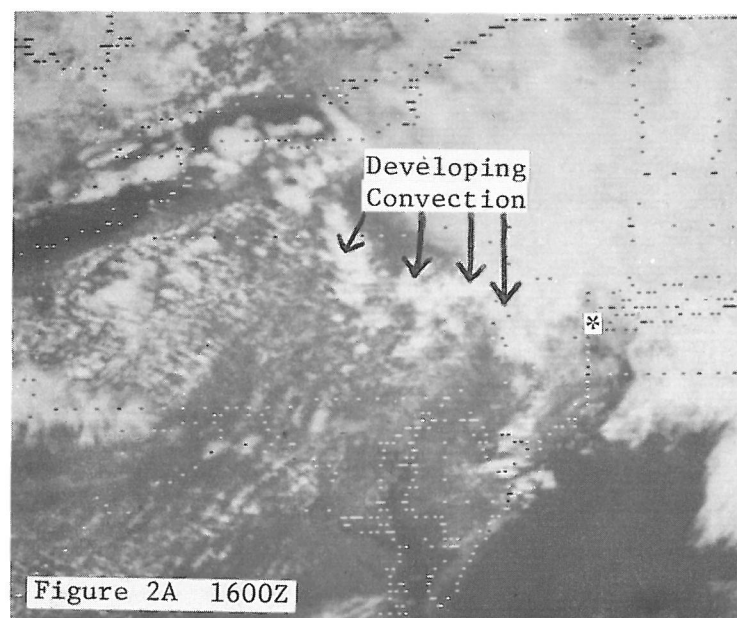


Figure 2. SMS-1 visible, half-mile resolution pictures, June 6, 1975. These pictures, received at WSFO New York, show rapid increase in coverage and development of convective clouds to the west, south and over the New York City area. A severe thunderstorm hit New York City at 1910Z. The asterisk indicates the location of the city.

SCIENTIFIC SERVICES DIVISION, ERH
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