Forecasting in Vortex2 & The "VOC"

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NSSL

Forecasting in Vortex2

- VOC will support FC and do things FC cannot do
- VOC Staffing
  - "mesoscale" desk 2 staff
  - "situational desk" 2 staff
  - Only 2 phones….cannot handle many calls at once. Texting or chatting preferred.

Forecasting in Vortex2

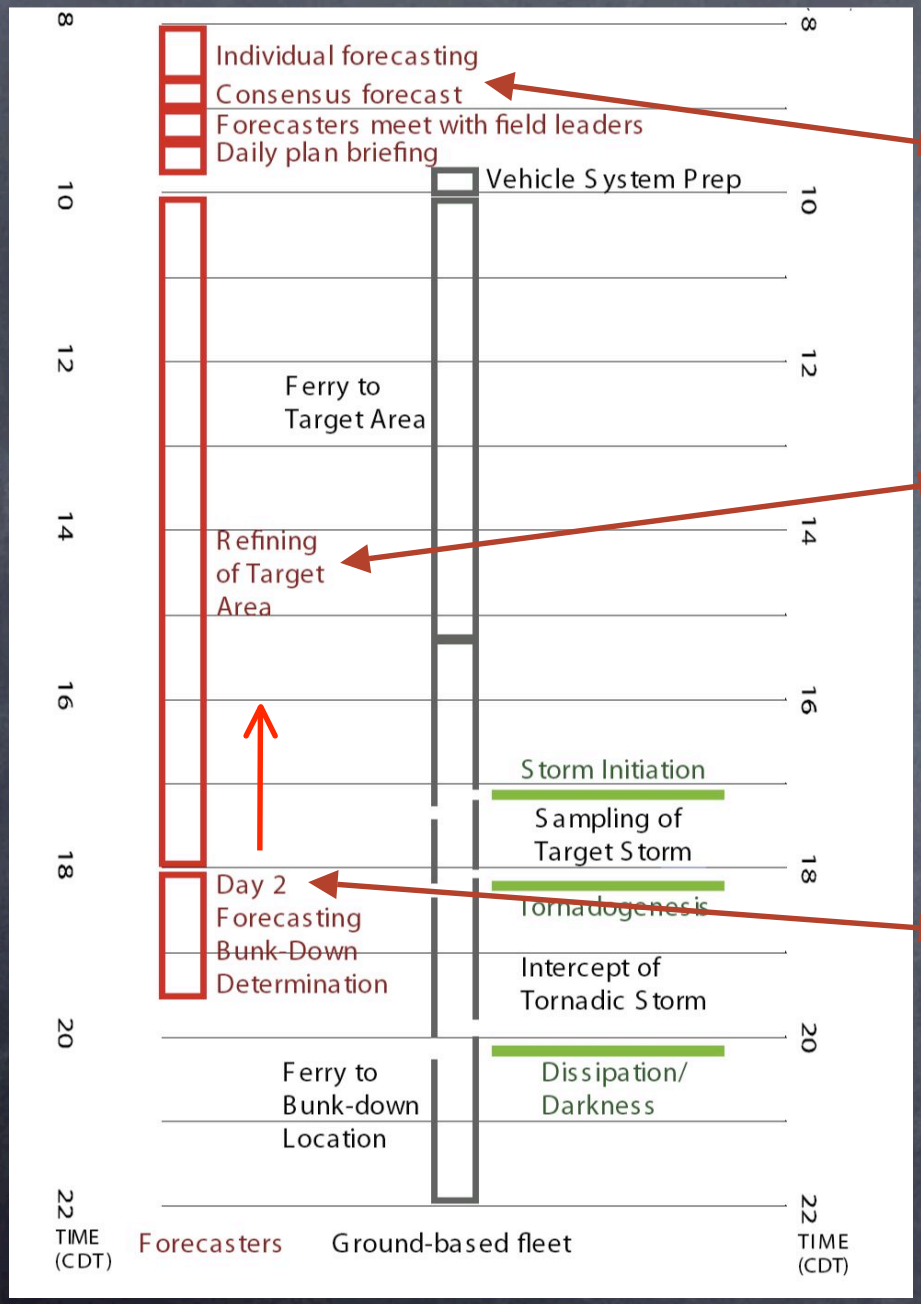
- VOC focus will be to communicate information not available to field teams.
- Communicate our interrogation of forecast output from the high-resolution overnight hi-res forecasts being run
  - 18 member 4-km ARW/NMM ensemble (CAPS)
  - 4-km ARW (NSSL), 4-km NMM (EMC)
  - 3-km ARW, RR based (NCAR)
  - 1-km ARW (CAPS)
- VORTEX2 is a primary focus of the HWT Spring Experiment
  - participants issue 3-7p & 7p-11p svr wx prob outlooks by ~10:00a CDT
  - participants issue refined prob. outlooks for 3-7p and 7-11p periods by ~2:30p CDT
  - VOC input regarding Day 1 planning include contribution from SPC and HWT

Forecasting in Vortex2

- For 0-6 hour forecasting, VOC will be able to interrogate specialized guidance:
  - Two 12Z 4-km ARW runs (w & w/o radar data assim.) **with 20-min output** (CAPS)
  - 3-km ARW 12Z init, RR based (NCAR)
  - Hourly init 3.1-km HRRR to 12 h (GSD)
  - Hourly analyses from 30-member 20-km ARW ensemble w/EnKF surface data assimilation (NSSL)
  - Experimental CI product from hi-res satellites
  - refined forecasts from HWT forecasters

Forecasting in Vortex2

- VOC will provide Day 2 guidance:
  - Provide initial thoughts on day 2 for morning meeting.
  - Day 2 guidance will be updated after the 12Z model guidance has completed, sometime early-afternoon
  - A final set of inputs will be given before 6 PM local time to the logistics coordinator to enable finalizing hotel room reservations.



Activities in VOC:

- VOC and HWT forecasters develop Day 1 and initial day 2 forecast by ~10am…participate in weather discussion
- VOC forecasters monitor conditions in broad target area…communicate suggested changes to target area to FC
- HWT Spring Exp. participants issue refined prob. forecasts by ~2:30p CDT
- VOC forecaster finalizes day 2 forecast and communicates with LC and FC (*any product wanted*?)
- VOC nowcaster monitors larger-scale conditions inside and outside of targeted storm … for situational support…

Situational Support in V2

- Be available to point teams back into the armada if they are lost.
- Assess the potential for new targets for the V2 armada to deploy to.
  - For fast moving days, assist the FC in watching out for potentially sig wx situations (hail or wind) for some teams.
  - Provide a new storm for the FC to examine more closely if requested. E.g., information about whether to drop south on the next storm, or the one after that. (aka, 8 June 1995?)
- Keep a safety watch for all teams, and be able to assist teams after dark if needed. Direct the support vehicle from NSSL.
- Assist teams who are having mechanical problems, or have had an accident, or need medical attention for a participant. This includes getting the support vehicle to the needed team to fix problems.

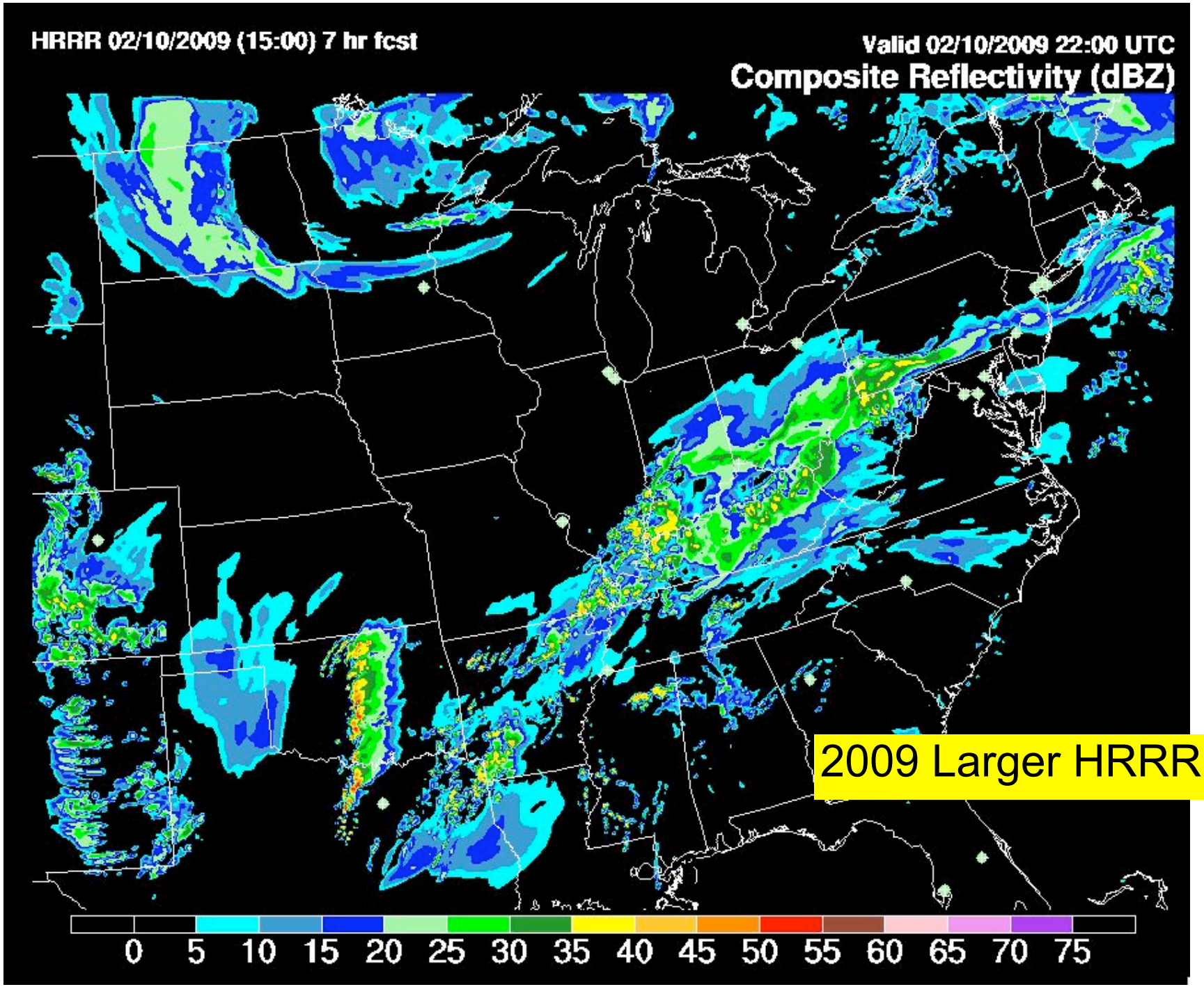
Summary of Fcstin' V2

- VOC operations has three main purposes:
  - day 1 forecast
  - day 2 forecast by 4 pm
  - Situational forecasting/support
- Need volunteers for 2.5 week periods
  - contact me or Lou
    louis.wicker@noaa.gov, michael.coniglio@noaa.gov

Initial test of 2009 larger HRRR

- 988 x 780
- 3.1 km grid
- Initialized from GSD backup RUC
- Initial time - 15z Tues 10 Feb 2009
- Run time - 50 min - 480 processors (ESRL supercomputer)
- Extra run added for 18z larger-HRRR run initialized from Rapid Refresh

Tanya Smirnova, Stan Benjamin, Steve Weygandt, Curtis Alexander, Brian Jamison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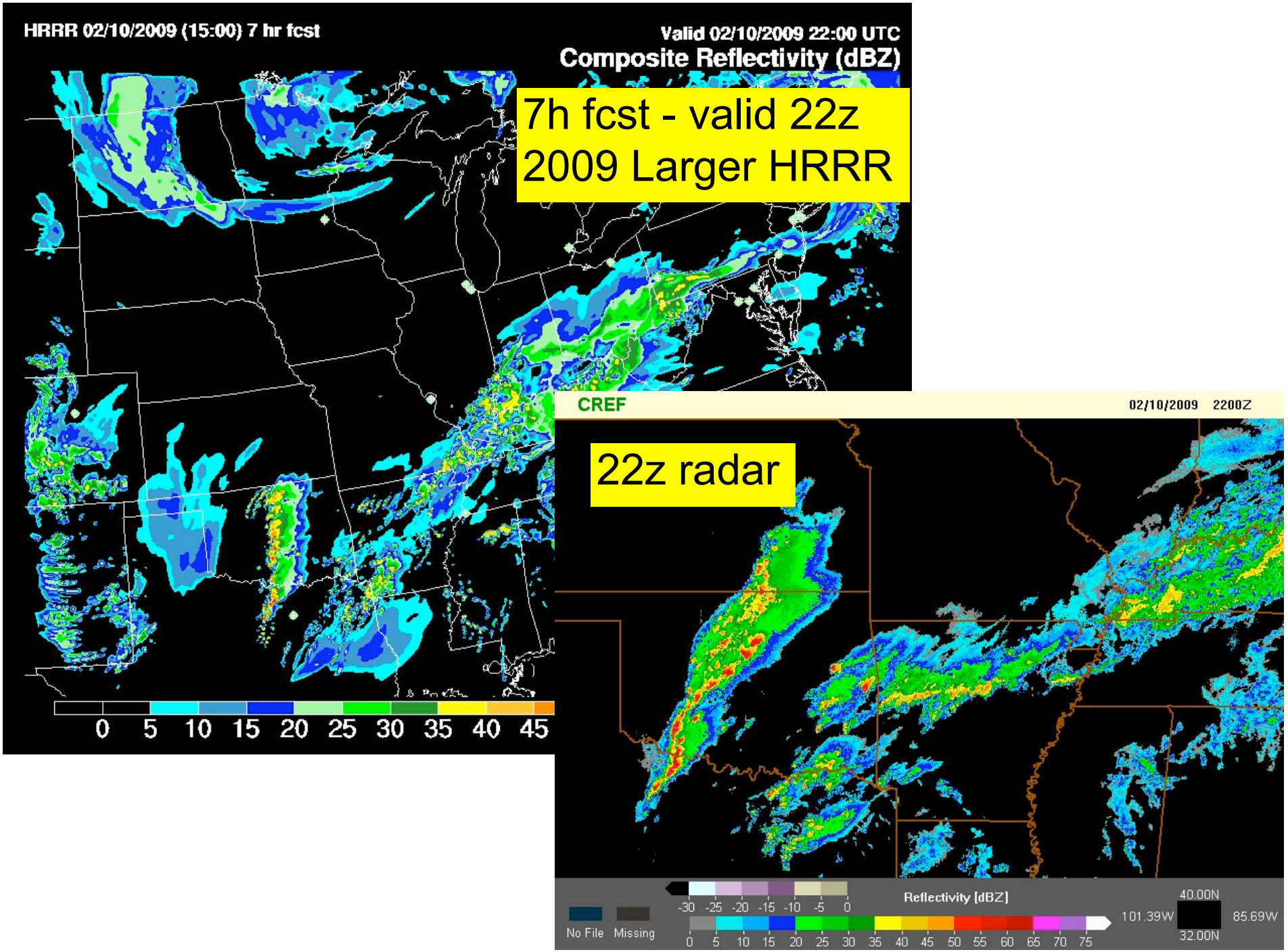
2009 Larger HRRR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CREF
02/10/2009 2200Z
22z radar
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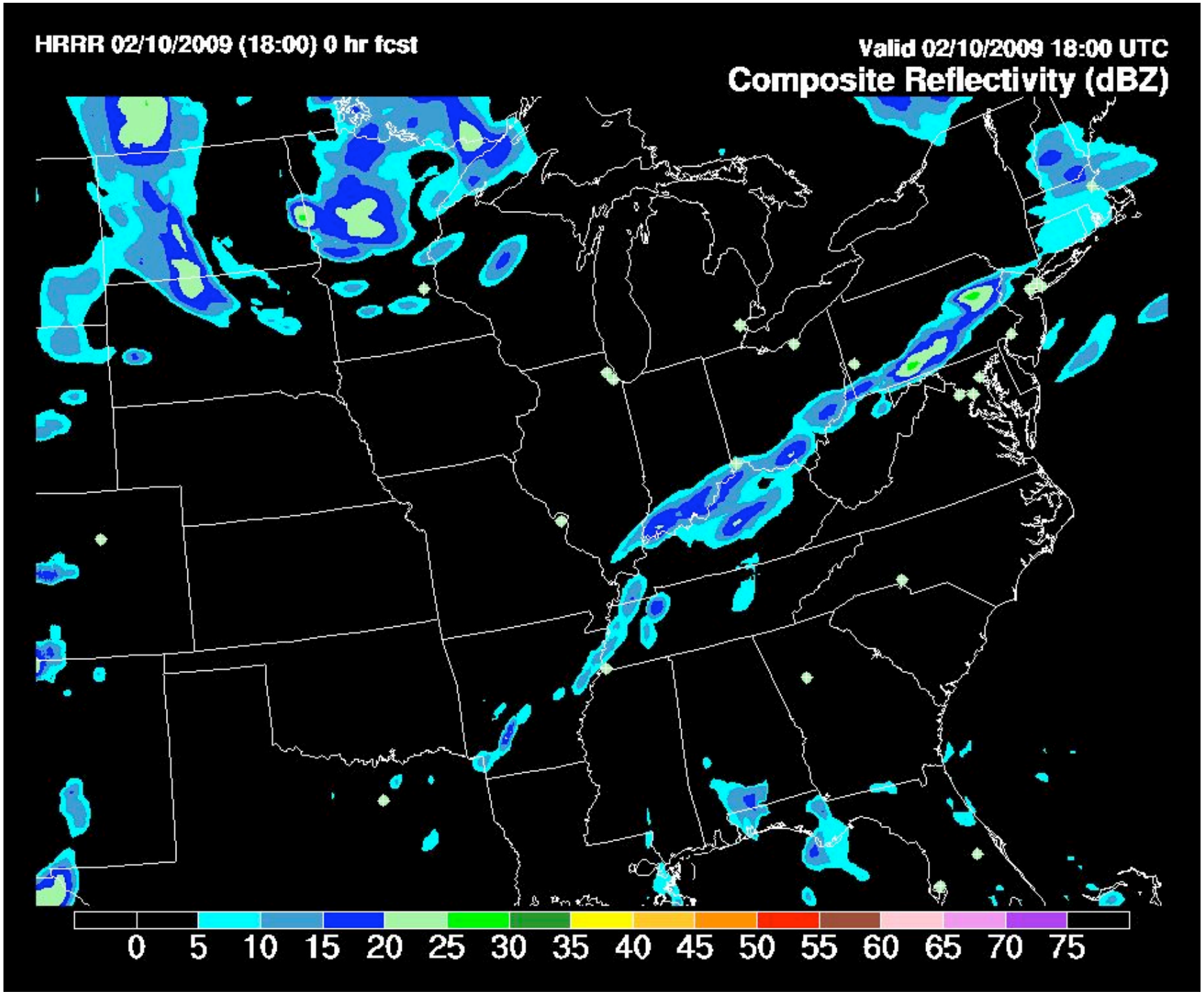
40.00N
101.39W
85.69W
32.00N

Following slides

- HRRR initialized at 18z 10 Feb 2009
- Radar-DFI initialized fields from Rapid Refresh (instead of RUC-radar-DFI initial fields)
- Improved Oklahoma convection forecasts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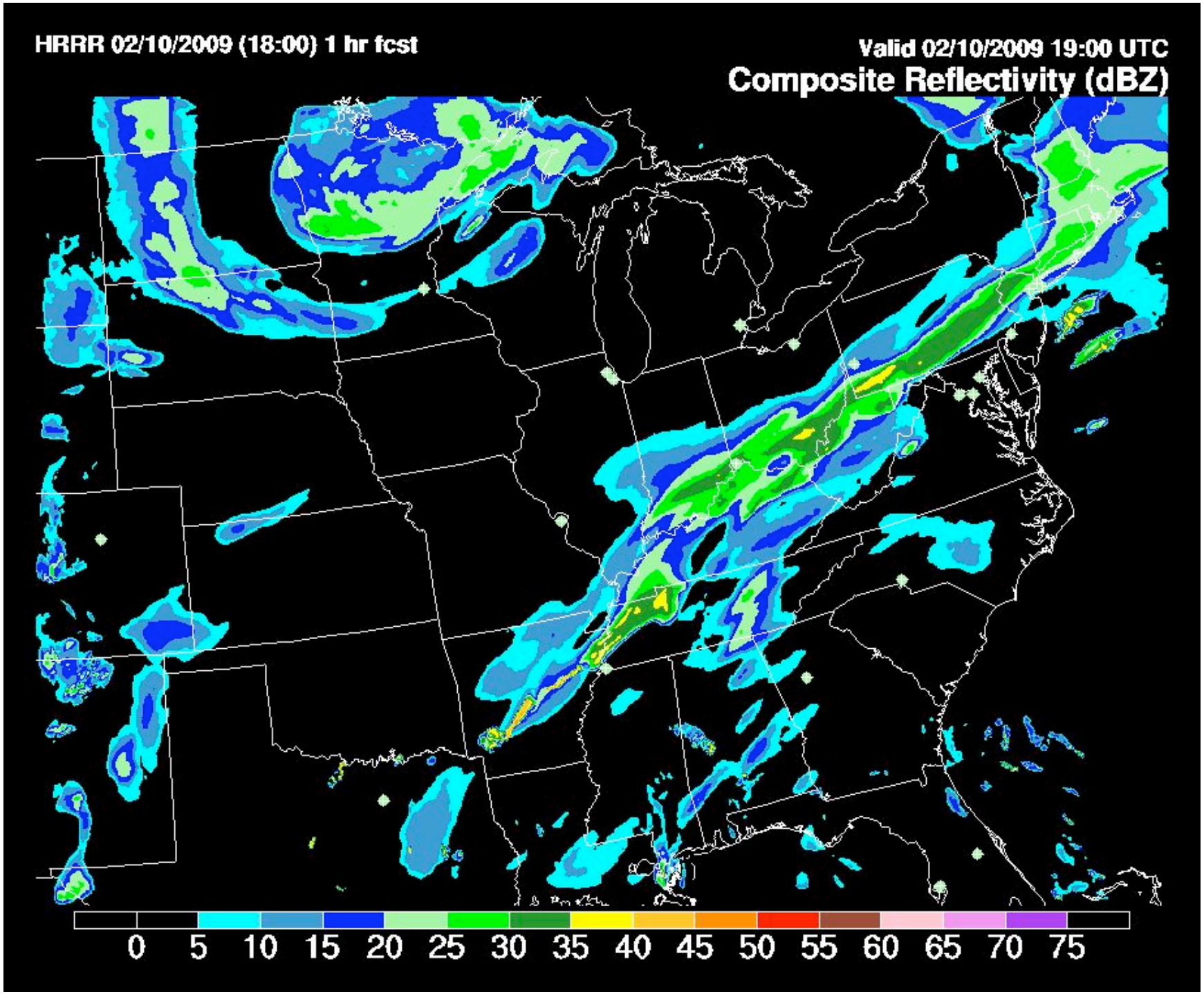
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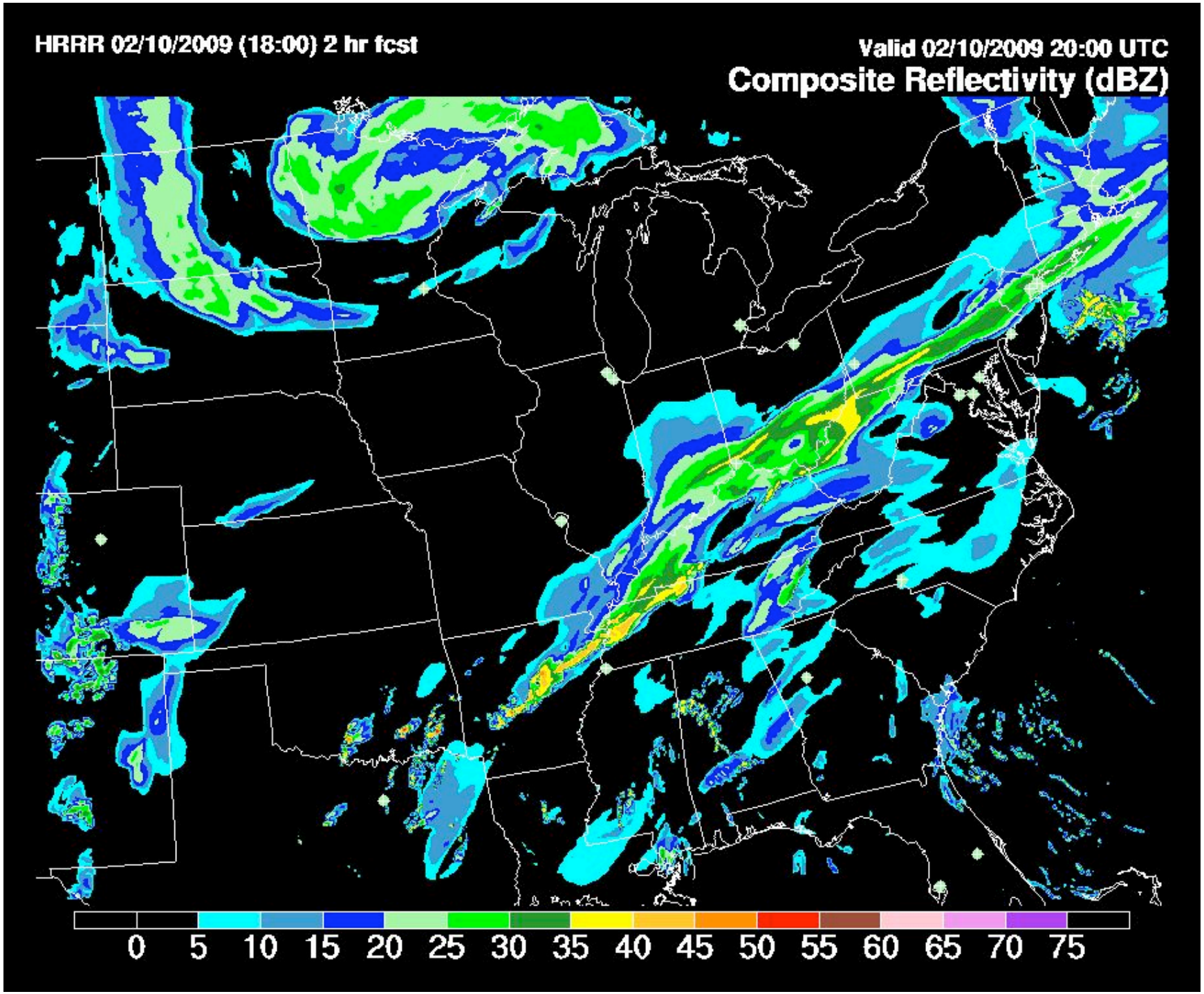
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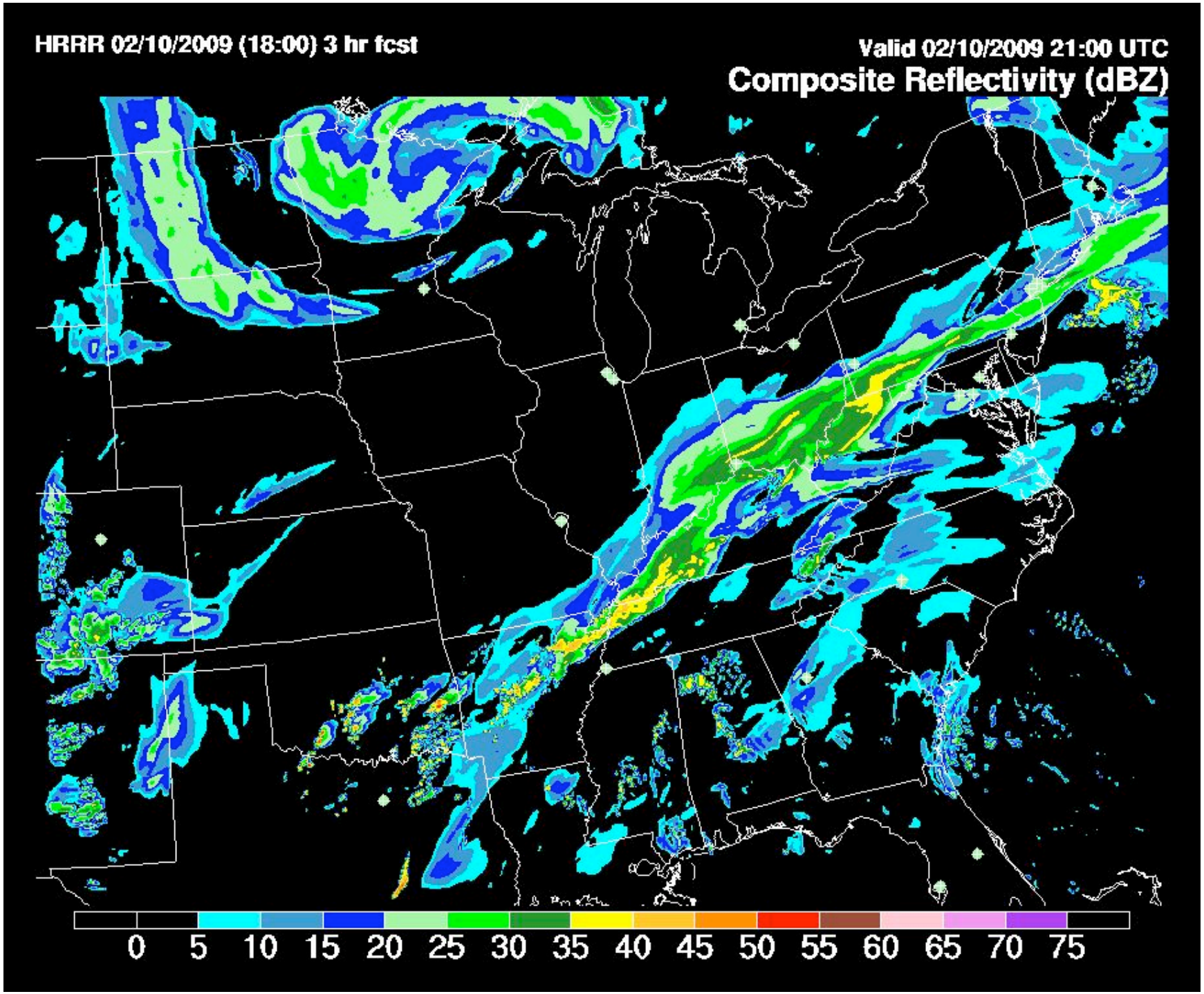
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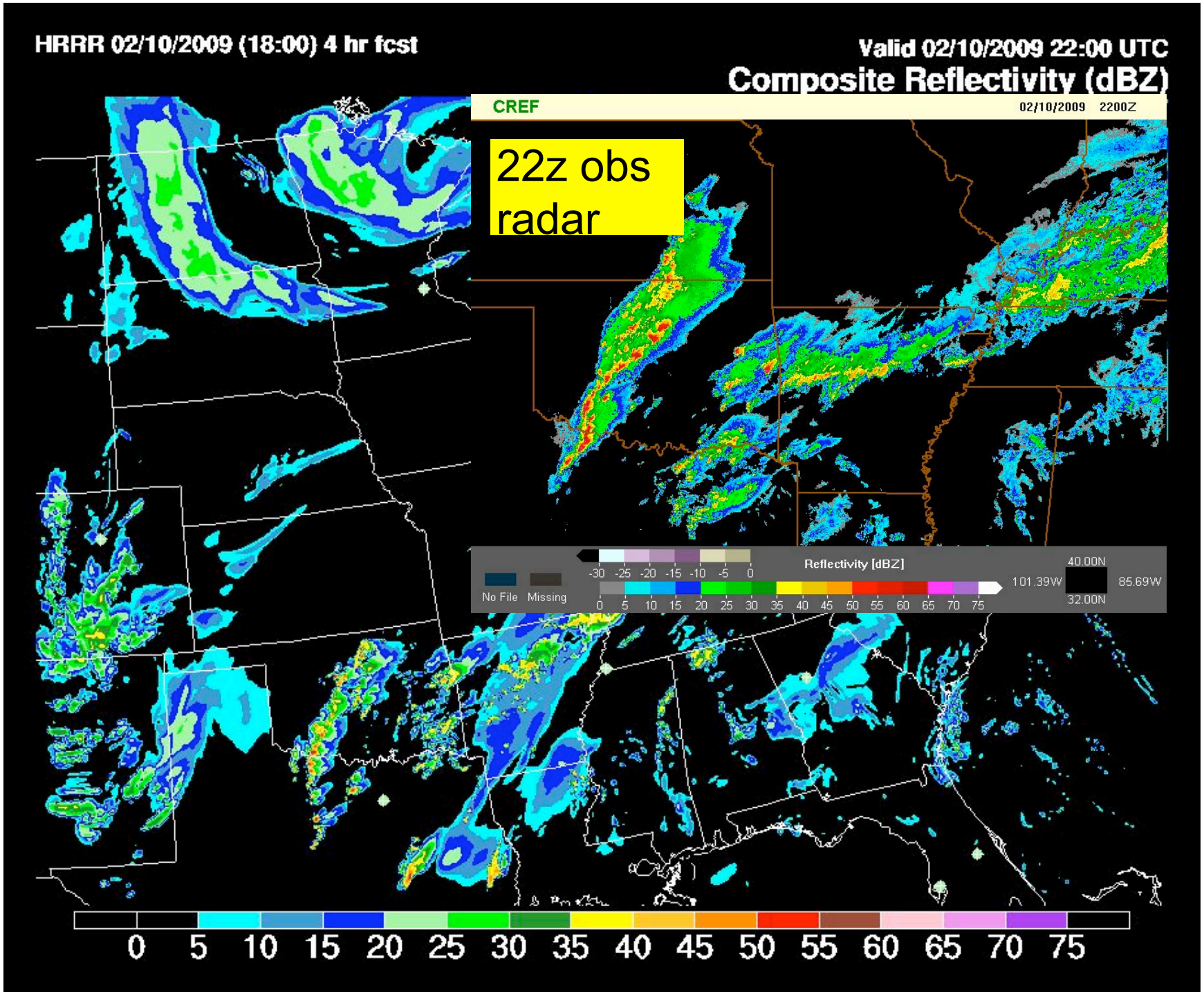
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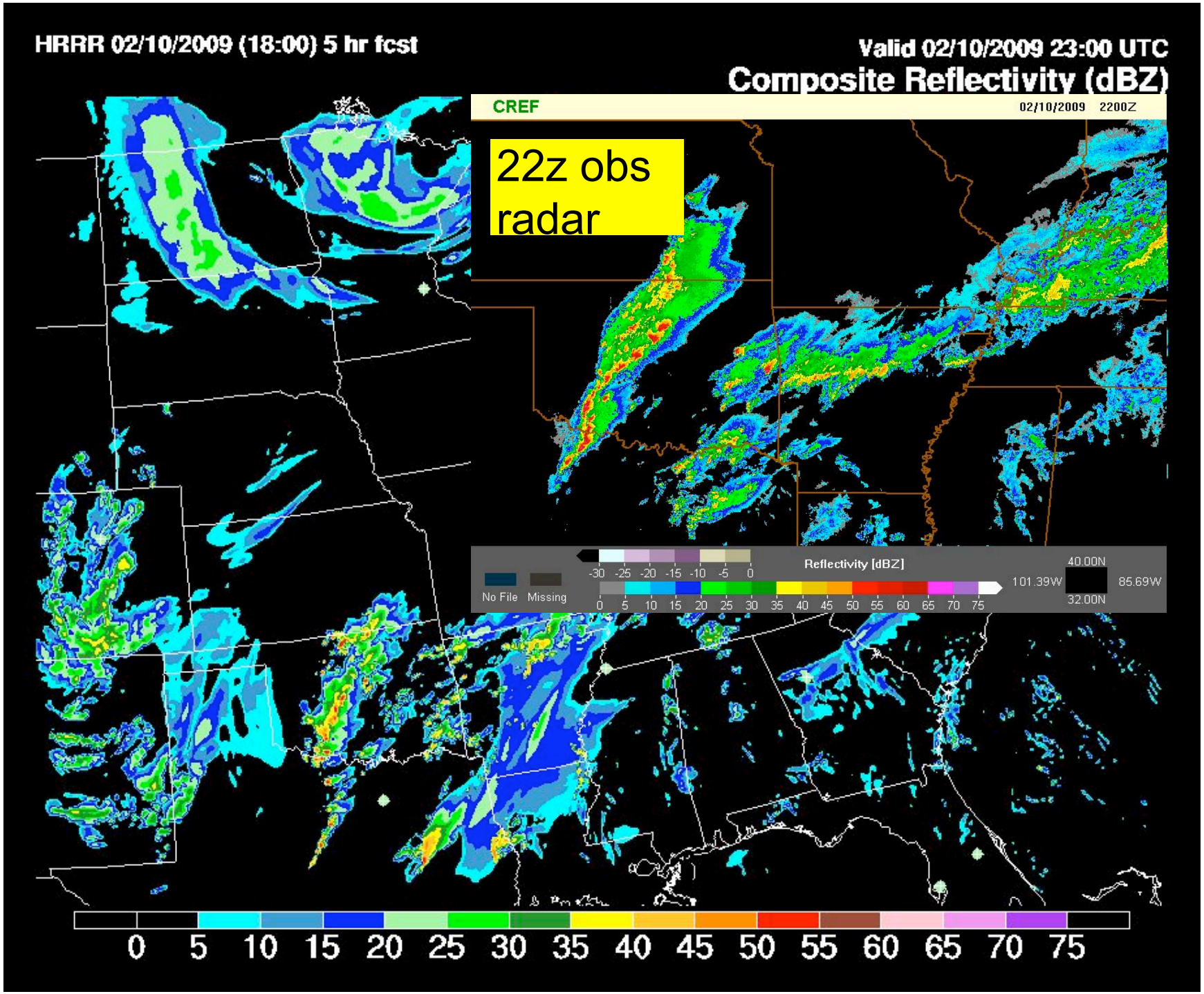
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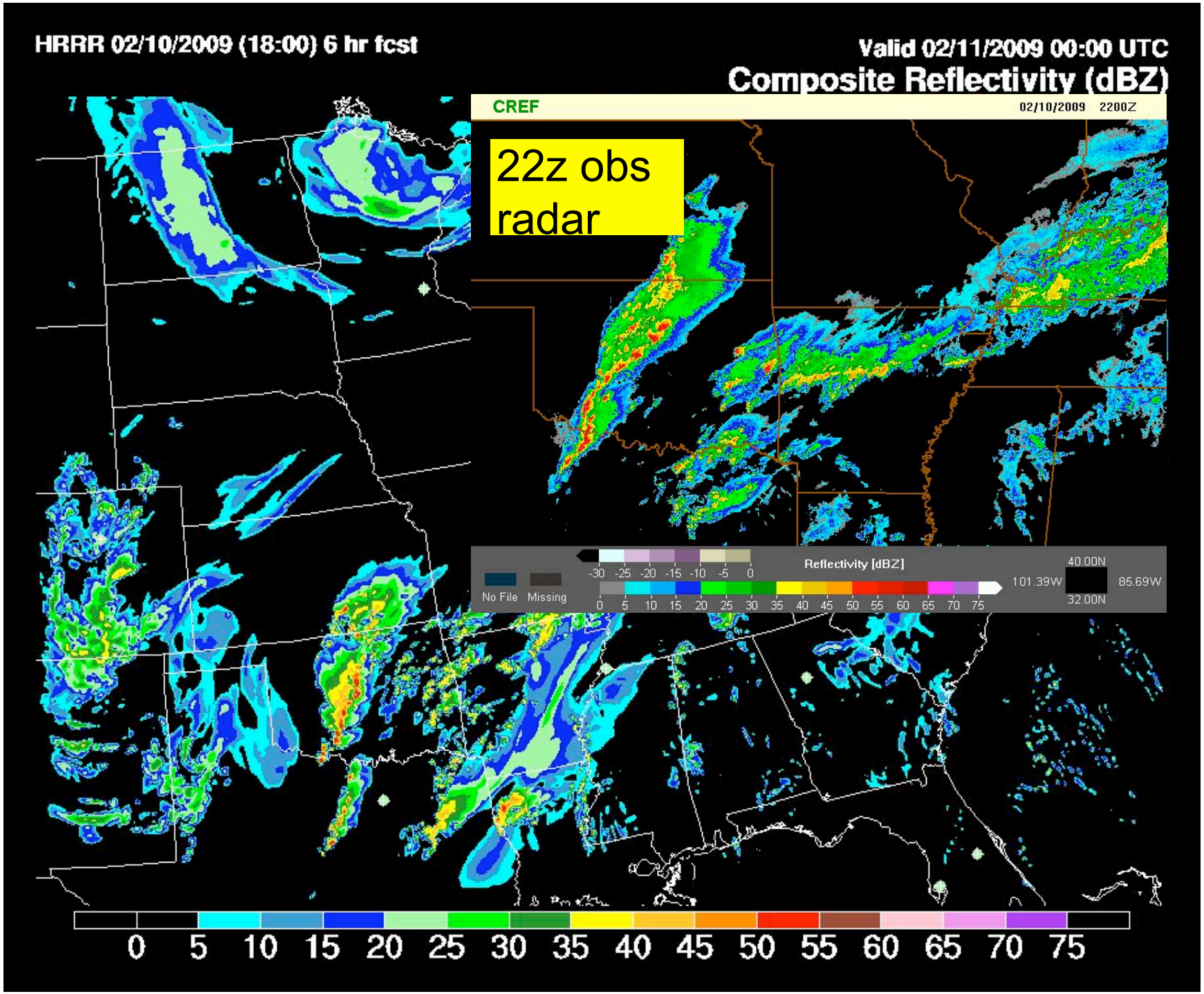
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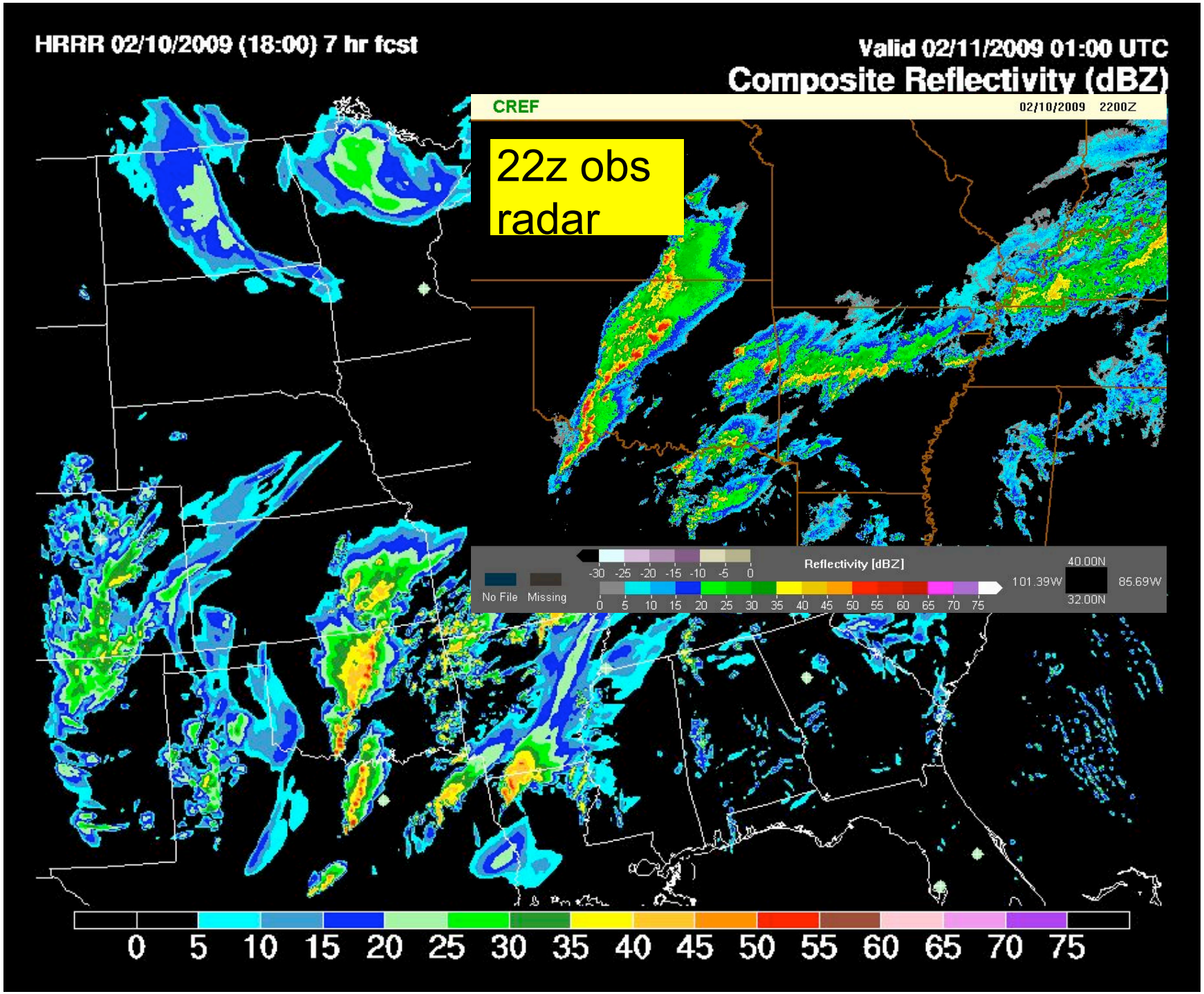
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02/10/2009 2200Z
22z obs radar
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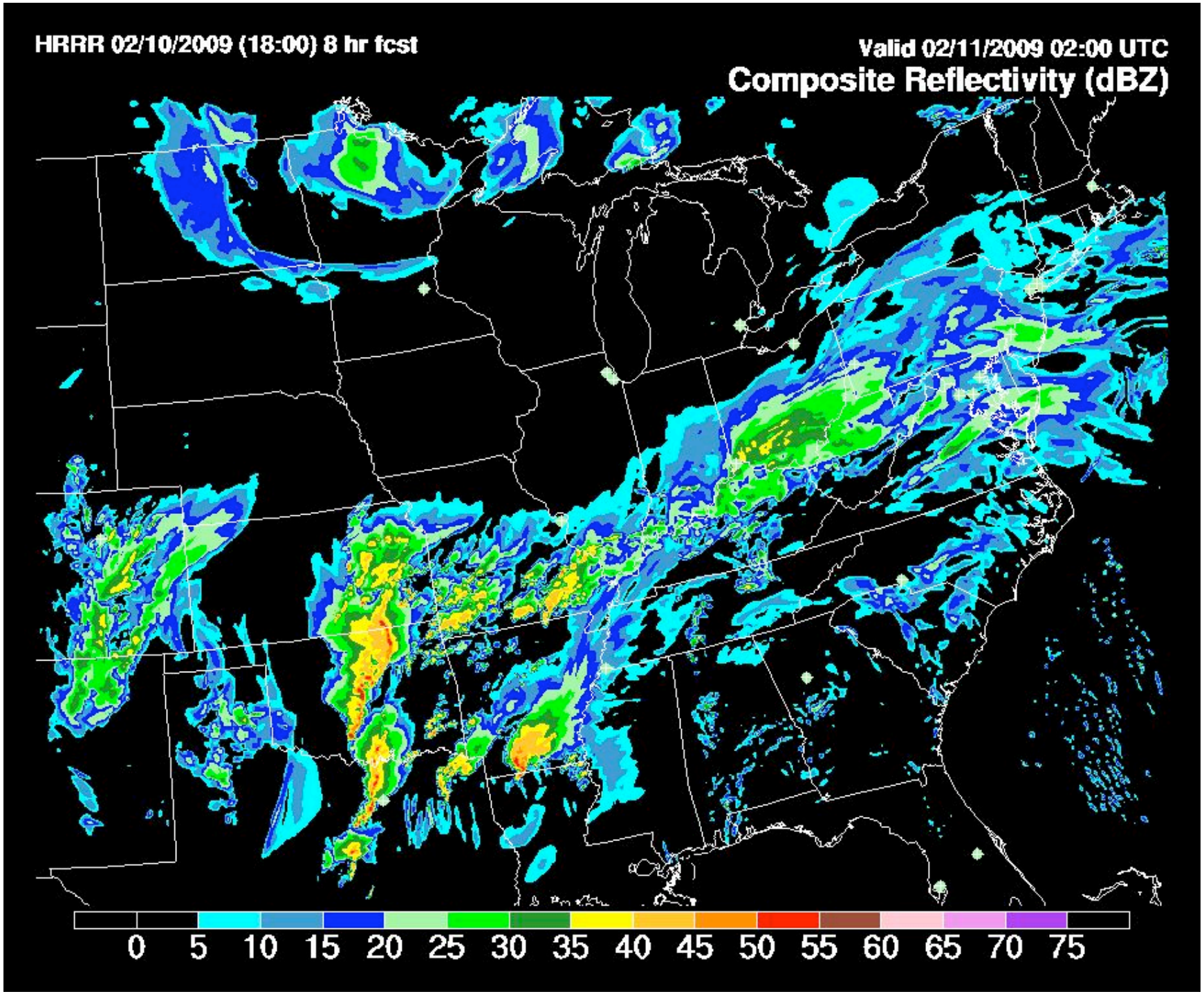
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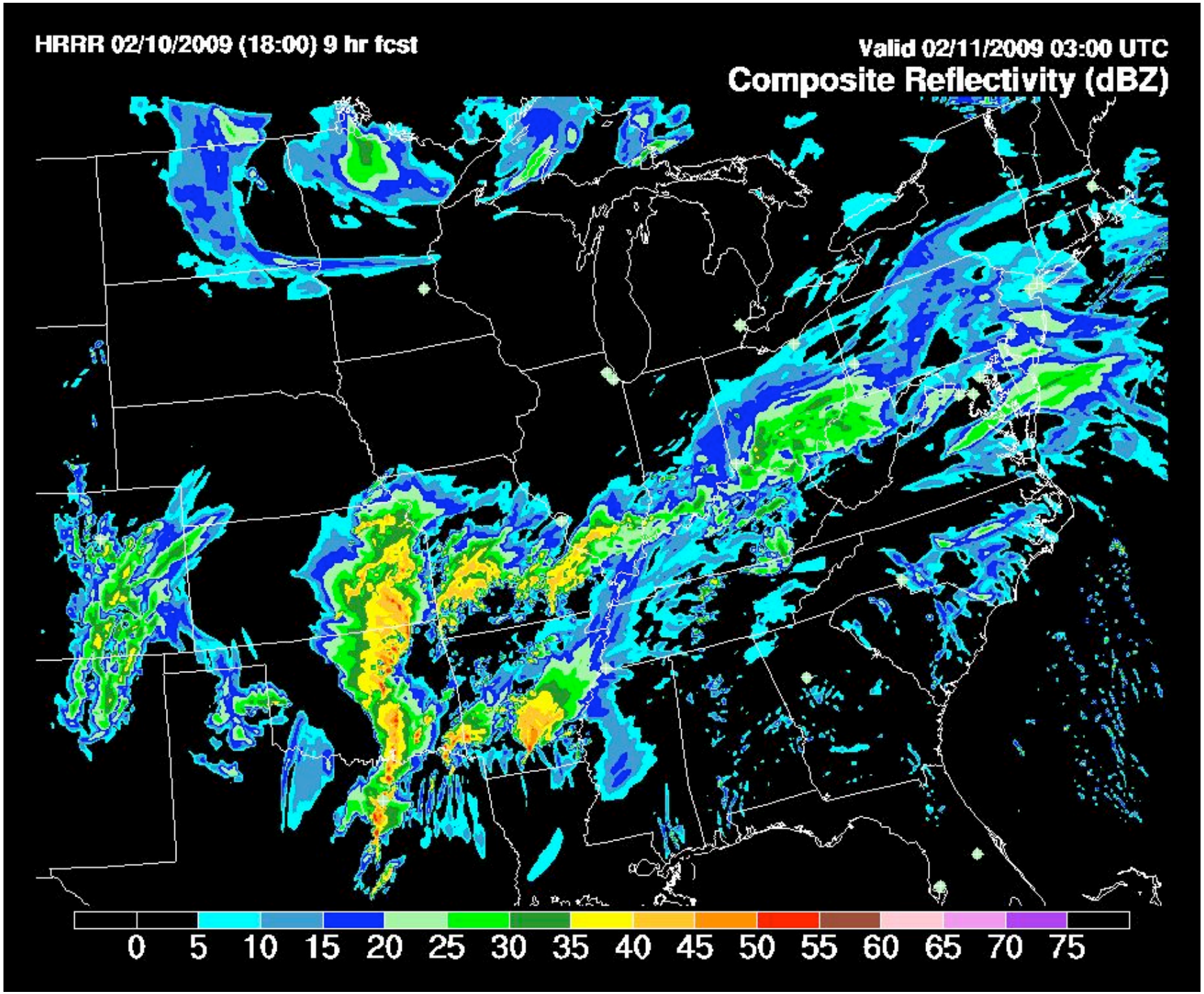
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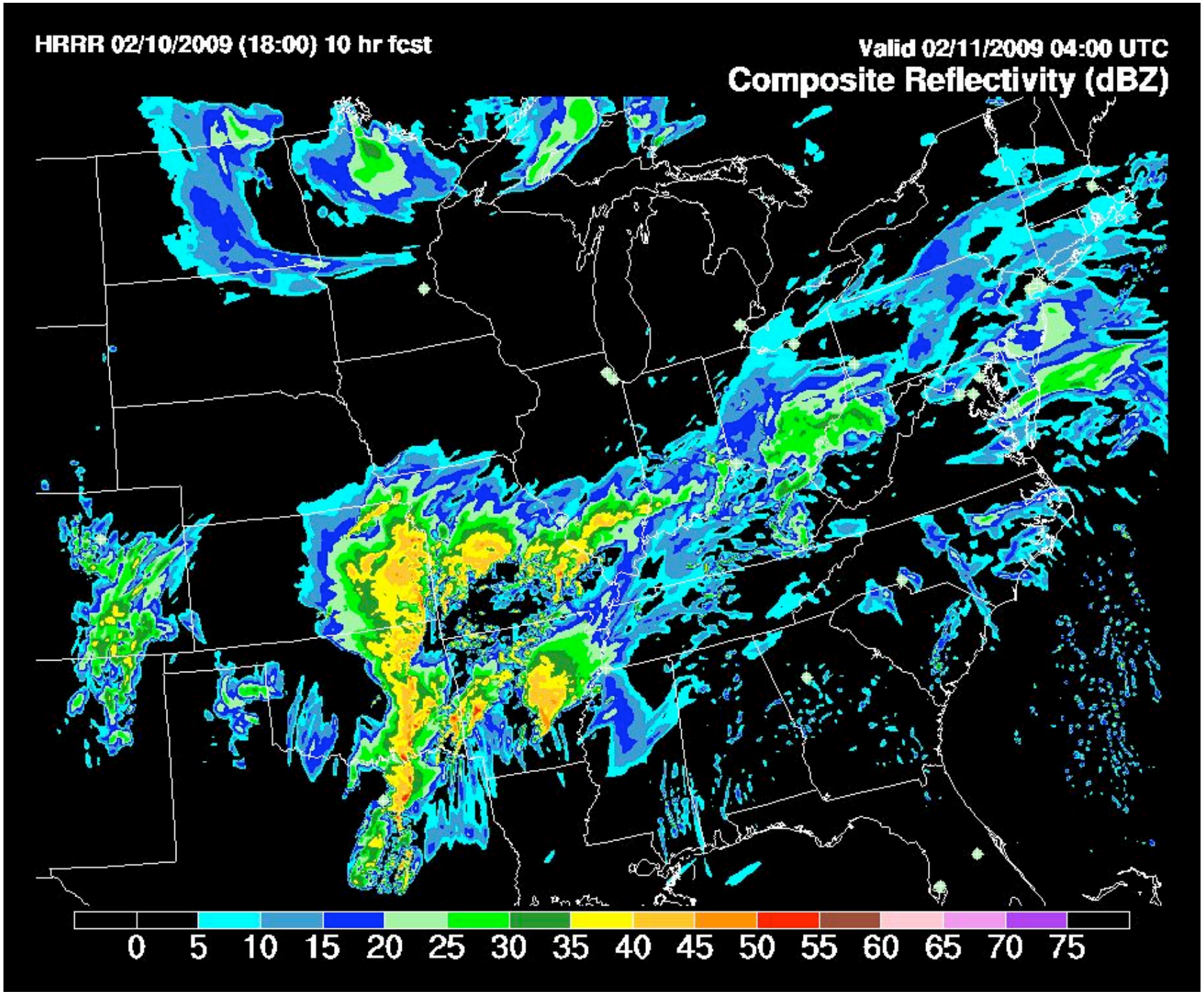
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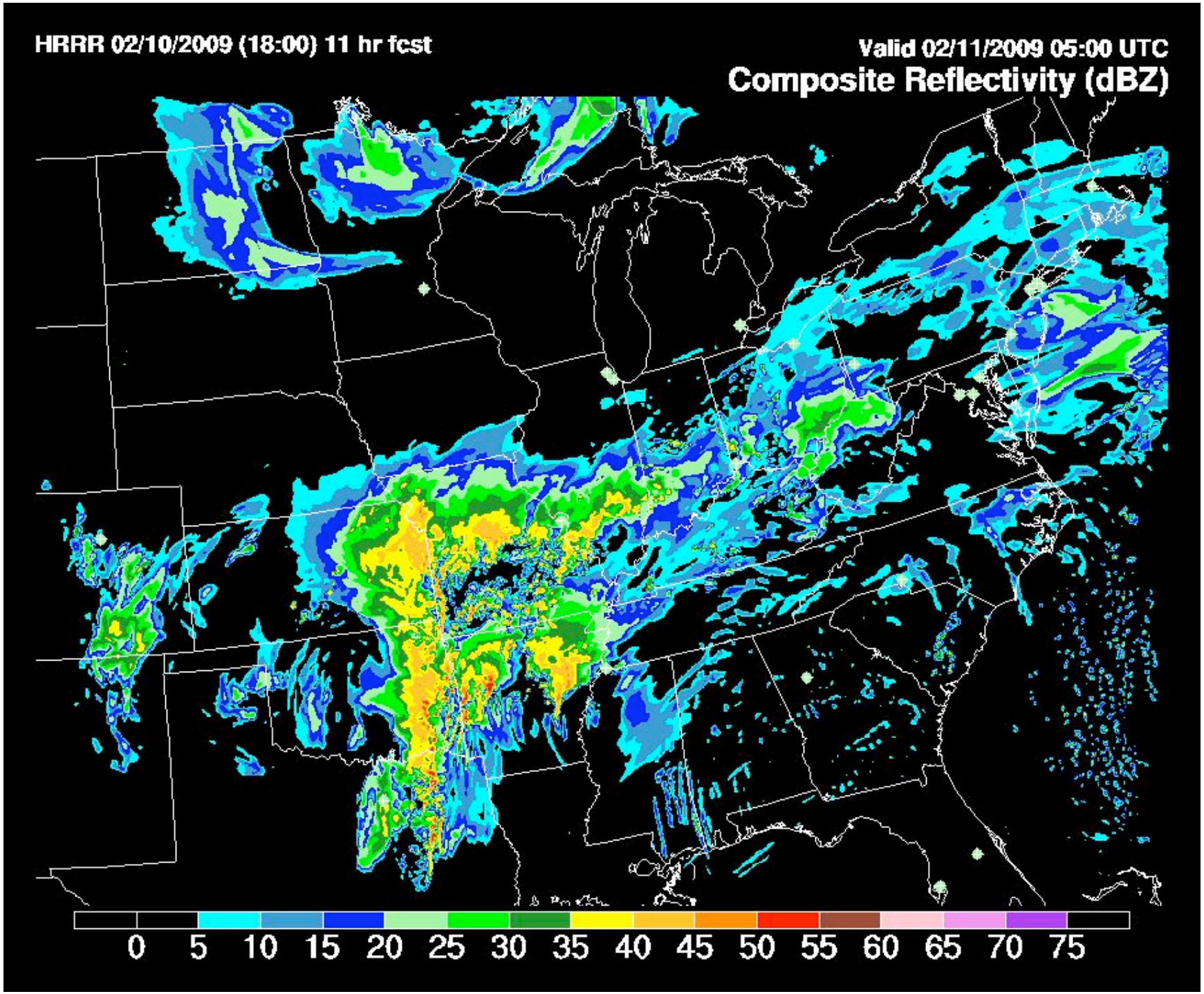
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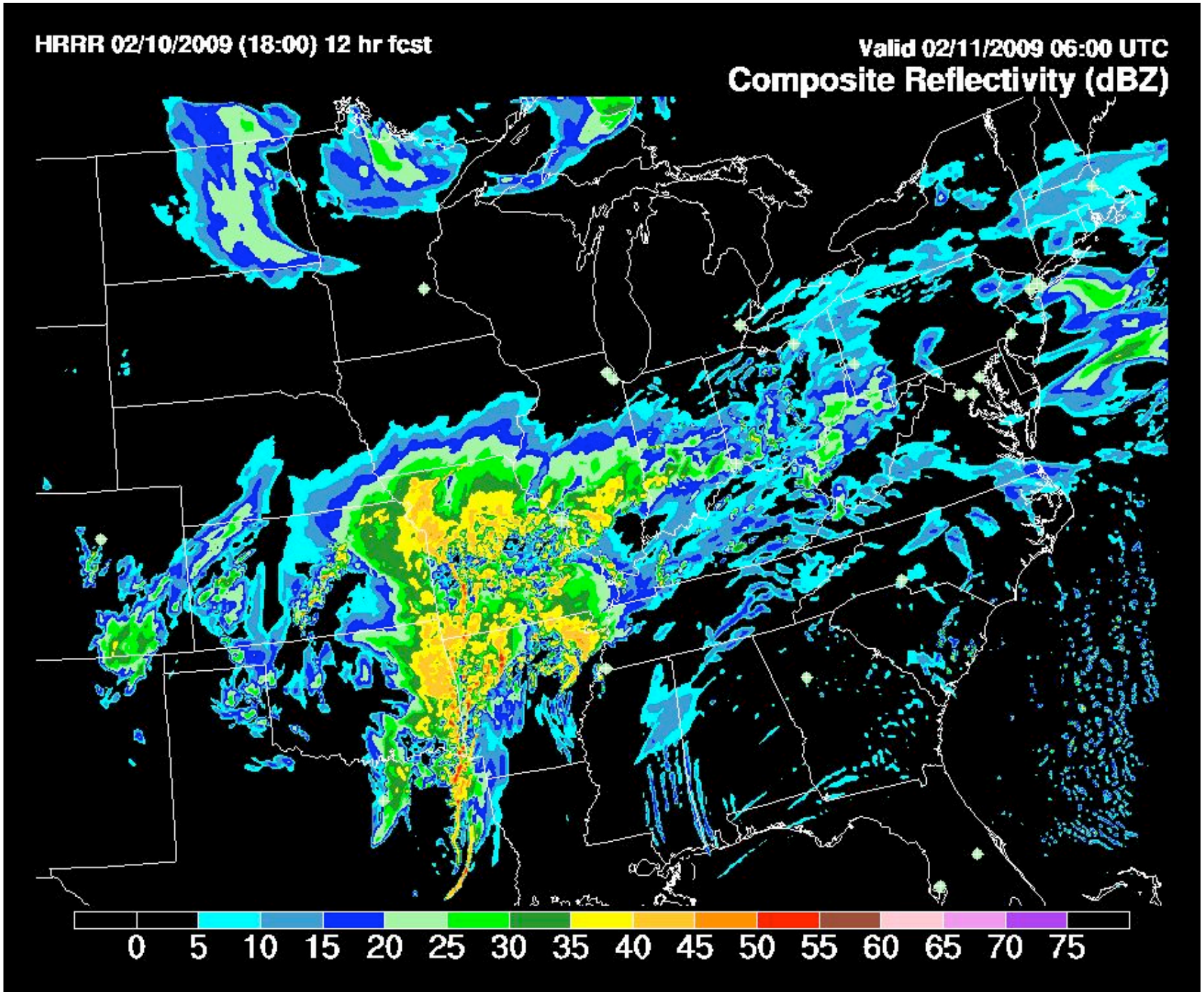
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