

THE JOURNAL OF AUSTRALIAN STORM CHASING

# THE Australian Storm Chaser

*Tornado Alley Special Edition*

## **US Chasing**

**WYOMING "Classic" LP**

**May 10th 2004**

**KANSAS TORNADIC  
MAYHEM!!!**

**May 12th 2004**

**TEXAN HP BEAST  
April 30th 2004**

## **Oz Chasing**

**EARLY SEASON  
SNOWCHASE**

**April 25th 2004**

**NORTH COAST**

**SUPERCCELL NSW**

**March 18th 2004**



# WHATS INSIDE?

**4 Letter from the  
Editor**

**5 Texan HP  
Supercell**

**10 Attica Kansas  
Tornadic  
Supercell**

**17 Early Season  
Snowfalls  
N.S.W. Alps**

**19 HP Supercell  
N.S.W.  
North Coast**

**22 Cheyenne  
Wyoming  
LP Supercell**

**23 BoM April/May  
Rainfall  
Summary**



**5** Texan HP Supercell  
30/04/04



**10** Attica Kansas Tornadic  
Supercell 12/05/04



**17** Early Season Snowfalls N.S.W. Alps  
25/04/04



**19** HP Supercell N.S.W. North Coast  
18/03/04



**22** Cheyenne Wyoming LP Supercell  
10/05/04

## Editorial Staff

Matthew Piper  
Jimmy Deguara  
David Croan  
Geoff Thurtell  
Jeff Brislane  
Brett Vilnis

## Submissions

All submitted articles must be in MS Word format with photos and graphics in a separate file. Articles can be submitted by post on CD, email [jbrislane@optusnet.com.au](mailto:jbrislane@optusnet.com.au) for address or alternatively articles that aren't too large can be submitted via email to [mpiper@bigpond.net.au](mailto:mpiper@bigpond.net.au) or [jbrislane@optusnet.com.au](mailto:jbrislane@optusnet.com.au)

100 kb is large enough for picture files and please give credits when taking pictures or graphics from sources other than yourself.

Pictures or information submitted without due credit will be discarded. Articles may be shortened or altered for editorial purposes.

# Letter from the Editor

Welcome to the April/May edition of the ASC Journal, The Journal of Australian Storm Chasing!

As a serious storm lover, I am always sad to see the end of the Australian storm season, but just when you think that theres nothing to do, along comes the US chase season and the great plains fires up again with awesome Tornadic Supercells, the likes of which we in Australia can only dream about!

This year, as in the past three years, Jimmy Deguara and David Croan are in the thick of it in Tornado Alley as usual. They have seen countless Supercells and more than 20 individual tornados! That is certainly a record for them that will take some beating in future years.

In this issue we have three of the latest stormchasing adventures from Jimmy and Dave, including the awesome tornadic supercell that nearly destroyed Attica Kansas on the 12th of May. This storm produced numerous tornados throughout it's long life and Jimmy and Dave were there to document most of them.

Then there was the HP supercell that had Forth Worth Texas in it's sights on the 30th of April. Something that has been rare this year as the action has stayed mostly to the north of Oklahoma. Lastly we have a quick summary of an incredibly structured LP supercell from Cheyenne Wyoming that occued on the 10th of May. This was the first supercell they have chased in Wyoming and what a classic it turned out to be! Hopefully it wont be the last.

For our Australian summary in this issue we have two recent chases for you. The first was by Michael Bath and David Ellem on the N.S.W. north coast in March. They encountered a possible HP supercell that brought hail, heavy rain and flash flooding. A fitting end to their storm season. While further south we had a surprise early season snowfall on the Australian Alps. Snow was recorded north to the Brindabella's and down in Victoria it fell to a depth of nearly half a metre in some locations! Matthew Piper and I decided to drive south to see some early season action and we weren't dissapointed with a nice coating of fresh snow and plenty of scenic photos to boot.

So enjoy this edition as we take you along with us into thunderstorm nirvana.

Thankyou, and happy storm chasing.

Jeff Brislane and Matthew Piper

Joint Editors.

ASC Journal.

Email: [jbrislane@optusnet.com.au](mailto:jbrislane@optusnet.com.au)

Email: [mpiper@bigpond.net.au](mailto:mpiper@bigpond.net.au)

All replies can be sent to the above address.



# Texan HP Supercell 30/04/04

## by Jimmy Deguara and David Croan

Having arrived on the Plains, the previous day, we were encouraged by model runs which indicated the potential for a significant severe weather event on Friday, April 30.

Tornado-wise, we were somewhat less optimistic following analysis of sfc charts on chase day. Surface flow was fairly weak in the warm sector. Temperatures in the capping layer were also on the cool side and a slow moving NE-SW cold front was likely to favour a more linear convective mode. An outflow boundary was roughly parallel to the Red River in NW Texas.

This feature, potentially, would interact with the cold front yielding a triple point, with backed surface winds along the red river near Wichita Falls. However, there, we felt a weaker cap, weaker mid-level flow, more moderate instability and proximity to the cold front were all too much to ignore. At 11:00 am we head west from Dallas towards Throckmorton County where the airmass would become very unstable during the afternoon (MUCAPE 3000J/kg).

At Decatur we see the anvils of two discrete storms to our north west - time is 12 noon. A tornado watch is now in effect for northwest Texas and southwest Oklahoma. Since, the westernmost storm appears to have developed in the area of a progged triple point, we cant resist a detour north to Henrietta. We tune into a Skywarn net. Well, at around 2:00pm, the storm, now near Petrolia Tx, has a hook and spotters report a funnel cloud almost to the ground. We feel that the anvils are not overly impressive and head off south.

On route to Jacksboro, we see very large anvils to our south. Severe thunderstorm warnings are in effect. As we get closer spectacular inflow bands feed into a green-tinged meso, now located NE of Breckenridge. Lightning is very frequent. At 3:45pm we make it to the northern

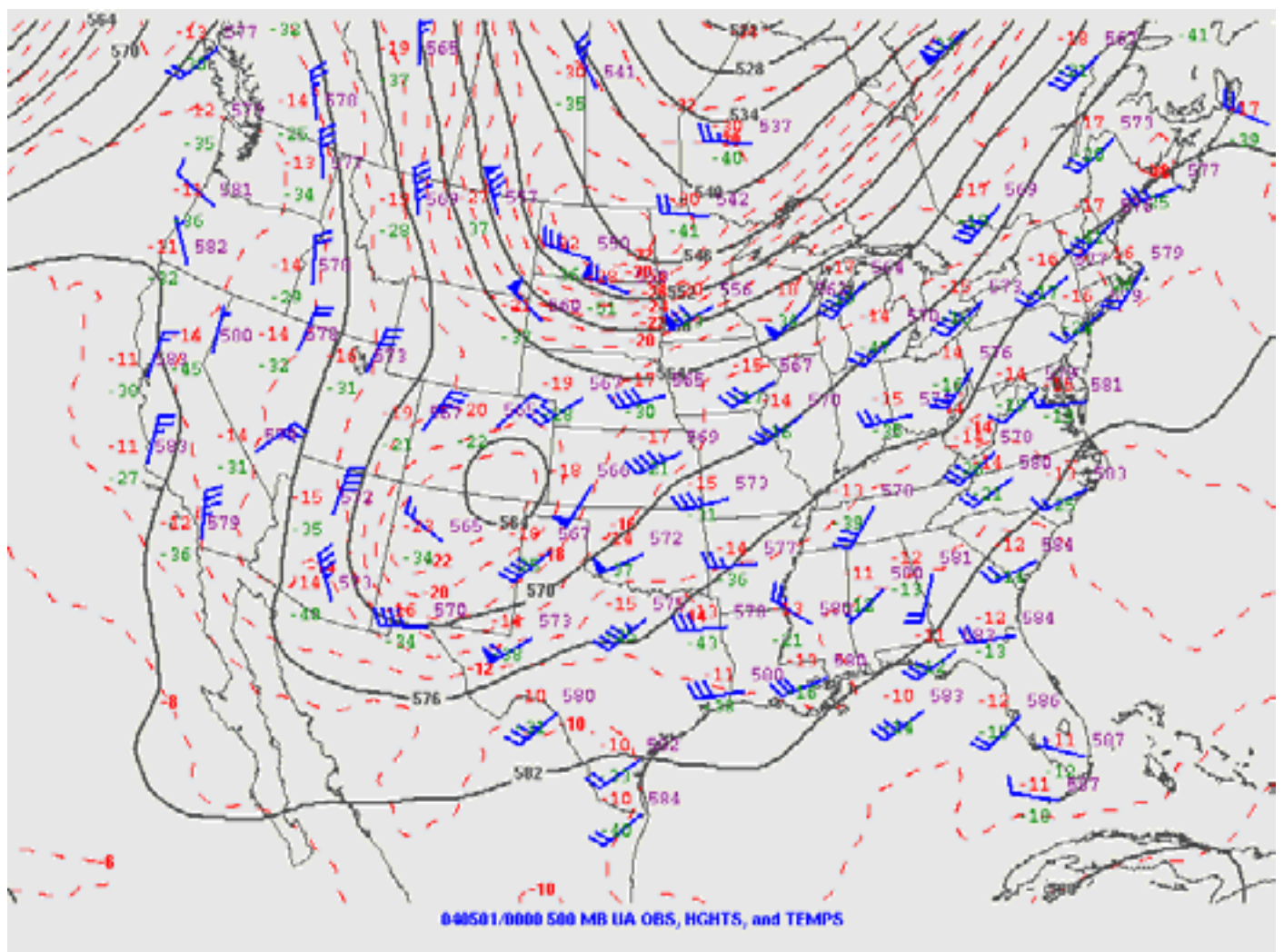
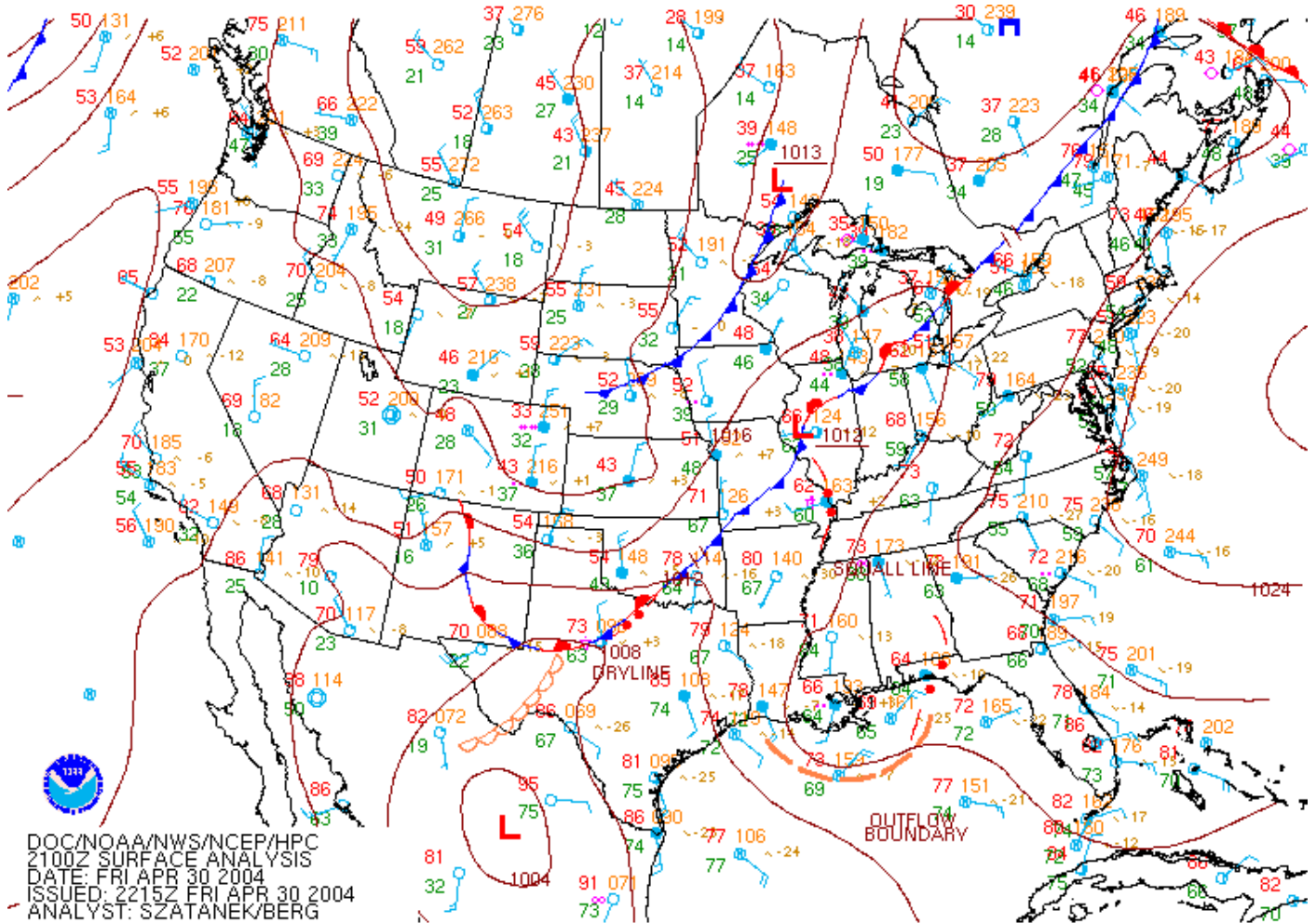


edge of possum Kingdom Lake in extreme southern Young County. A tornado warning is issued as the storm moves up close to our location. The rotating wall cloud comes into view with a funnel at the centre of circulation. As it nears our location we see some very rapid rotation with several funnels - but, in the end, no tornado. As we shoot video the storm develops a wet RFD by 4:15pm, possibly being seeded by the Palo Pinto county storm further south. The storm rapidly weakens so we head south to intercept the Palo Pinto County supercell. This HP storm shows multiple inflow bands. It presents as a gorgeous mothership storm on approach to our location on 281, south of Mineral Wells. No tornado, though it is the kind of spectacle that compels us to venture to the Plains, year in, year out! The storms have formed a line so we then decide to call it a day. The storms arrive in Dallas at around 9:00pm and we are woken by post-frontal electrical storms at 4:00am.









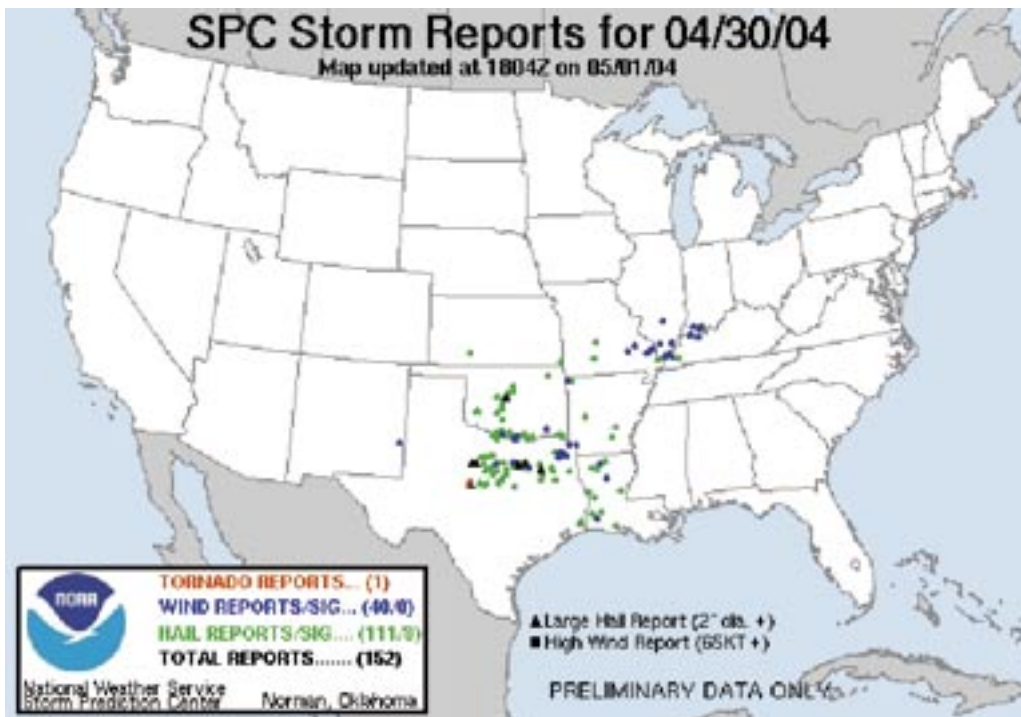




**April 30: Significant Weather Reports**

Spotters reported a funnel cloud near Petrolia, Tx. This was associated with the westernmost of the two supercells that tracked along the Red River during the early afternoon. A chase colleague showed us some stills - large cone funnel almost on the ground.

3 inch hail was reported by spotters in Shackelford County at 14:40 CDT (Palo Pinto County Supercell).



# **Kansas Tornadic Cyclic Supercell**

**May 12th 2004 by**

**Jimmy Deguara and David Croan**





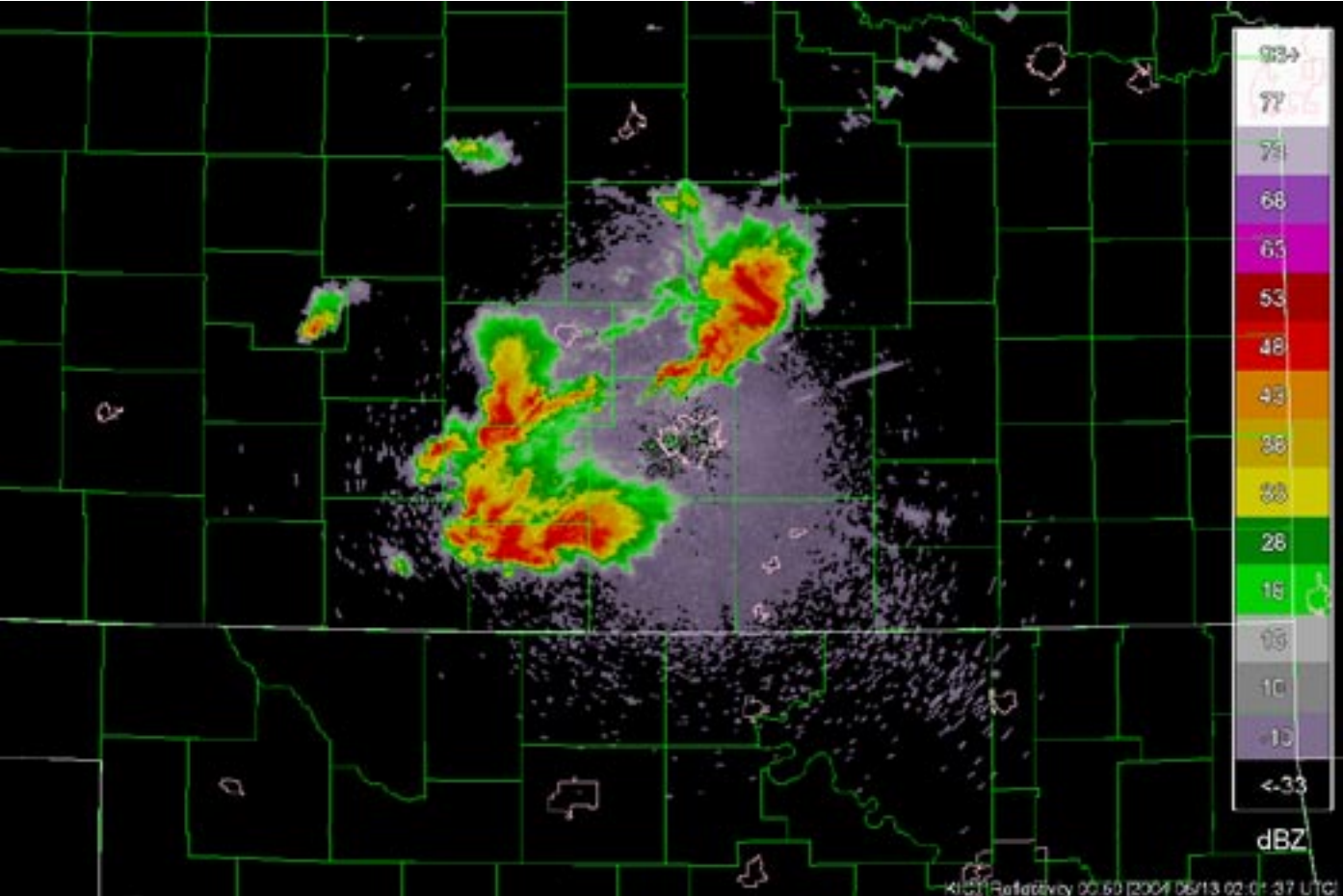




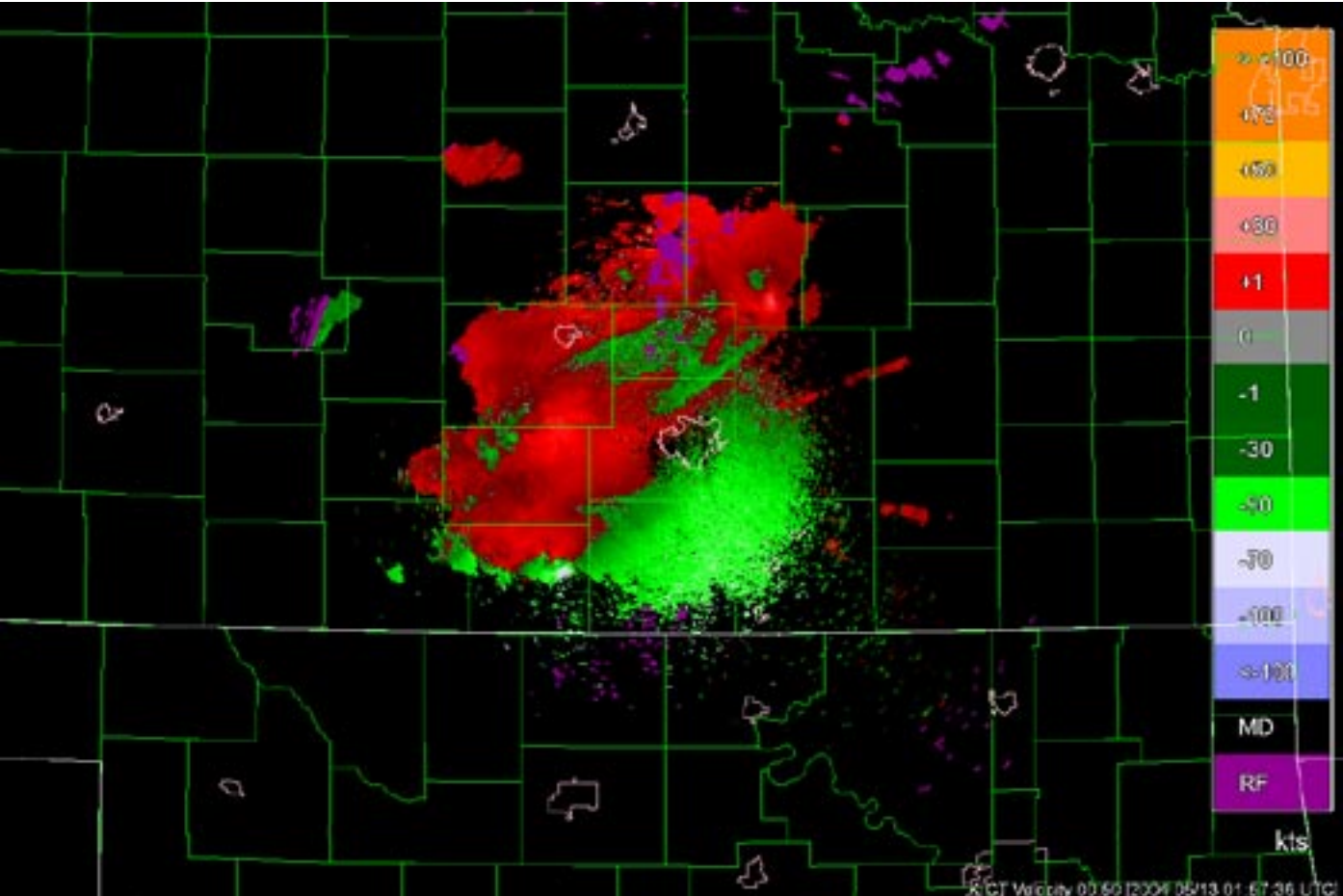




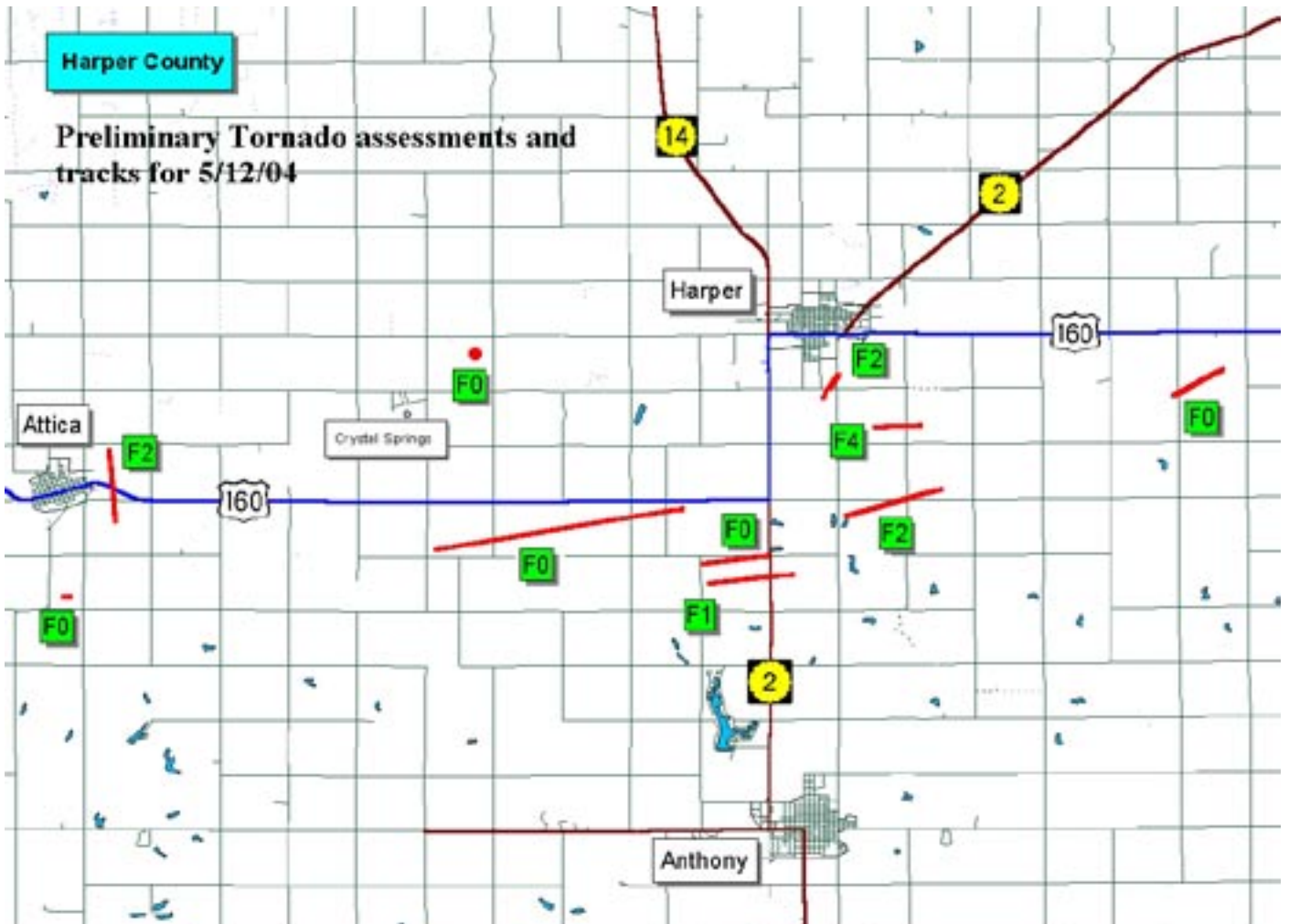
# 9pm Radar Reflectivity Image



# 9pm Doppler Velocity Image









**Safe in a basement? Think again!  
F4 Damage SE of Harper, Kansas**





# Early Season Snowfall

## Australian Alps

25<sup>th</sup> April 2004

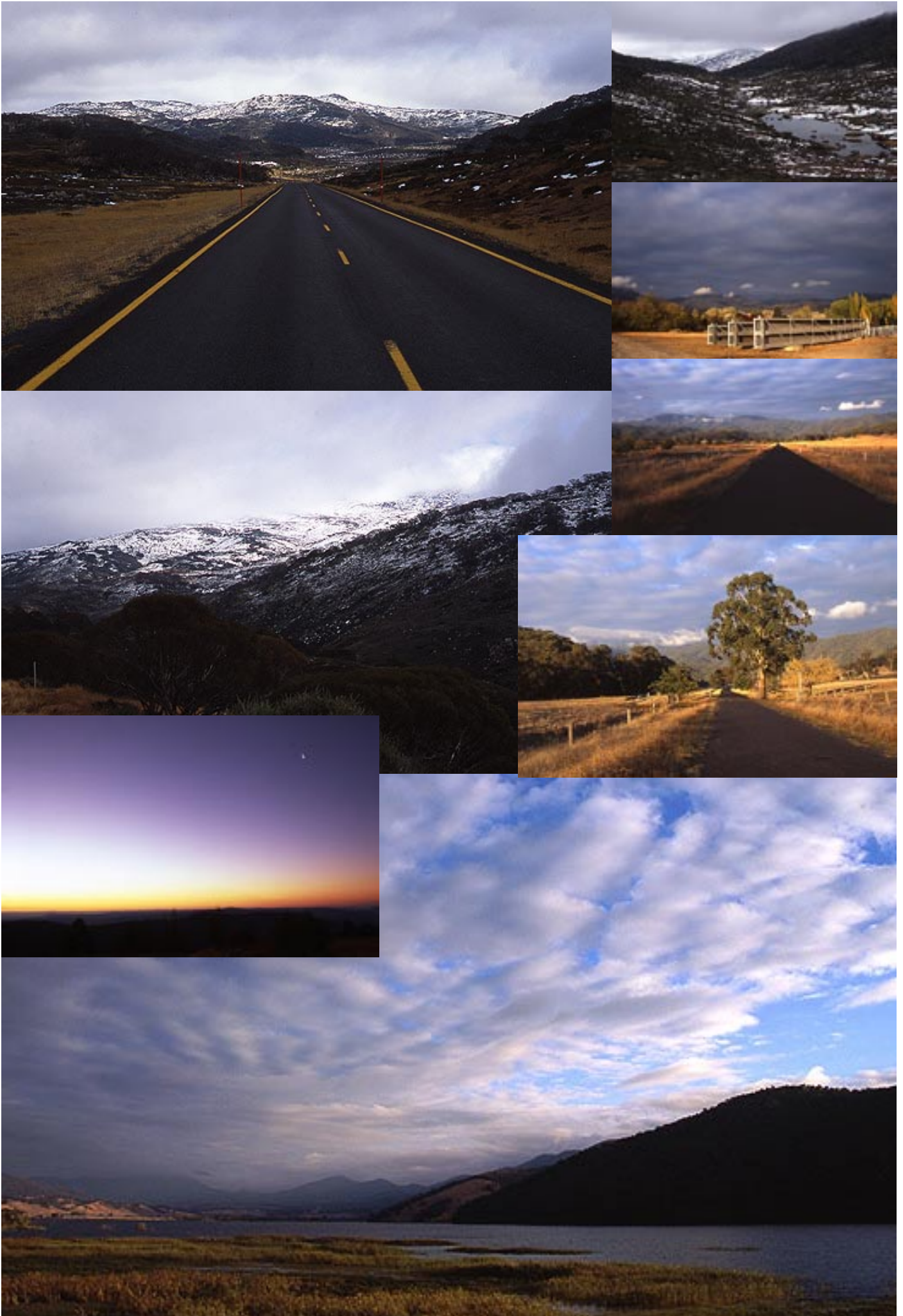


The weekend of the 24<sup>th</sup>/25<sup>th</sup>/26<sup>th</sup> of April saw a strong low-pressure system pass through Australia's Bass Strait. This system brought with it flooding rains to southeast Victoria as well as extensive snowfalls across the Australian Alps as far north as the Brindabella's in the Southern ACT. Matthew Piper and myself travelled into southeastern Victoria on Saturday the 24<sup>th</sup> to witness some of the flooding, which occurred in those parts. Although the flooding was significant in a couple of towns, on the whole the system didn't produce the widespread flooding rains that we thought it would. The next day we journeyed up to the roof of Australia near Charlottes Pass in NSW and saw the snowfalls that occurred as a result of the intensely cold air that this system brought with it.



April snowfalls aren't uncommon on the Australian Alps although in recent years they have been due to higher than average temperatures. So being able to snow this year before winter had officially begun was a treat. There's nothing like the sight of majestic snow capped mountains.





# **Probable HP Supercell on the NSW North Coast**

**Thursday 18th March 2004 by Michael Bath  
including photos by Dave Ellem**

It had looked like Thursday 18th March would be a good thunderstorm day from earlier in the week: finally some decent shear would arrive and coincide with an upper trough; destabilising the entire north coast of NSW as the day progressed.

It had been ages since any interesting stormy weather on the Far North Coast so local chasers were suffering a bit of SDS and didn't pay as much attention to the setup as they should have until the day in question. In fact, I didn't really even check the forecast on the day apart from LI and a few key wind levels ! It was just so busy with work, that I left the analysis of the setup to Dave Ellem. GFS (AVN) model revealed a cold pool at 500hPa, dropping as low as -13 on the Far North Coast by 06z (5pm). Surface temperatures got to about 30 C at a maximum. Shear was excellent, 90 knots W at 300, 40 knots WSW at 500, 25 knots SW at 700 and 15knots SSW at 850, though the low level shear was ill-defined and fairly weak. Relative humidity was in abundance at most levels, though dry at the jet level.

Storms had already formed before dawn in the Sydney area and coastal supercells were offshore and along the Central and Hunter coasts during the morning. Some remarkable footage of waterspouts and a tornado over water was captured by an unknown photographer at The Entrance, and aired on NBN Television that evening.

On the Far North Coast the morning started off with fog in the valleys. This quickly burnt off ahead of cumulus development from mid morning. Some larger clouds including some congestus occurred on the local hills to the N, NW and W, with storms well established in the Dorrigo area by 11am. Obviously no capping today. Radar indicated severe storms west of Coffs Harbour with a cell splitting at noon, the right mover weakened just south of Coffs Harbour, the left mover a probable supercell heading NE to the coast east of Grafton.

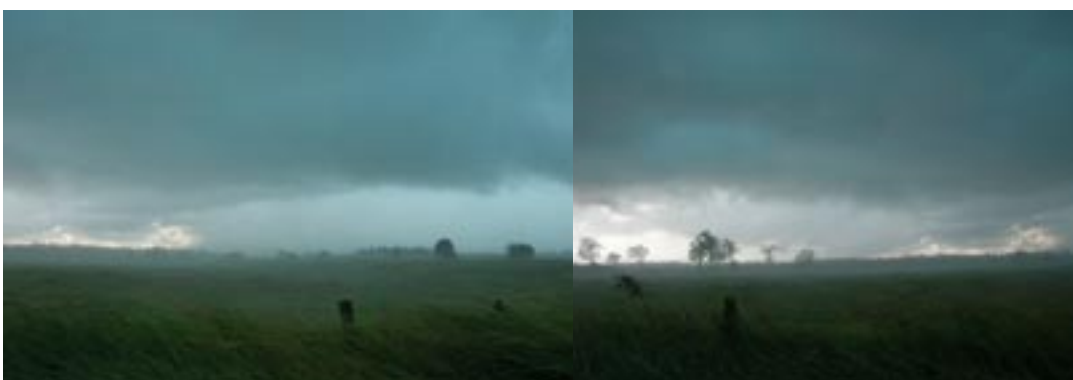
Activity showing on radar WNW of Grafton at 2pm was to be the storm which would develop and head towards the Lismore area. Dave Ellem came over to my place then we picked up Ray Mullens at Goonellabah around 2.30pm. A lot of cumulus had developed locally and was blocking views to the south and south-west. We stopped at the lookout at Parrots Nest south of Lismore and waited. There was some distant lightning but hardly any storm structure due to the blocking cloud.

After about 40 minutes we got impatient and headed west a bit further to Fig Tree Lane at McKees Hill for a different perspective. As soon as we got there some distant base features were apparent, but it also looked like the main activity may move towards the Coraki area. We headed back east to Parrots Nest and stopped to check the situation. A barrage of spectacular CGs occurred to our south, but they were still about 25 km away. Base features were now much more apparent and it looked like the core of the storm was heading for halfway between Lismore and Casino, so we headed back to McKees Hill again. We arrived at 4pm, but some anvil rain from another storm to our west made photography frustrating.

We stayed at this location as the storm advanced towards us (a NNE heading). CGs were still occurring but less frequent than before, but the base structure had become very interesting. A large gust front feature developed and quickly advanced. It wasn't long before we had to decide whether to stay put or head into where we suspected the core would go.



We left Fig Tree Lane and as we turned east into the Bruxner Highway an awesome CG hit right where we had been ! Hundreds of birds in the cow fields went berserk in its wake - it was a very amusing and exciting moment on the chase. The intense precipitation area was now just to our south. CGs continued to hit nearby as we turned SE into Tatham Road a few



ks south of Parrots Nest. The narrow road was clear of large trees and a good location to ride out the storm. We stopped and prepared for it to hit.



Torrents of violently blown rain hit from the S to SE. It was incredible, though just kept getting more and more intense ! The car was being rocked by the gusts more than I can ever remember before. A couple of small hail stones hit the car, but apparently a lot more 1 to 2 cm stones fell south and west of our location. Some very close CGs hit in the fields near us and the rain just coming and coming. I estimate the rain rate would have been around 200mm per hour, with winds 90 to 100 km/h. It was awesome !



After about 20 minutes we left this location and got back onto the Bruxner Highway. It looked like a parking lot with all the cars stopped by the side of the road waiting for the storm to pass. But they were sitting under large gum trees, how stupid ! Large branches had been brought down right next to them.....

We drove slowly north in torrential wind blown rain, and stopped just near the Lismore Airport. The rain again got intense and persisted for what seemed like ages. Local flash flooding in Lismore itself was looking likely. Sure enough, the gutters and parts of the roadway on the highway into Lismore were awash. Properties and fields adjacent to the road also had water running everywhere or were completely covered in flood waters. Browns Creek which runs through the middle of Lismore was very fast flowing and topping its banks in places. We drove across a bridge near Lismore Shopping Square where the water was about 20cm deep across the road.



Close lightning and rain persisted into the evening after this large probable HP supercell continued further north. The storm hit Murwillumbah about 6pm and caused significant damage there. Many homes were completely unroofed, and numerous large trees and powerlines were brought down. The NSW State Emergency Service received 87 calls for assistance.

# Cheyenne Wyoming LP Supercell

May 10th 2004 by

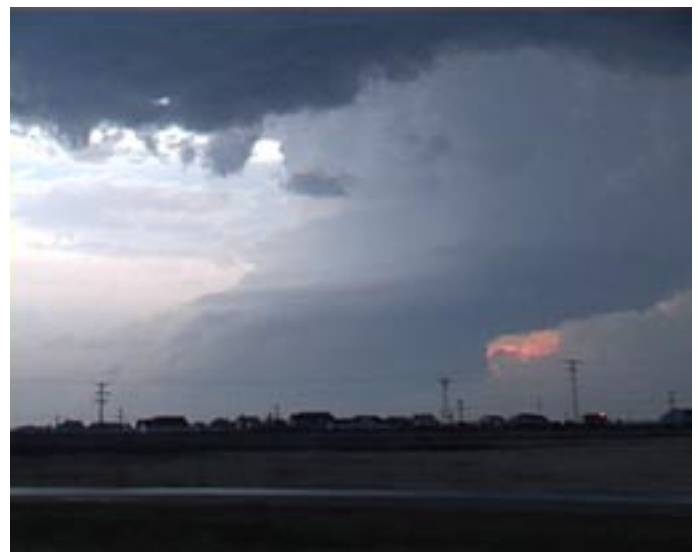
**Jimmy Deguara and David Croan**

The day started out in Sioux City after the previous night's supercell in SE South Dakota. After unsuccessfully trying to solve a problem with our laptop, we were on our way by 10:30am.

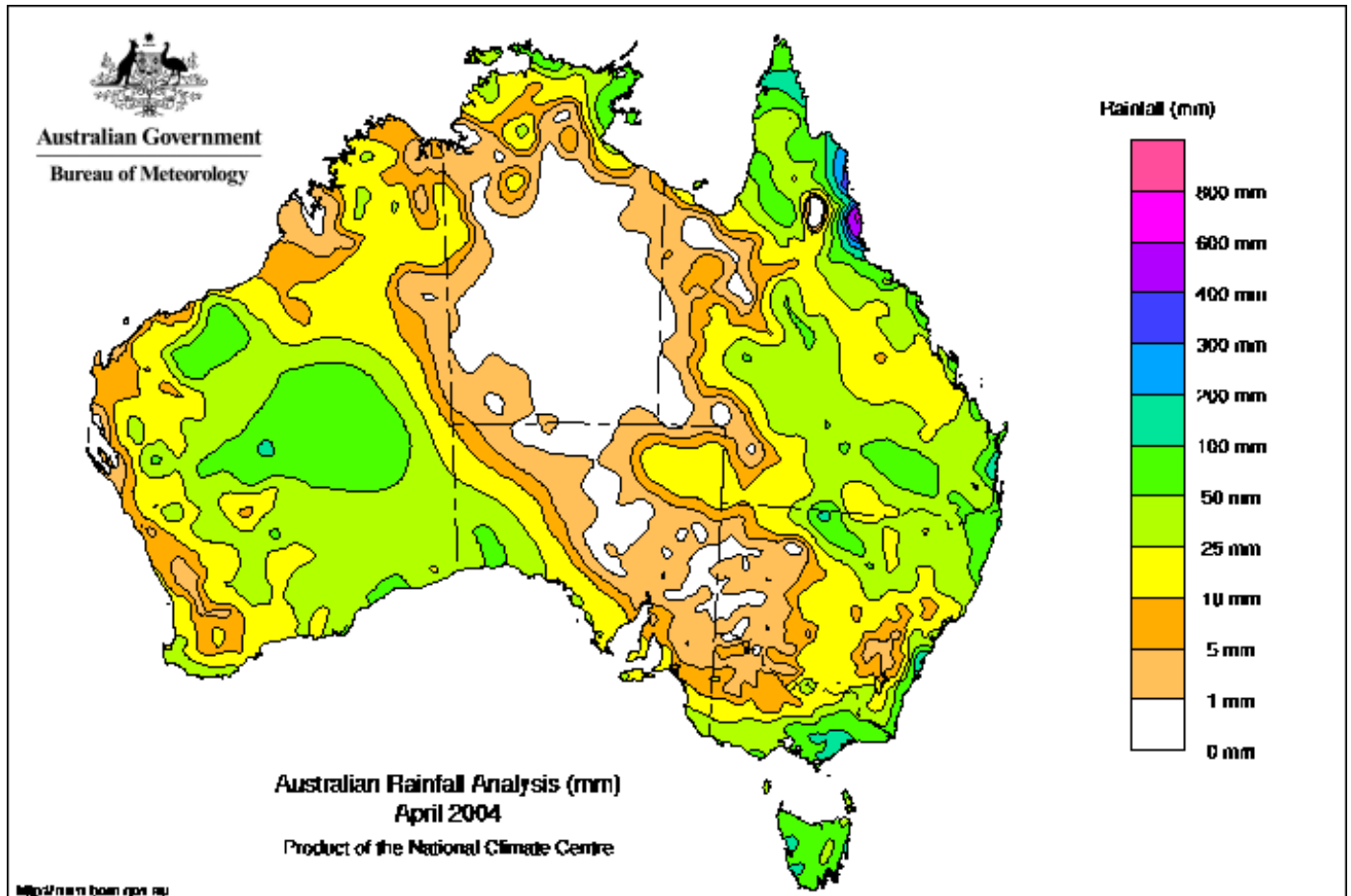
Upslope flow can do magical things on the high plains. In fact the low level directional and speed shear was, on the late afternoon of this day, nothing short of incredible. At the junction of I-80 and I-76, we were confronted by massive anvils and sustained 40 mph winds out of the SE and a decision. Severe thunderstorm warnings were in effect, with several supercells aligned north south from E of Denver to just S of Cheyenne. We felt given northward propagation of the updrafts, and given our late arrival, that we had to target Cheyenne rather than Denver. As we arrived in Sidney, deep in the Nebraska Panhandle, we actually had trouble opening the car doors to fuel up, while parked facing the wind! It was fantastic!

The risk was high. Soon after crossing the border, however, two obviously LP end of the spectrum supercells came into view on the horizon. As we drove west, the northernmost cell's structure was slowly being unveiled, although it soon began to dissipate. Meanwhile, the southern cell developed into a classic 'barber pole' LP structure. Storm spotters had reported 2-inch hail west of Cheyenne. Storm scale rotation was pronounced and the hard updraft towers were suggestive of a powerful mesocyclone. We spent over an hour staring in awe as this gorgeous storm moved NNE. As daytime heating was lost it was amazing watching the storm 'reluctantly' being sheared apart. The mesocyclone remained strong as the base was slowly stretched away from the parent updraft.

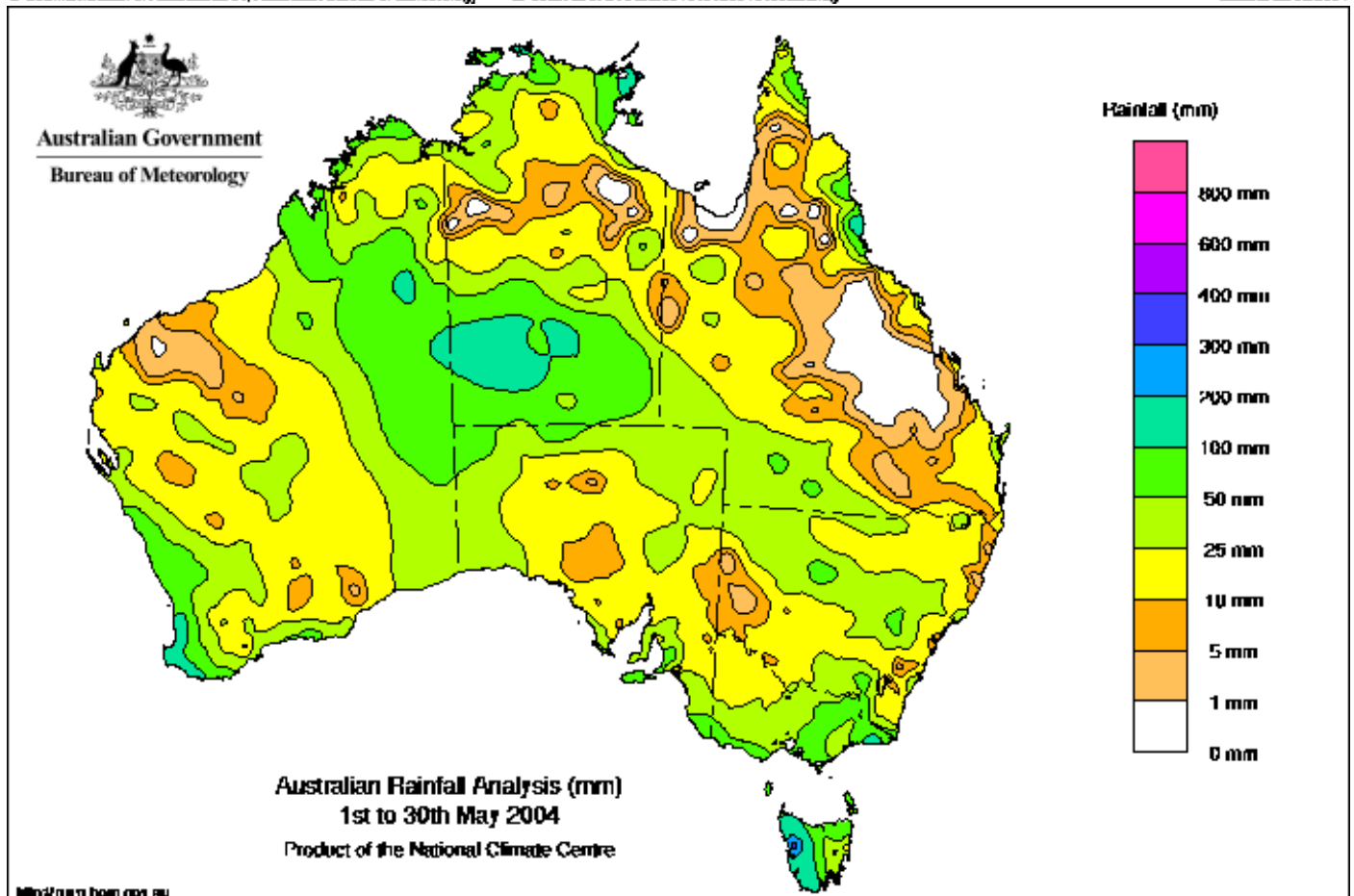
The storm then produced some dramatic intra-cloud lightning before darkness set in, dictating that we head east back to Sidney for the night.



# BoM April/May Rainfall Summary



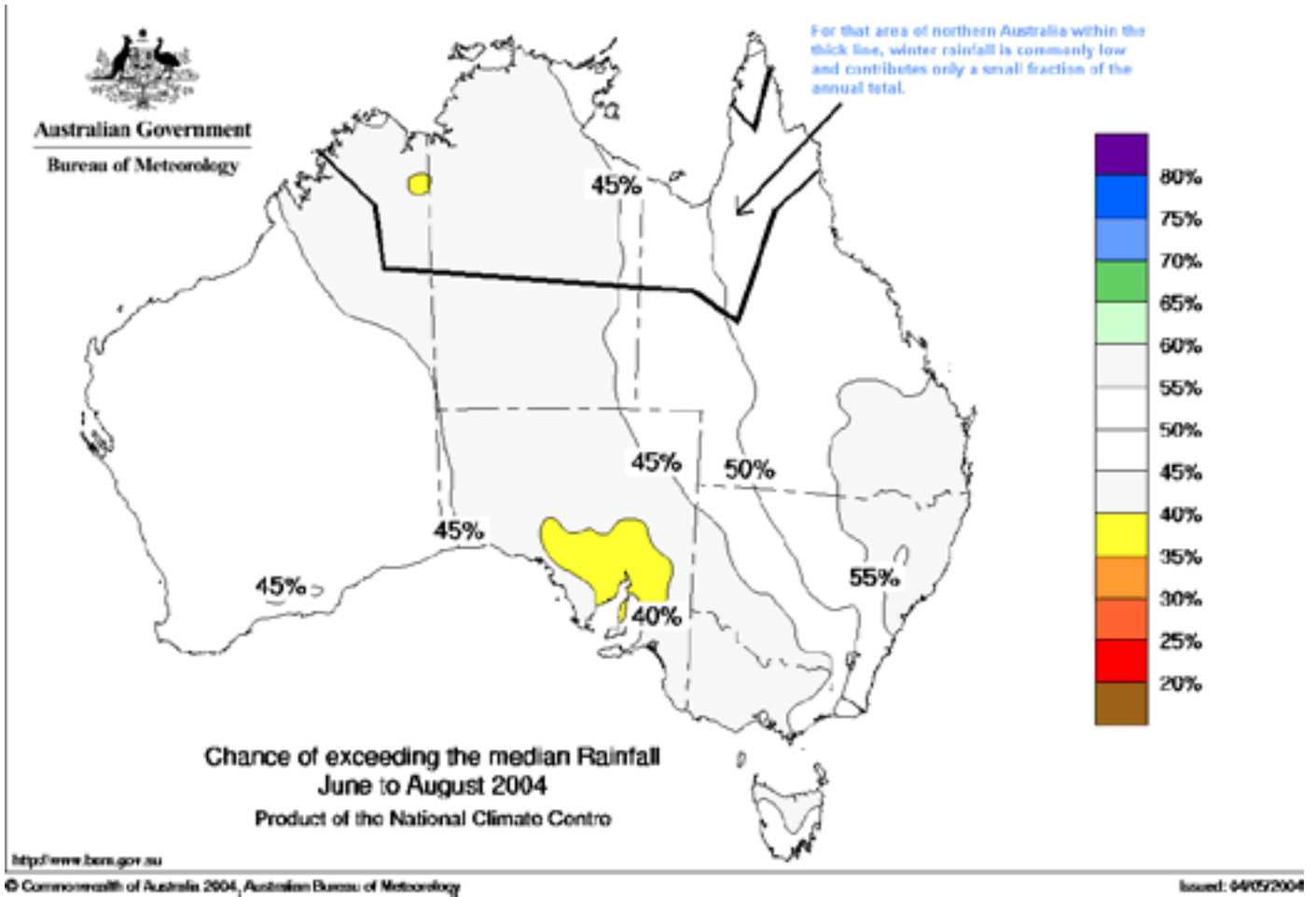
© Commonwealth of Australia 2004, Australian Bureau of Meteorology ID code: IDCRI7XAU2004040120040430.col.png Issued: 28/05/2004



© Commonwealth of Australia 2004, Australian Bureau of Meteorology ID code: IDCRI7XAU2004050120040530.col.png Issued: 30/05/2004



# BoM Winter Rainfall Outlook



Rainfall summary and Winter rainfall outlook maps are copyright of the BoM  
<http://www.bom.gov.au/other/disclaimer.shtml>  
<http://www.bom.gov.au/other/copyright.shtml>

**While your surfing the web why dont you check out the WDU Shop, a Journal of Australian Storm Chasing Partner.**

**WDU SHOP**  
[www.weatherdownunder.net.au](http://www.weatherdownunder.net.au)

WHEN WEATHER DOES MATTER

**Australias Leading Weather Instrument Retailer**

## **The Journal of Australian Storm Chasing Parent Website**

**STORM CHASING**

**Australian Storm Chaser News & Events**

**[www.stormchasing.com.au](http://www.stormchasing.com.au)**

**For all your storm chasing resources**

The design and layout of “The Journal of Australian Storm Chasing” is subject to copyright © and is the intellectual property of ASC.

Radar graphics, charts and damage photos on pages 8, 9, 14, 15 & 16 are freely available from NOAA and are not subject to copyright.

All other photographs and articles are copyright of the respective owners, and are used with permission.

The Journal of Australian Storm Chasing Volume 2  
Issue 3 Apr 2004/May 2004 All Rights Reserved