

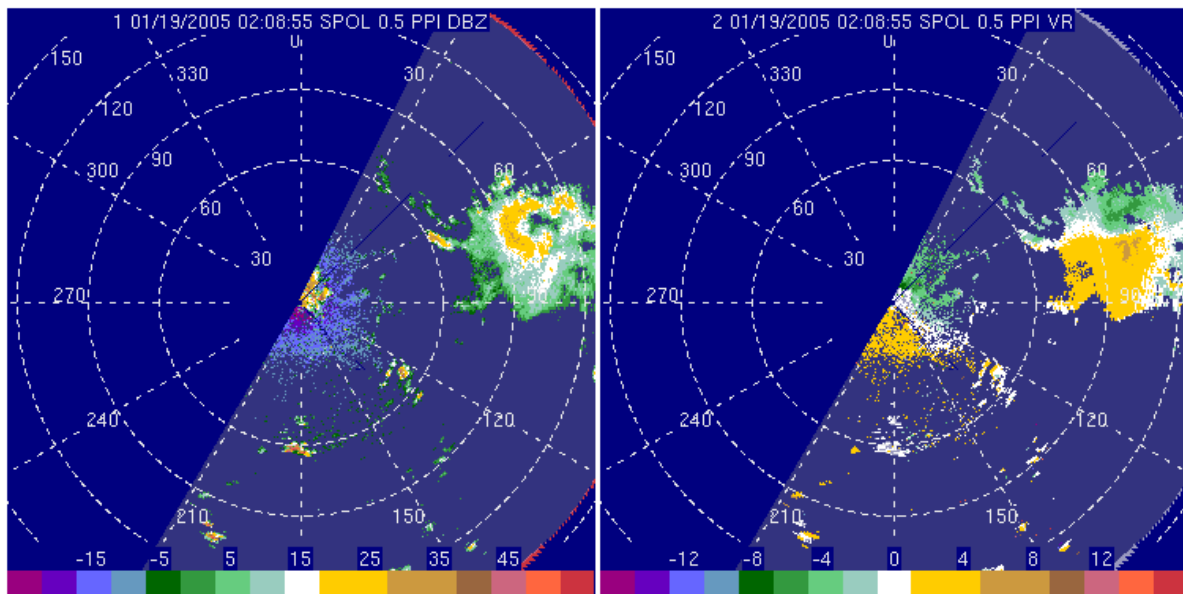
The January 18-19, 2005 *mini-cyclone*. A quick note.

Gabor Vali – April 3, 2005

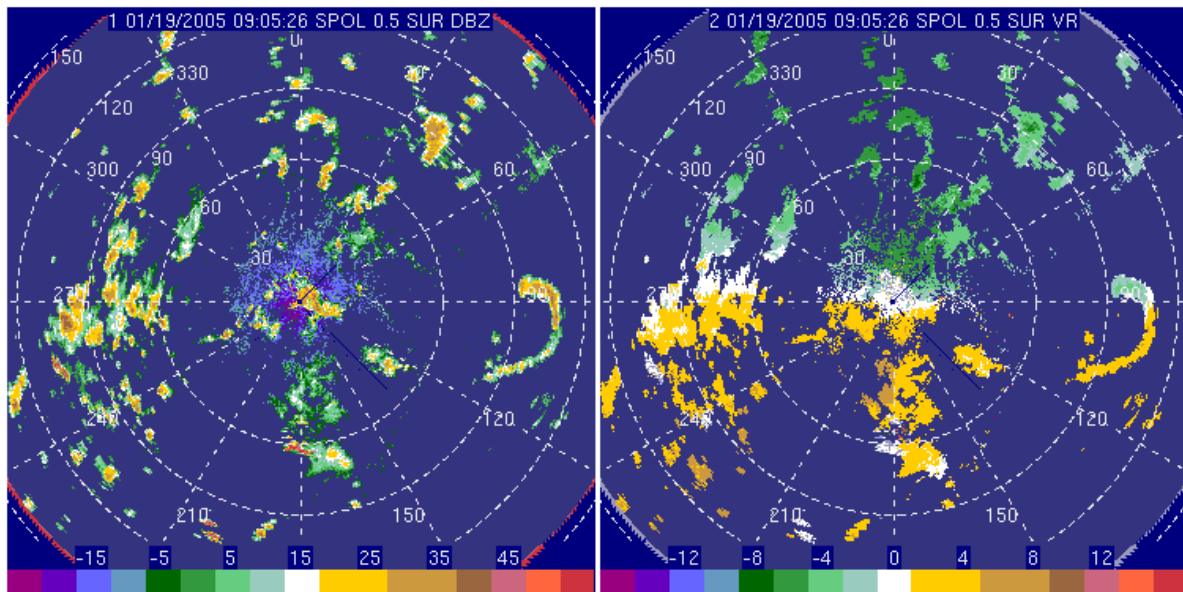
The purpose of this note is to simply call attention to an interesting sequence of cloud development. The King Air flights on the afternoon of the 18th and the morning of the 19th focussed my attention on the region east and southeast of Antigua. Cloud development in nearly the same area during the two flights was interesting in itself, especially since deep and vigorous clouds grew in this area while the rest seemed more subdued. When I started looking at the somewhat broader picture the mini-cyclones emerged. I don't know of a better way to describe them.

There is no attempt here to look at the causes associated with the phenomenon; the goal is merely to call attention to this event by giving a short description of it.

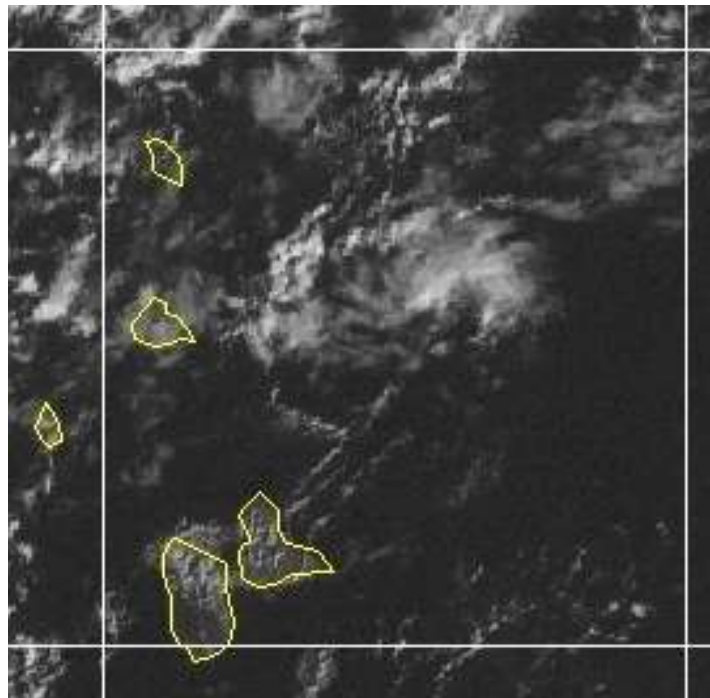
The first sign of this development was a large set of smaller echoes at about 20Z on Jan 18, located at 015°/100km from SPol. These echoes gradually merged and formed a solid echo patch and a convergence line around 22Z. The echo grew and became more circular in shape reaching 60 km diameter at its maximum development (01Z to 02Z on Jan 19). At that stage, rotation is clearly evident in both the reflectivity and Doppler data, as seen in the image below.

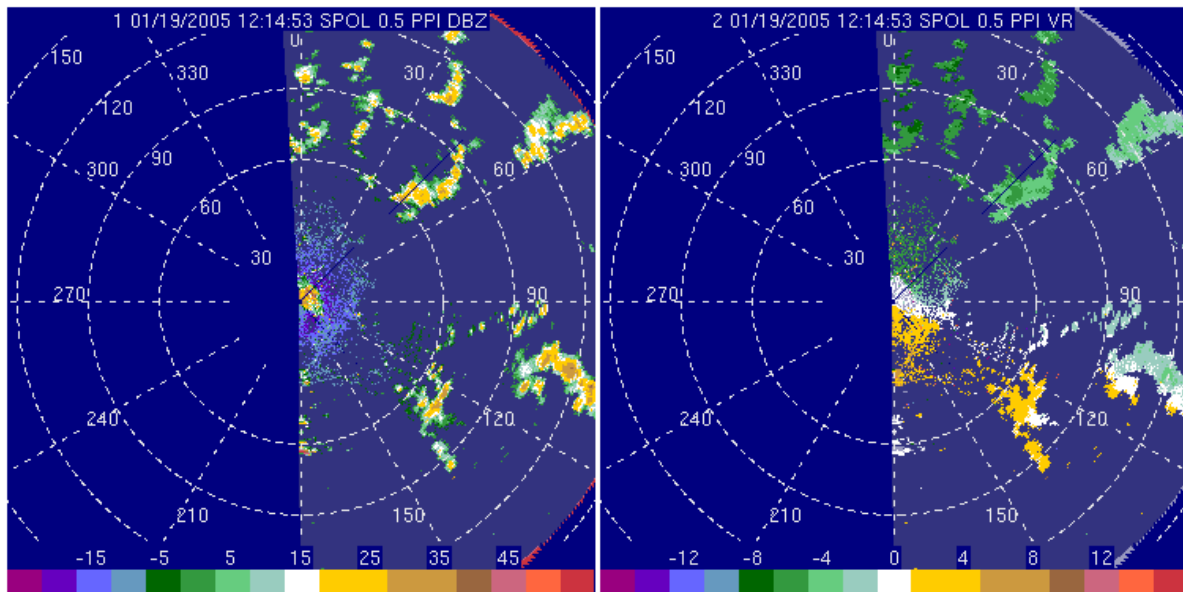


The storm moved very little and broke up by 05Z Jan 19. After several hours without radar echoes in the area, a large arc-echo developed due E of Barbuda by about 09Z (see next page). This feature, with transforamtions, persisted well into the local morning hours and continued to show some signs of rotation.



Another group of small echoes conglomerated into an even smaller mini-cyclone near 045°/70km from SPol by about 12Z. This group was sampled extensively by the Wyoming King Air between 12:10 and 12:30. It is seen in the VIS image of 12:15 UTC image below and in the corresponding radar image on the next page..





By 16Z (Jan 19) this area had a more linearly organized group of cells lined up with the winds, and by 18:30Z no echoes were seen.

A little more detail about the King Air cloud observations are included in the daily flight summaries for the two days involved. At a first glance, there was nothing terribly unusual about the individual cells.

Thanks to Bob Rilling (NCAR/EOL) for making the SPol data available and for providing a browsing tool which made preparation of this note much easier.