

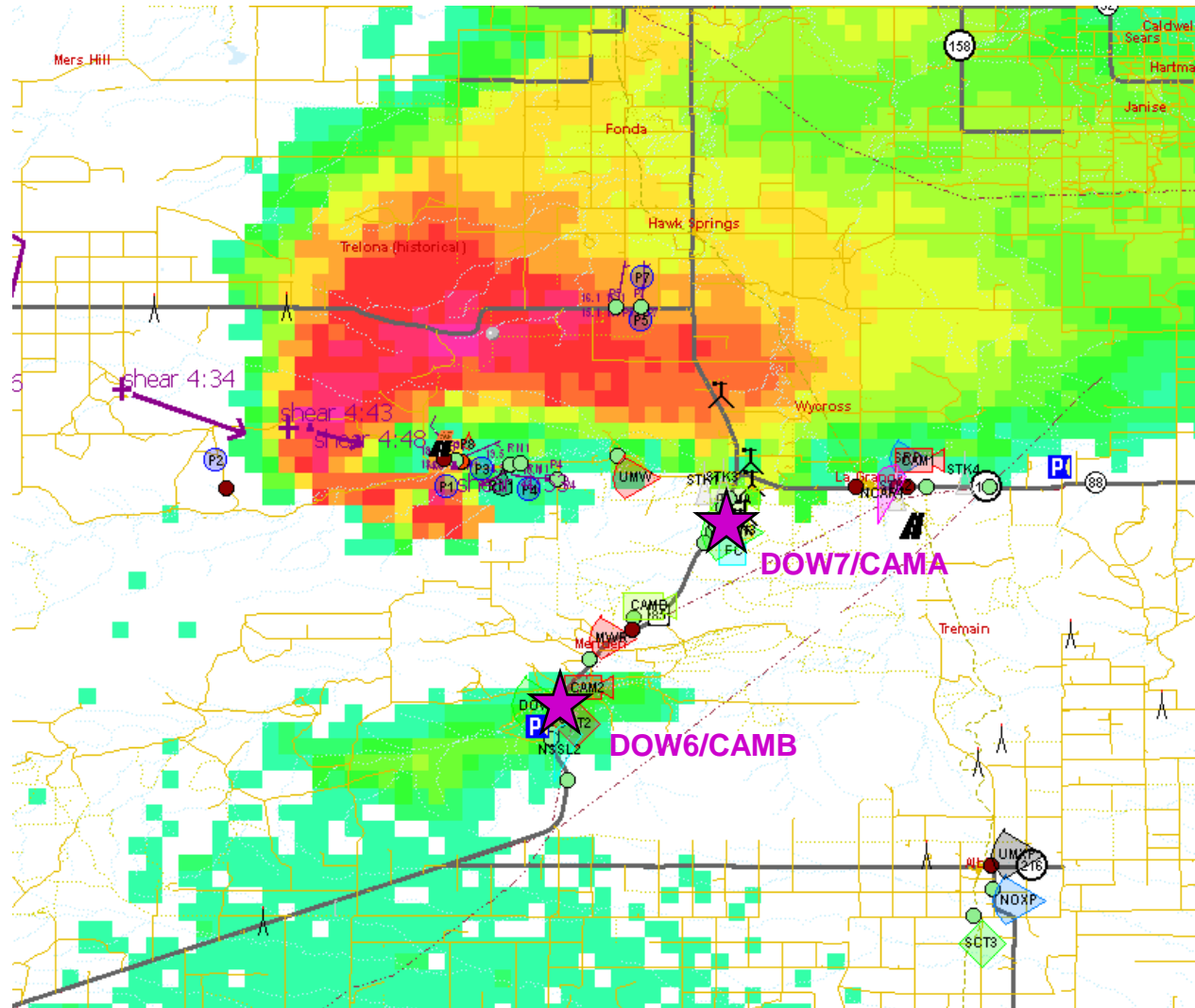
# LSC-NCAR Photogrammetry and Damage Surveys

## 2009 Field Phase Summary

Nolan Atkins and Roger Wakimoto

# Review of our Mission Objectives

- Collocate with X-band mobile Doppler radars collecting mesocyclone-scale data
- Document visual features of wall cloud, tornado, and debris
  - DSLR imagery
  - HD video
- Post event damage assessment



# Cases for which we collected data

Date	Location	Mission
5/12/09	Silverton, Tx	Outflow dominated cells
5/13/09	Watonga, OK	Disorganized supercell
5/15/09	Enid, OK	Squall line
5/19/09	South of Sidney, NE	Dry microbursts
5/20/09	Alliance, NE	Limited data on storm N of Alliance
5/23/09	SE of Ogallala, NE	Multi cell
5/25/09	Hobart, OK	Supercell
5/26/09	N of Dallas/Ft. Worth, TX	Left moving supercell
5/31/09	Thurman, IA	Linear cells
6/4/09	Cheyenne, WY	Supercell
6/5/09	La Grange, WY	Tornadic supercell
6/6/09	Theford, NE	Isolated supercell
6/7/09	St. Joe, MO	Supercell
6/9/09	Ford, KS	Supercell
6/10/09	Hugoton, KS	Multi cell
6/11/09	Lamar, CO	Supercell
6/13/09	Panhandle, TX	Disorganized supercell

# What's in the LSC-NCAR Photogrammetry Data Set

CAMA/B (DSLR imagery taken with a Cannon 5D Mark II; 20 megapixel full frame sensor)

- RAW (23-24 Mb per image)
- Large JPG (5616x3744 pixels; 13-15 Mb per image)
- Small JPG (800x600 pixels; 0.3 Mb per image; web friendly)

VIDA/B (HD Video taken with a Sony HVR-A1U)

- Recorded in HD
- Converted HD to .avi files

Notes:

1. RAW DSLR imagery is viewable with Adobe Photoshop and Google Picasa
2. HD is viewable with Google Picasa
3. All imagery (all formats and sizes) have been geo tagged (< 3 m accuracy)
4. All image and video times are in CDT

# What's in the LSC-NCAR Photogrammetry Data Set

## Deployment site locations

- CAMA .kmz file (example for 11 June)
- CAMB .kmz file

# What's in the LSC-NCAR Photogrammetry Data Set

5 June, 2009

- Also contains
  - panoramas we've used in the photogrammetry analysis
  - damage survey data

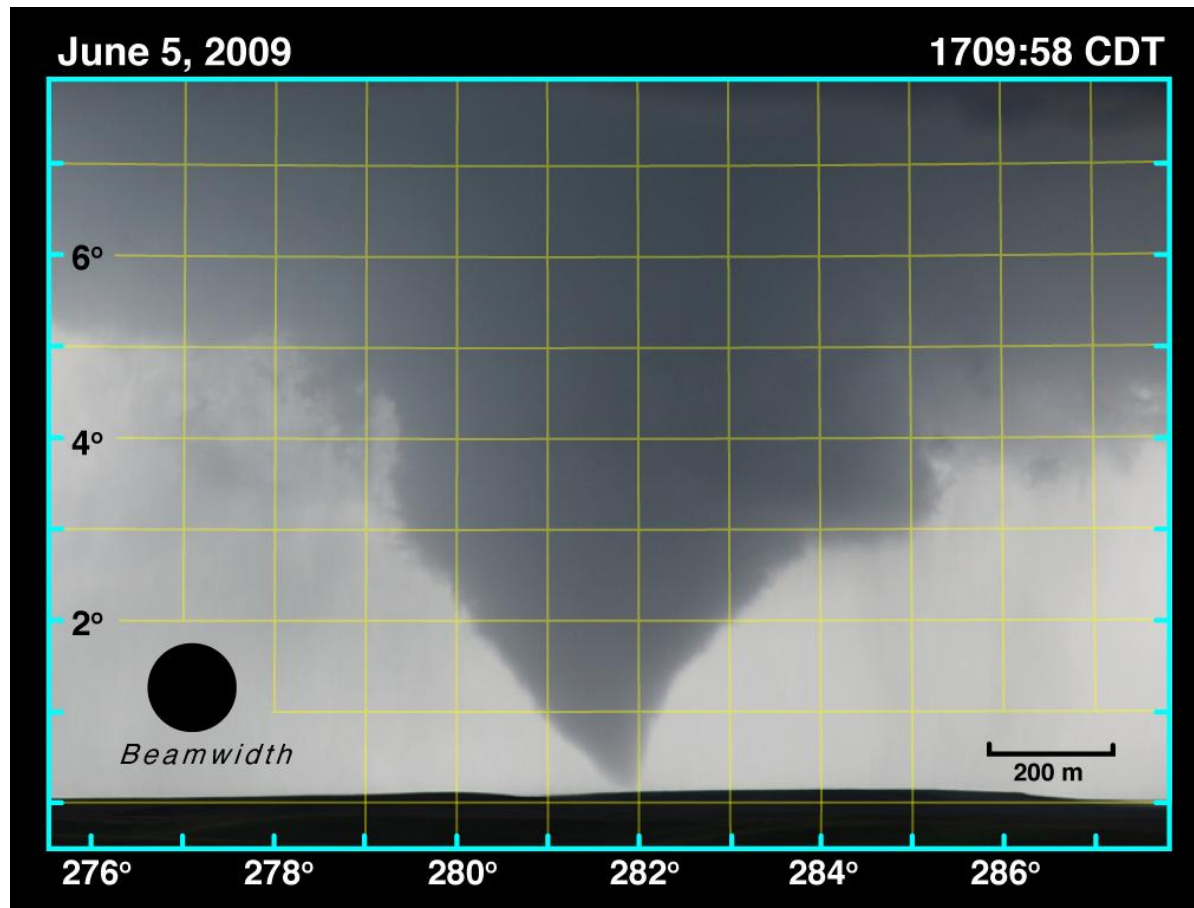
# Data Availability

- Dataset quick look available at: <http://meteorology.lyndonstate.edu/vortex2>.

# Data Analysis for 5 June, 2009

Photogrammetry is completed for 5 June 2009 event

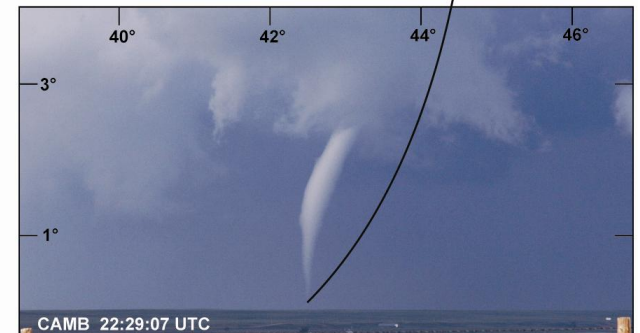
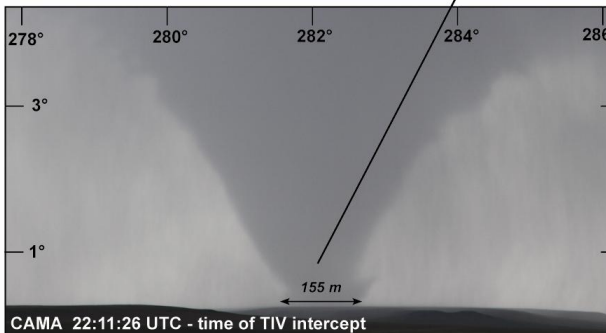
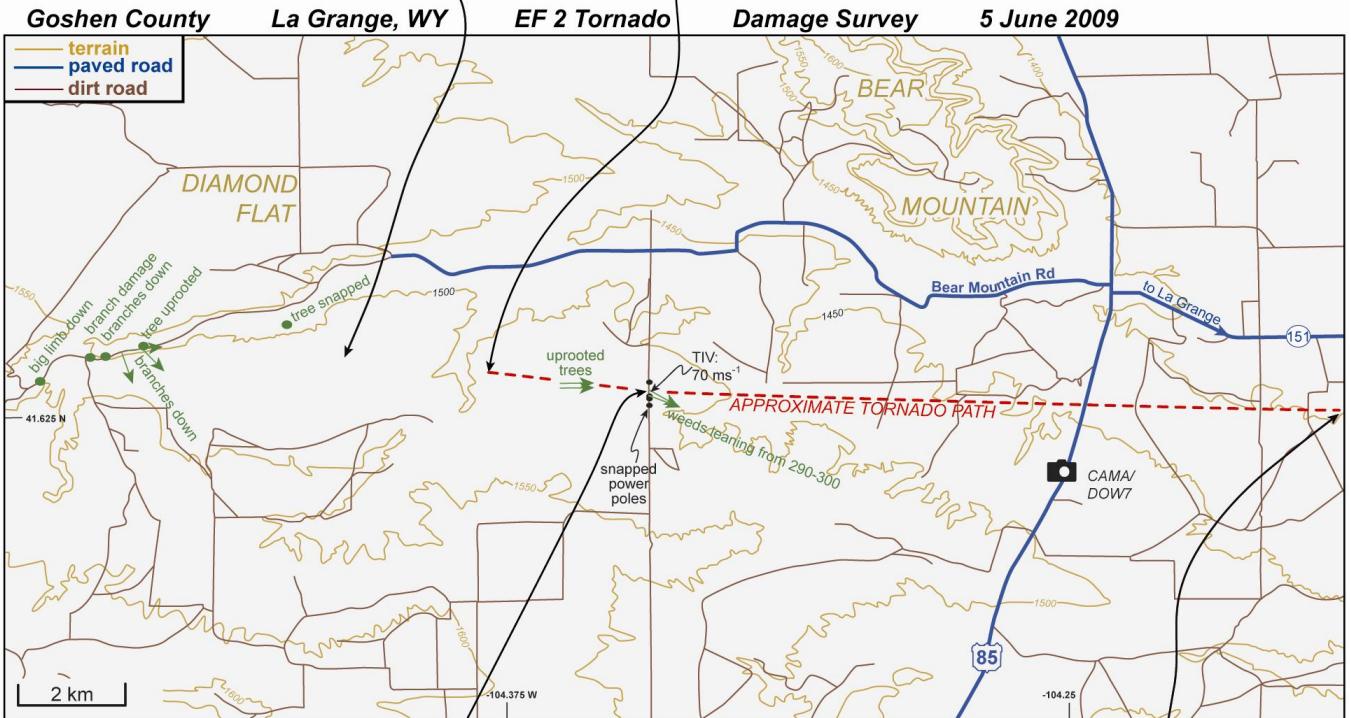
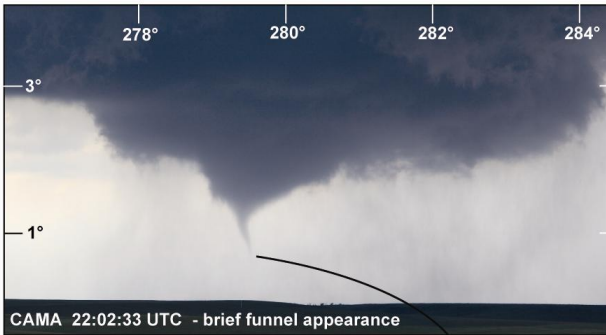
- from approximately 21:56 – 22:29 UTC and 23:23 – 23:54 UTC





# Data Analysis for 5 June, 2009

## Damage Survey



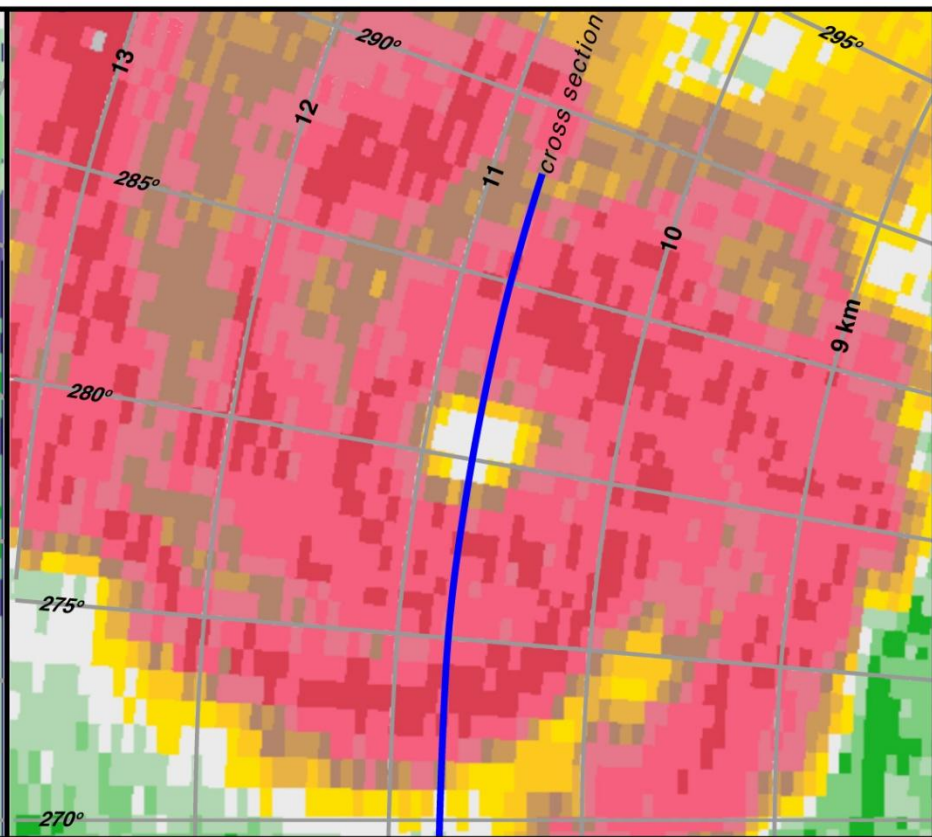
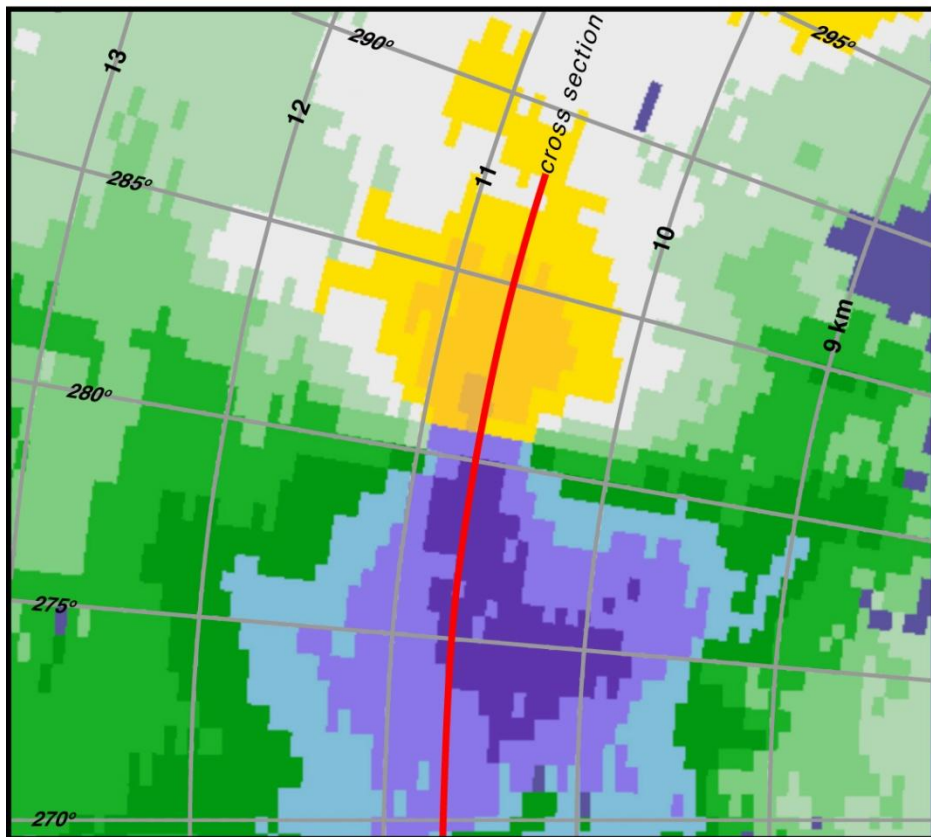
*Photo Time: 2206:05*



2206:22

3° 2206:22

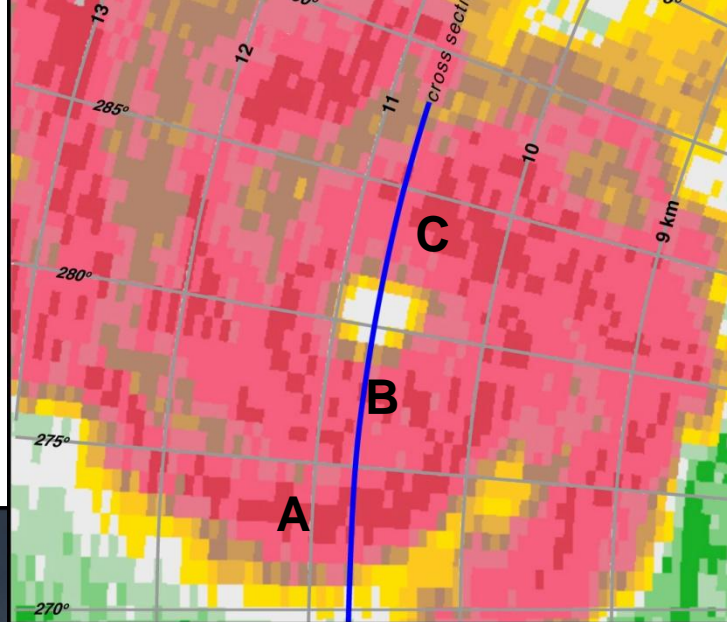
3°



-30 -20 -10 0 10 20 30 m/s

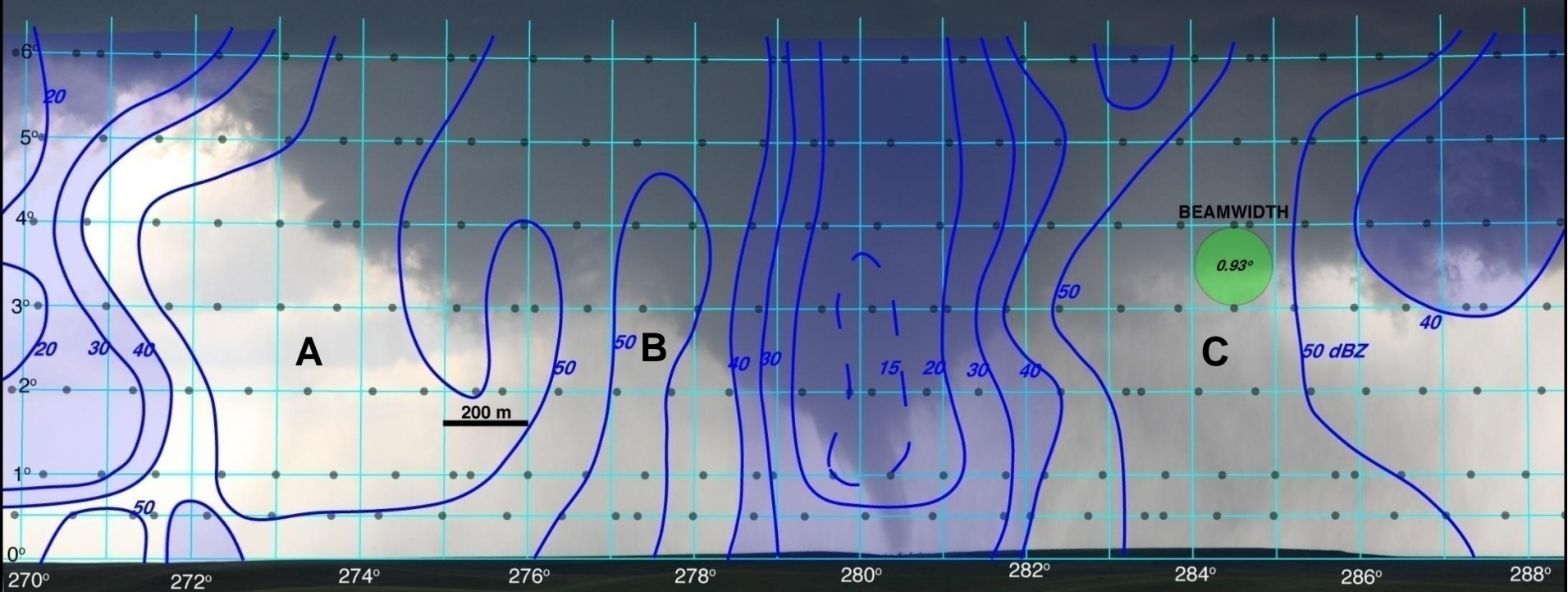
-20 -10 0 10 20 30 40 50 dBZ

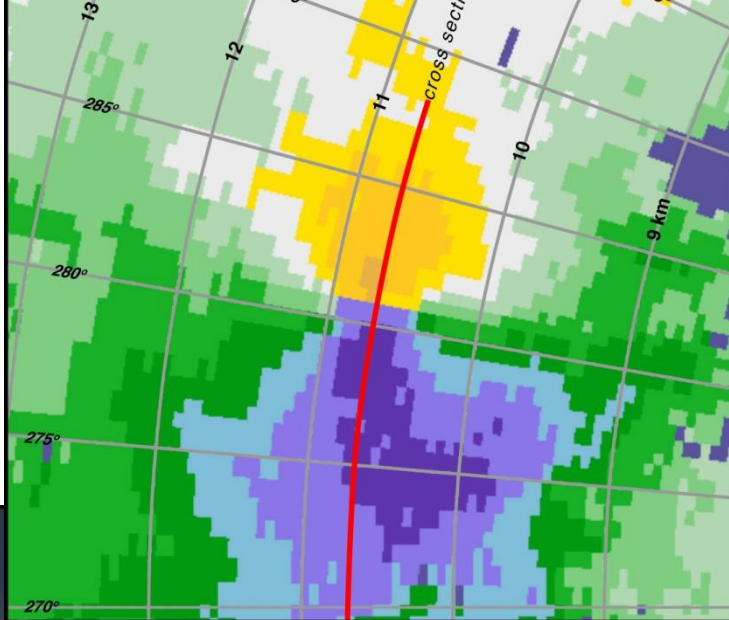




Volume 2206:02 - 2206:43

Photo Time: 2206:05





Volume 2206:02 - 2206:43

Photo Time: 2206:05

