

Using GOES imagery on AWIPS to determine cloud cover and snow cover

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This TA-lite will show how AWIPS can be used to determine cloud cover and snow cover. A 4-panel image of [VIS, IR, fog/refl/IR, and fog/refl](#) from 18z on 18 Feb 2000 shows many interesting features. The VIS clearly depicts bare ground (Snake River plain and western Utah, for example). However, over much of the area it is difficult to distinguish between snow cover and cloud cover. This determination will obviously have a big impact on the public and aviation forecasts. The IR imagery (upper right panel) is not much help in differentiating snow cover from clouds. The fog/reflectivity product (lower right panel) clearly shows water clouds (white areas) over SE Montana, much of Wyoming, E Idaho, and NE Utah. The areas that are white in the VIS imagery and dark in the fog/reflectivity product imagery are snow cover (much of NE Montana, central Montana, portions of W Wyoming, and central Idaho).

[Fading](#) between the VIS and fog/reflectivity product (toggle on AWIPS) clearly defines the cloud covered areas. Of course, we do not know if the water clouds identified by the fog/reflectivity product are fog or stratus. So, surface observations are important to determine the cloud type. At [18Z](#) we see that some of the small cloud patches are fog and some are stratus. It is also interesting to note that some of the METARs show cloud cover, yet the cloud cover is just a small patch of clouds near the METAR site and that surrounding areas are clear. It is obvious that if the just METARs were used that the areal coverage of cloud cover might be overestimated.

A [loop](#) is of course also helpful to determine if the fog and/or stratus are diminishing in area coverage. The loop also allows the use of the VIS imagery to see cloud motion over snow covered ground.

This TA-lite is just a quick example how the GOES imagery on AWIPS can be used with surface based observations to help in short range forecasting and nowcasting.

VIS, IR, fog/refl/IR, and fog/refl

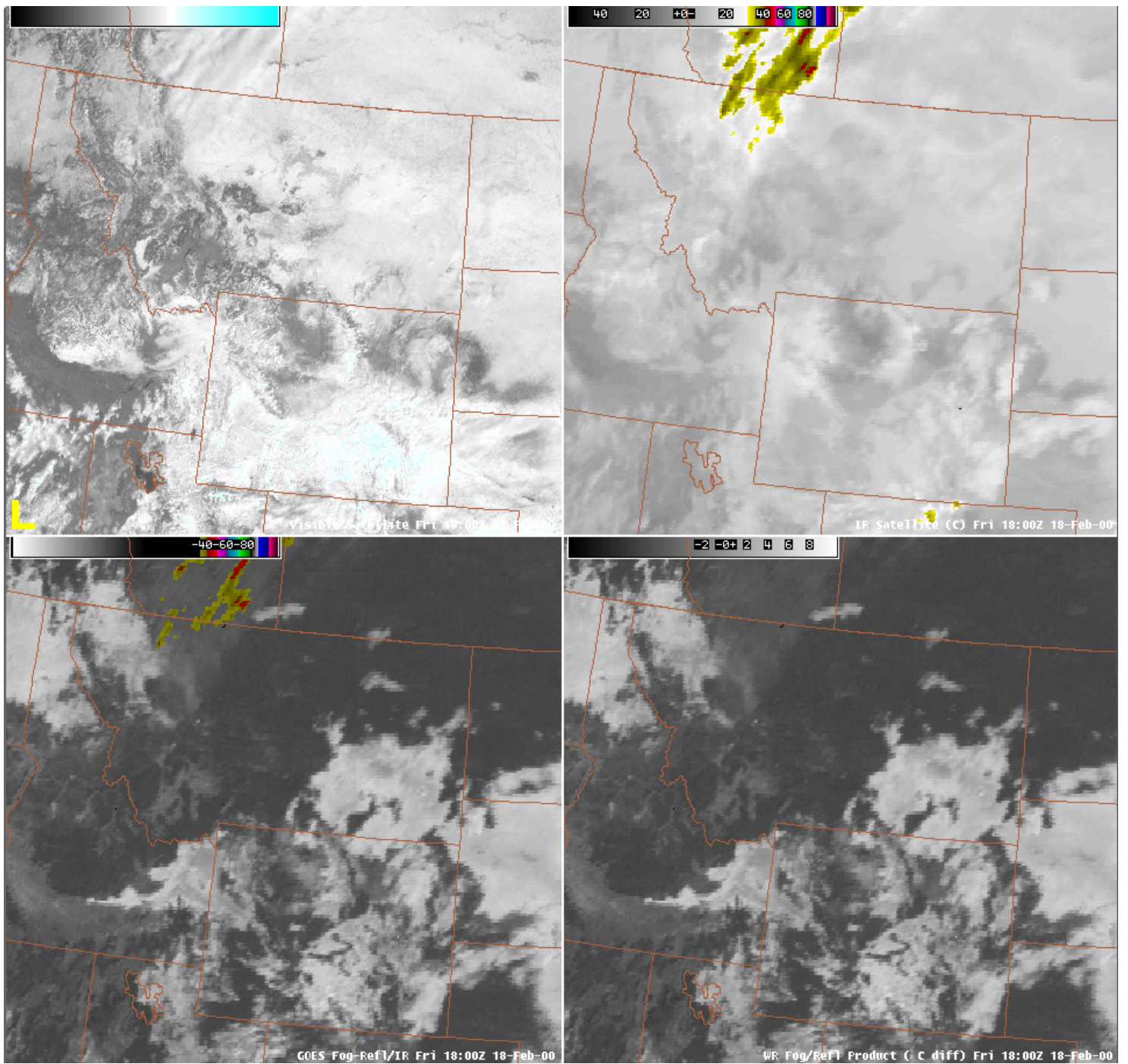
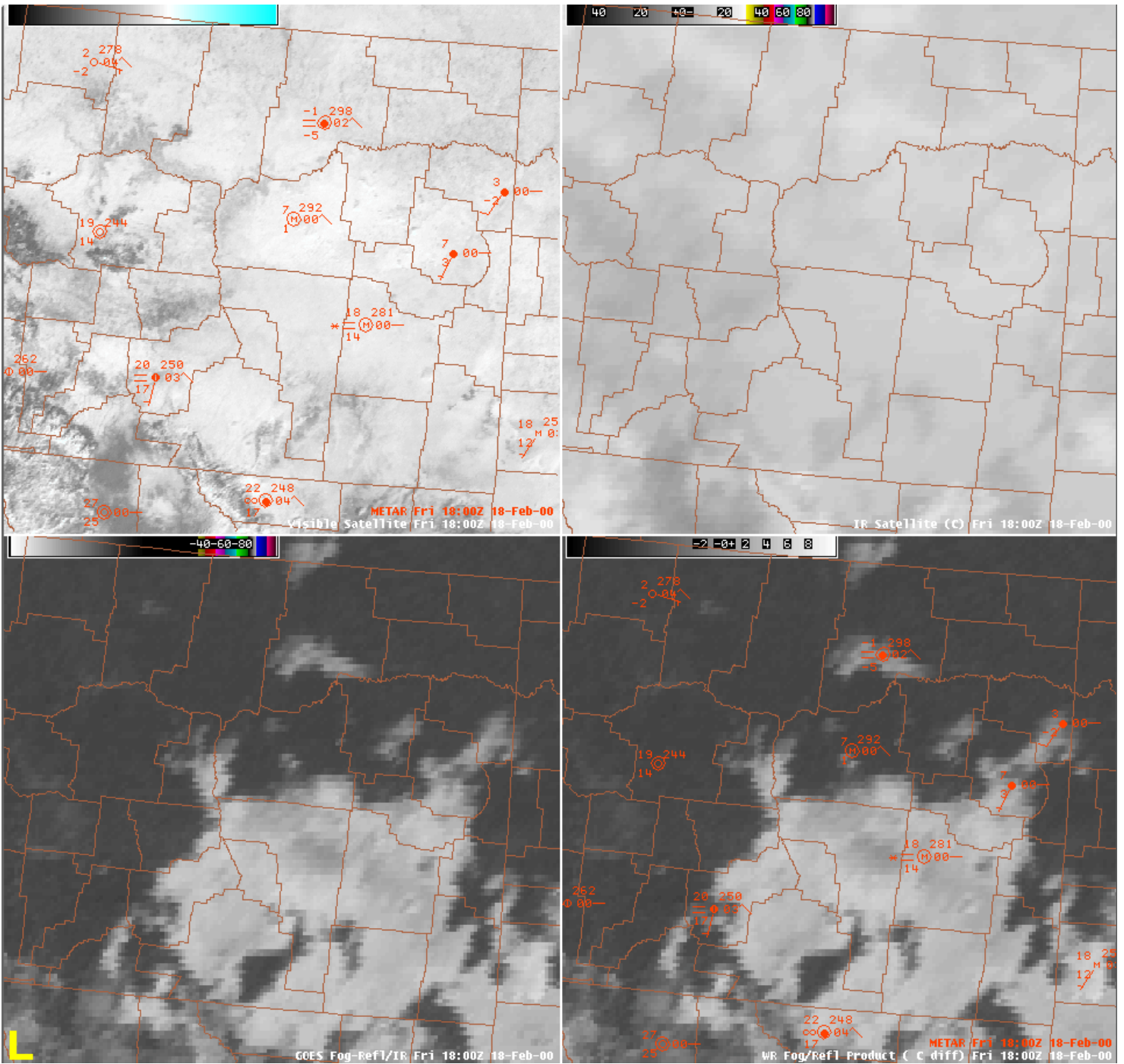
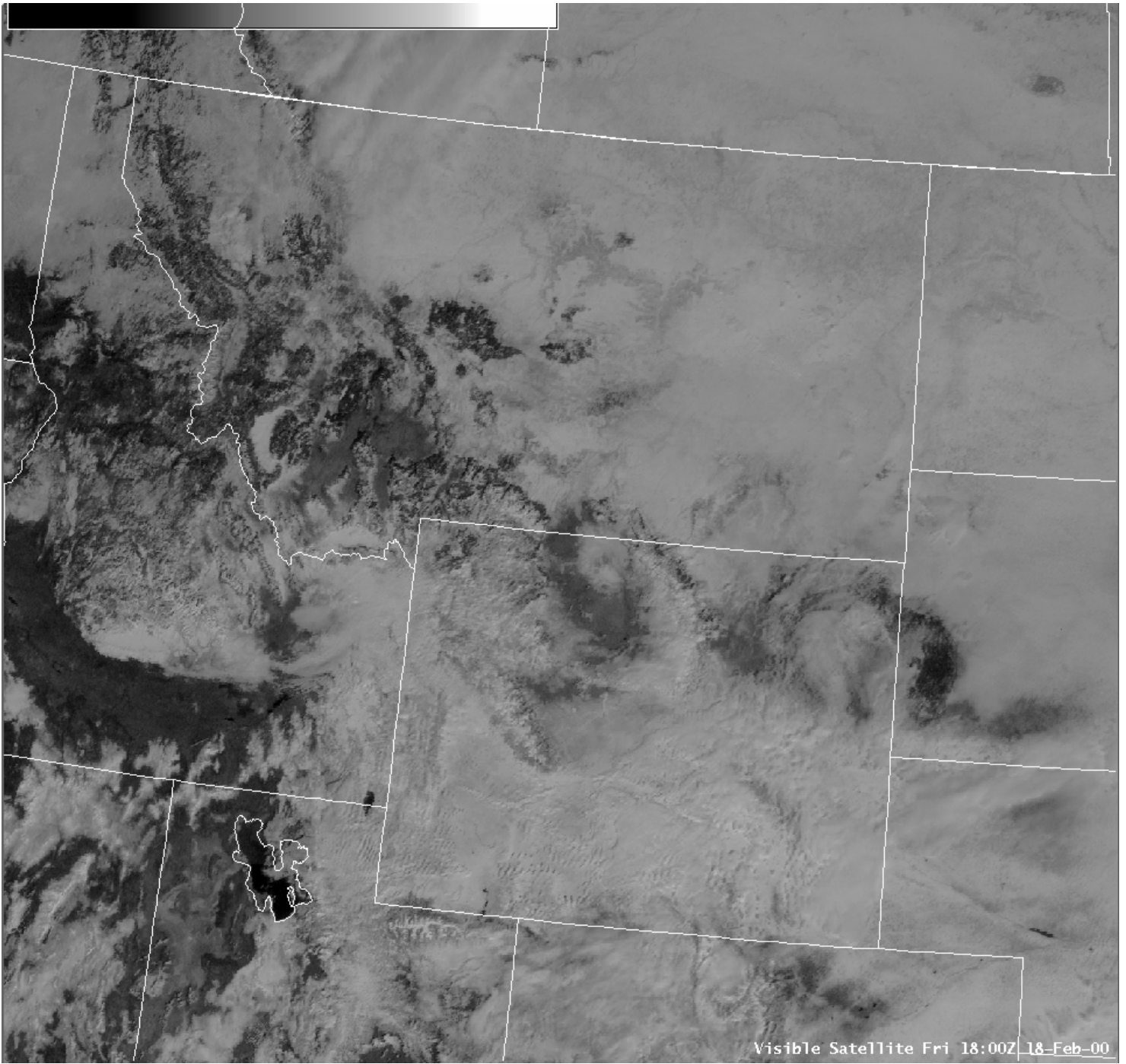


Figure at 18z

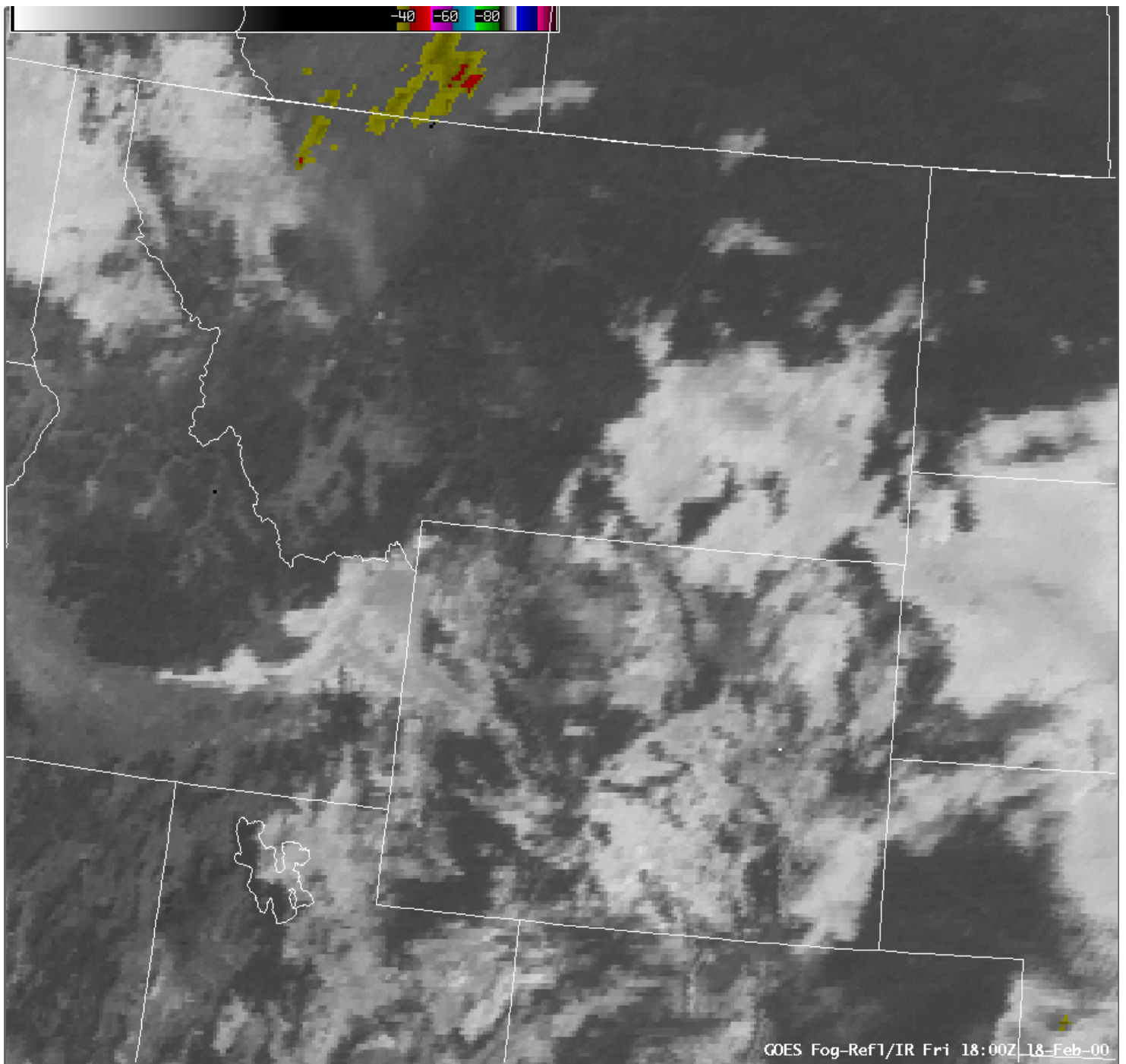


Images used within the Fading Loop, are:

vis18z.gif

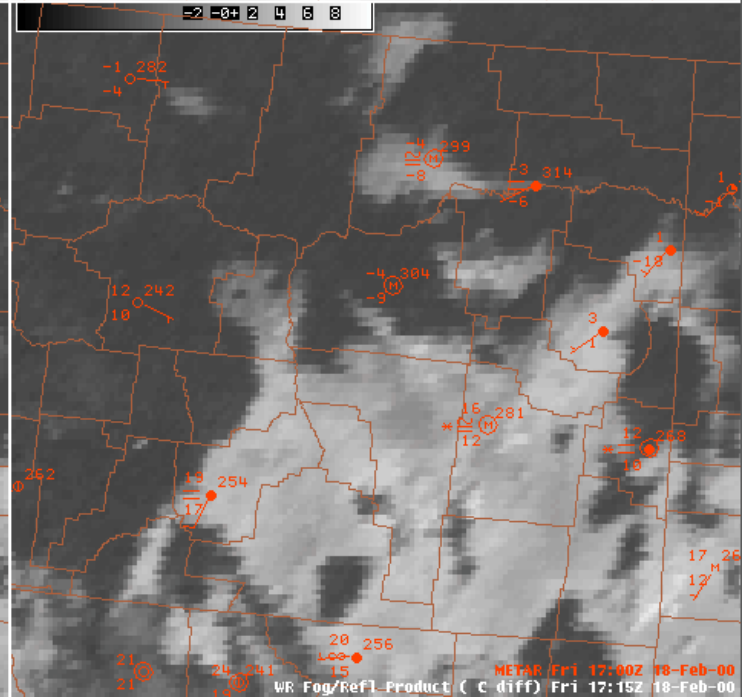
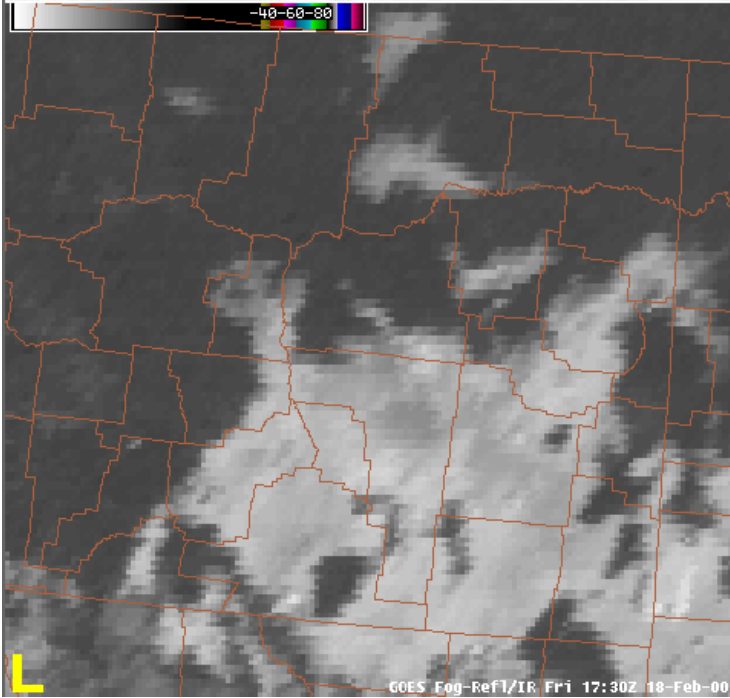
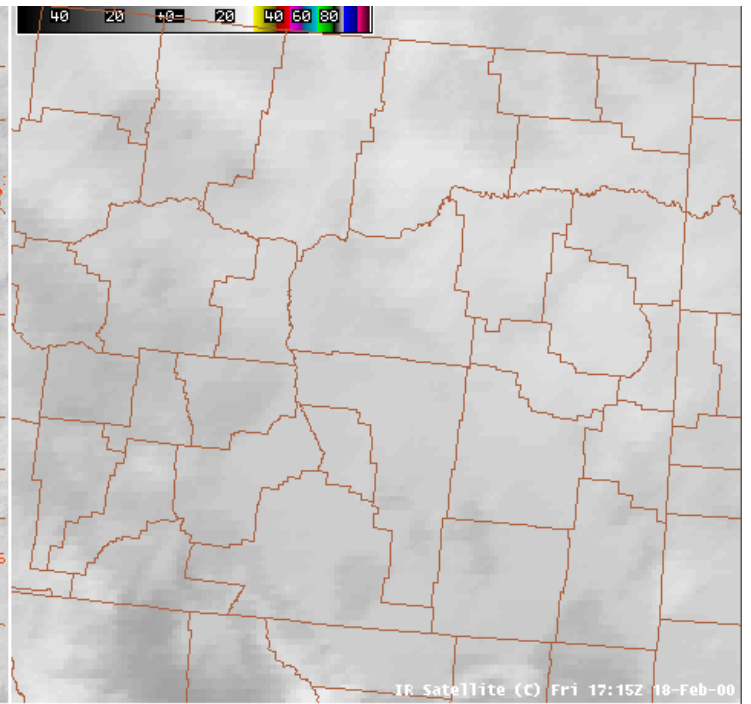
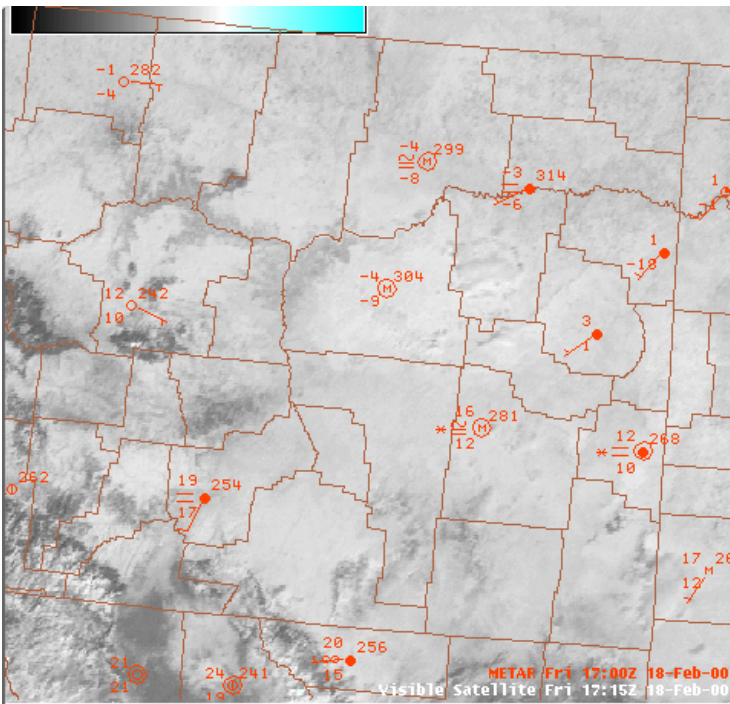


fogrefl18z.gif

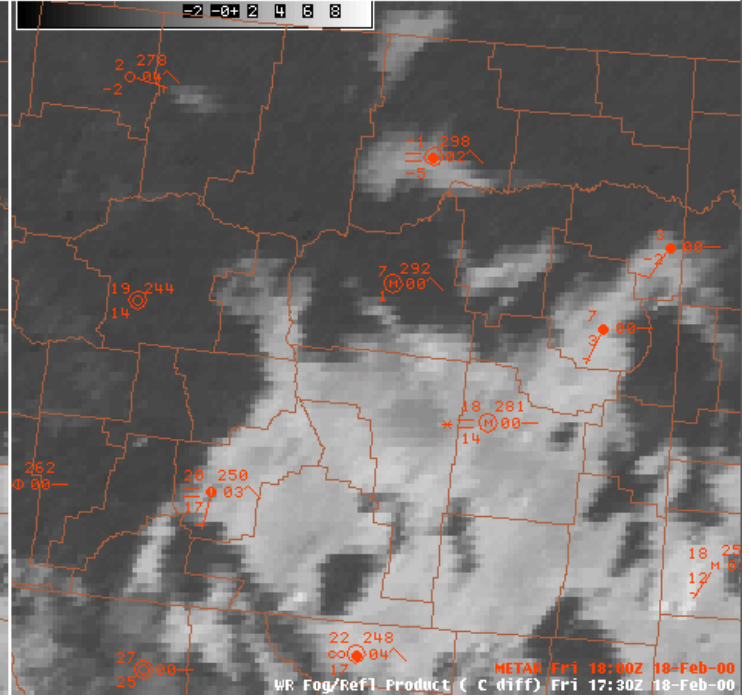
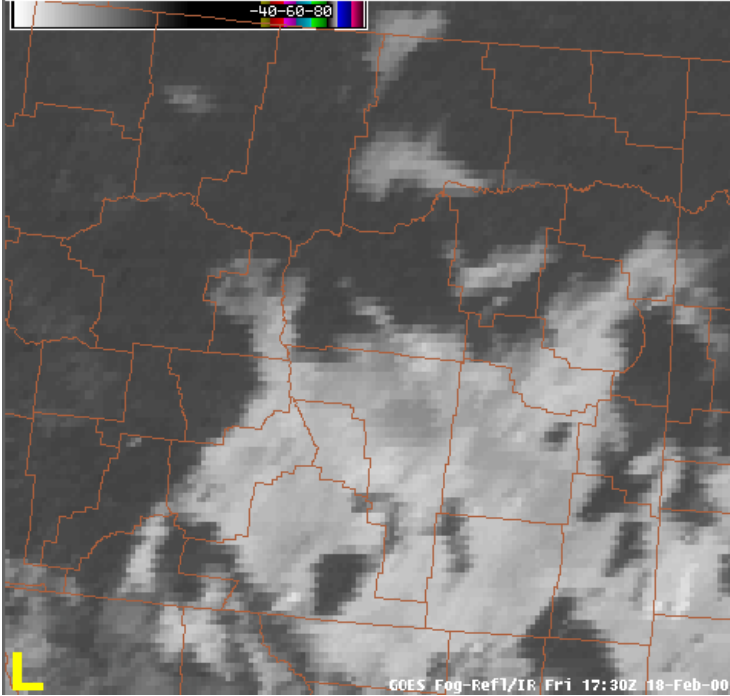
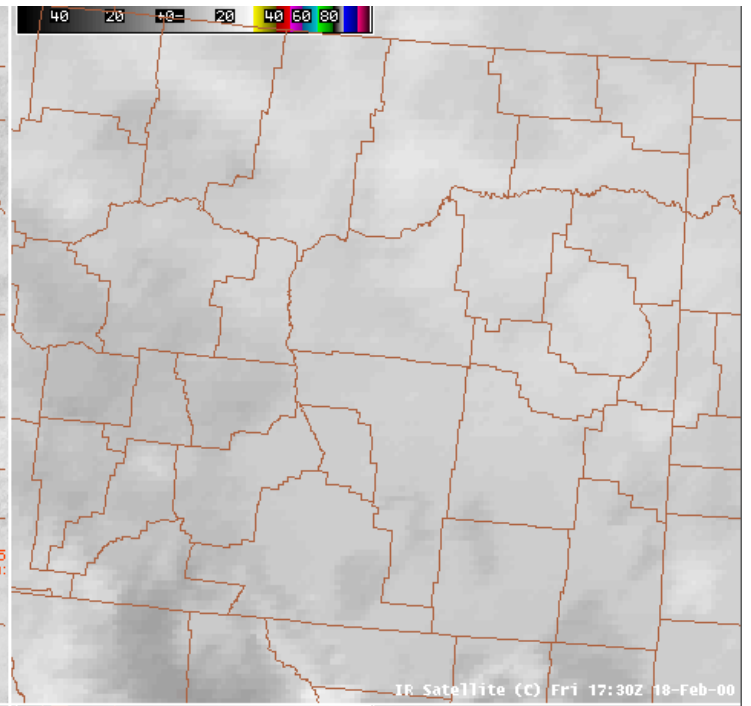
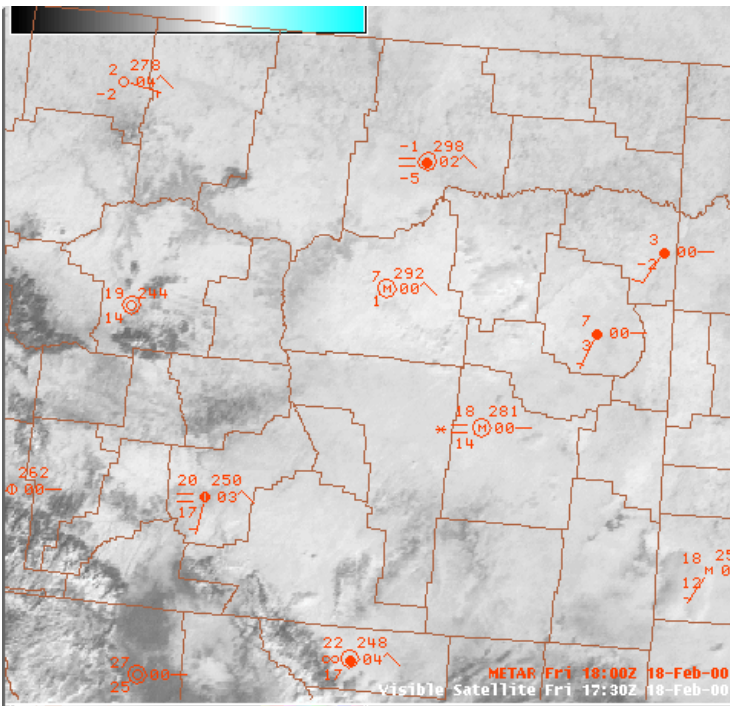


Images used within the Last mentioned Loop, are:

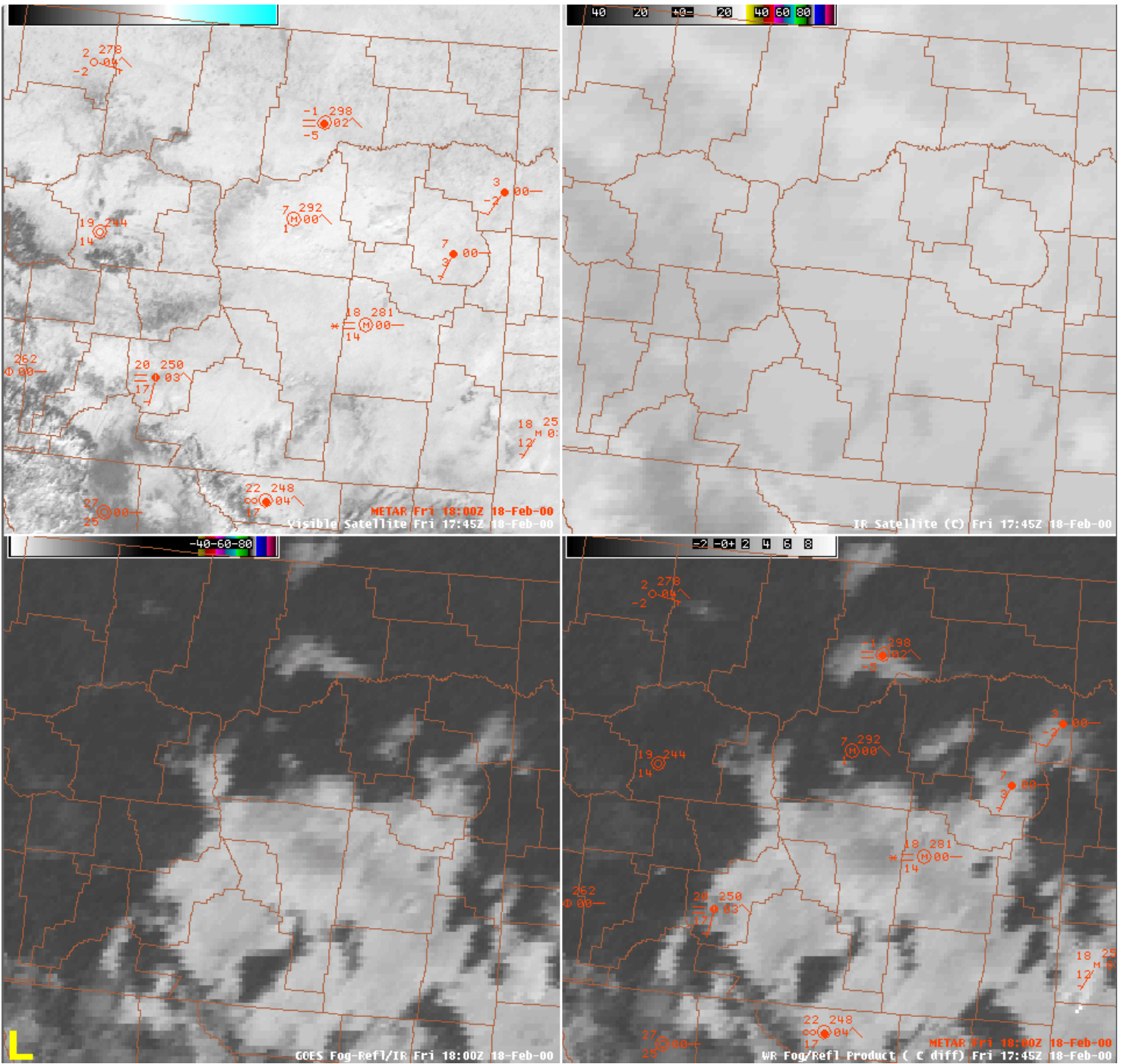
4panmetar1715z.gif



4panmetar1730z.gif



4panmetar18z.gif



4panmetar18z.gif

