



## UK Processing Overview and Case Studies

2 (very nearly) operational systems

Systems act as UK MetO and E-GVAP processing servers (results freely available)

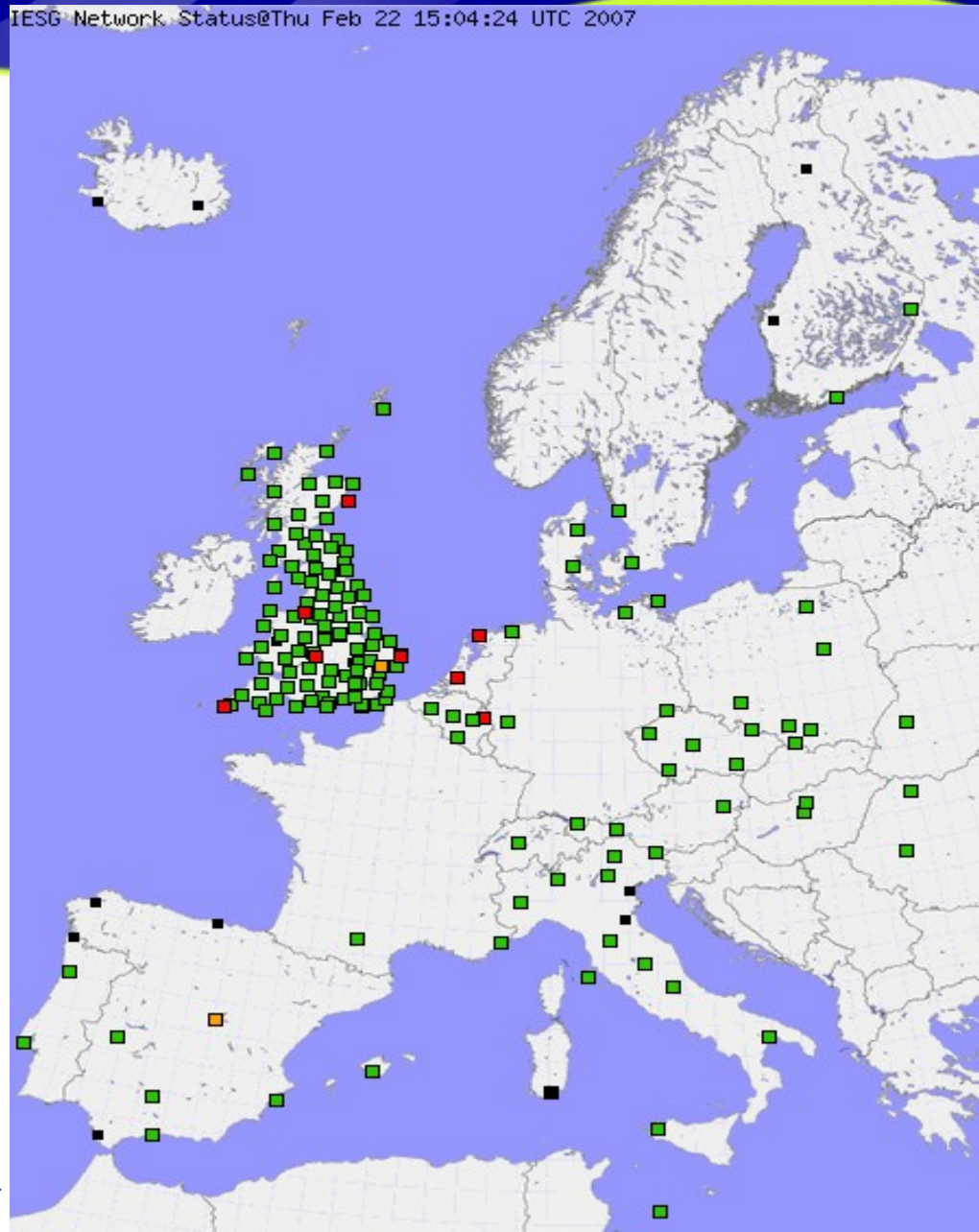
ZTD operationally assimilated by NWP

IWV plots available for forecasters

<240 sites processed in <20mins

European solution for better coverage and quality (also helping out other NMSs)

# Current MetO network



Forecasters given training to better interpret data and identify suitable weather conditions

Semi-formal feedback forum established

Unfortunately training was not compulsory = low participation !

Education important...

## Problems:

Insufficient cases of suitable weather conditions for consideration

Forecasters having a lack of understanding of what the data are showing

## Recommendations:

Data available in more like real-time

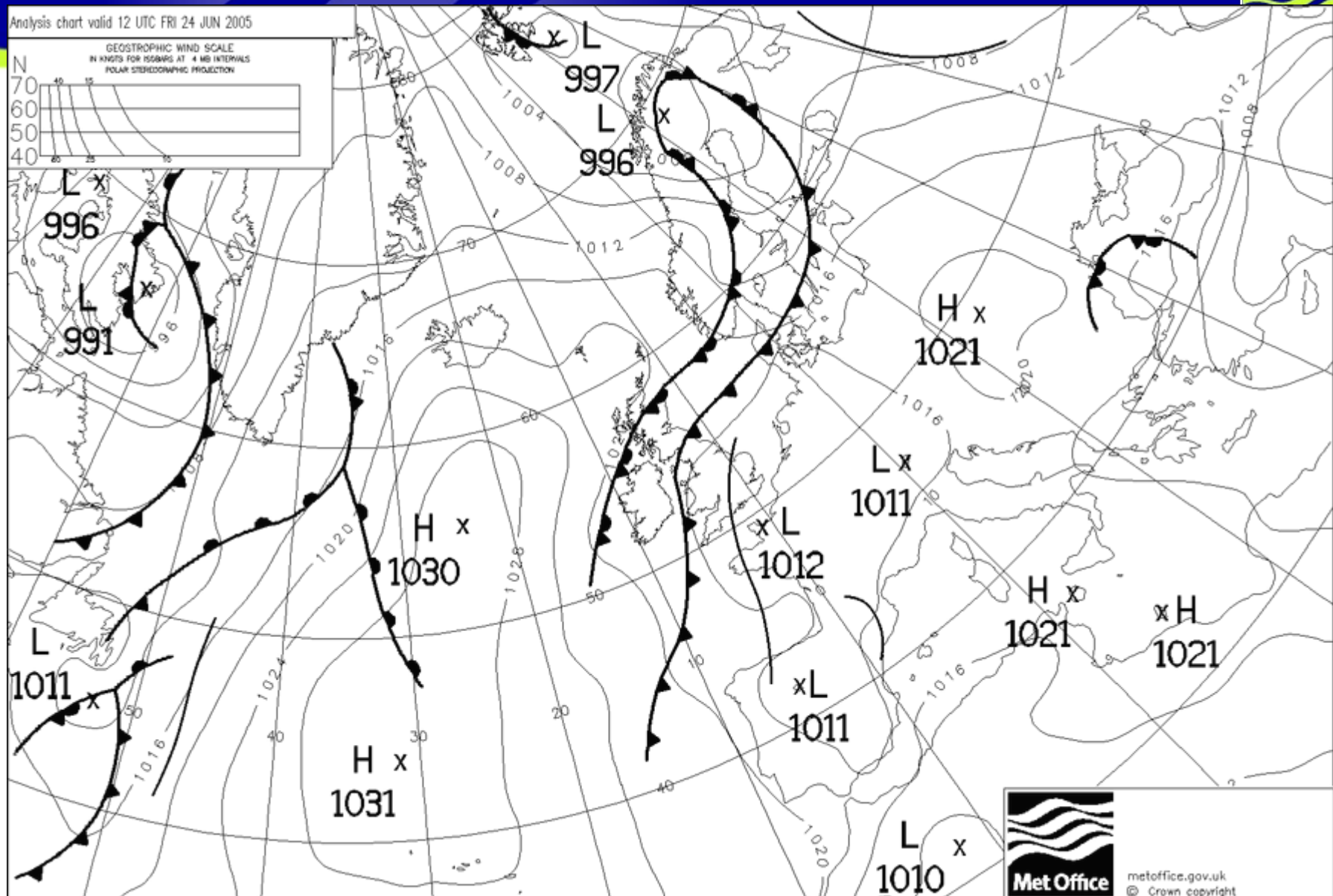
Further training to better understand the data

Able to integrate with other data types

Hopefully we can accomplish this in 2007 !

Synoptically forced event with wide spread thunderstorms throughout Southern UK and the Midlands. A couple of flash floods.

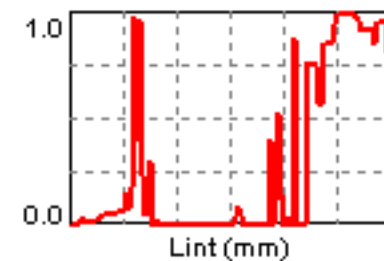
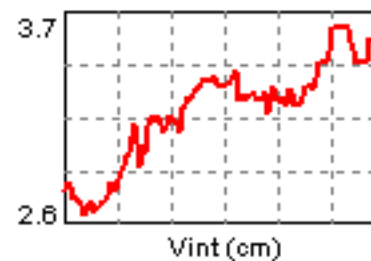
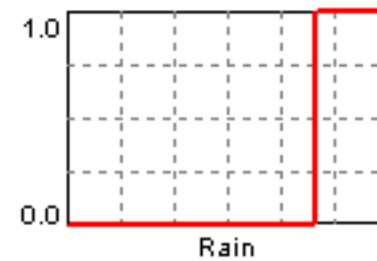
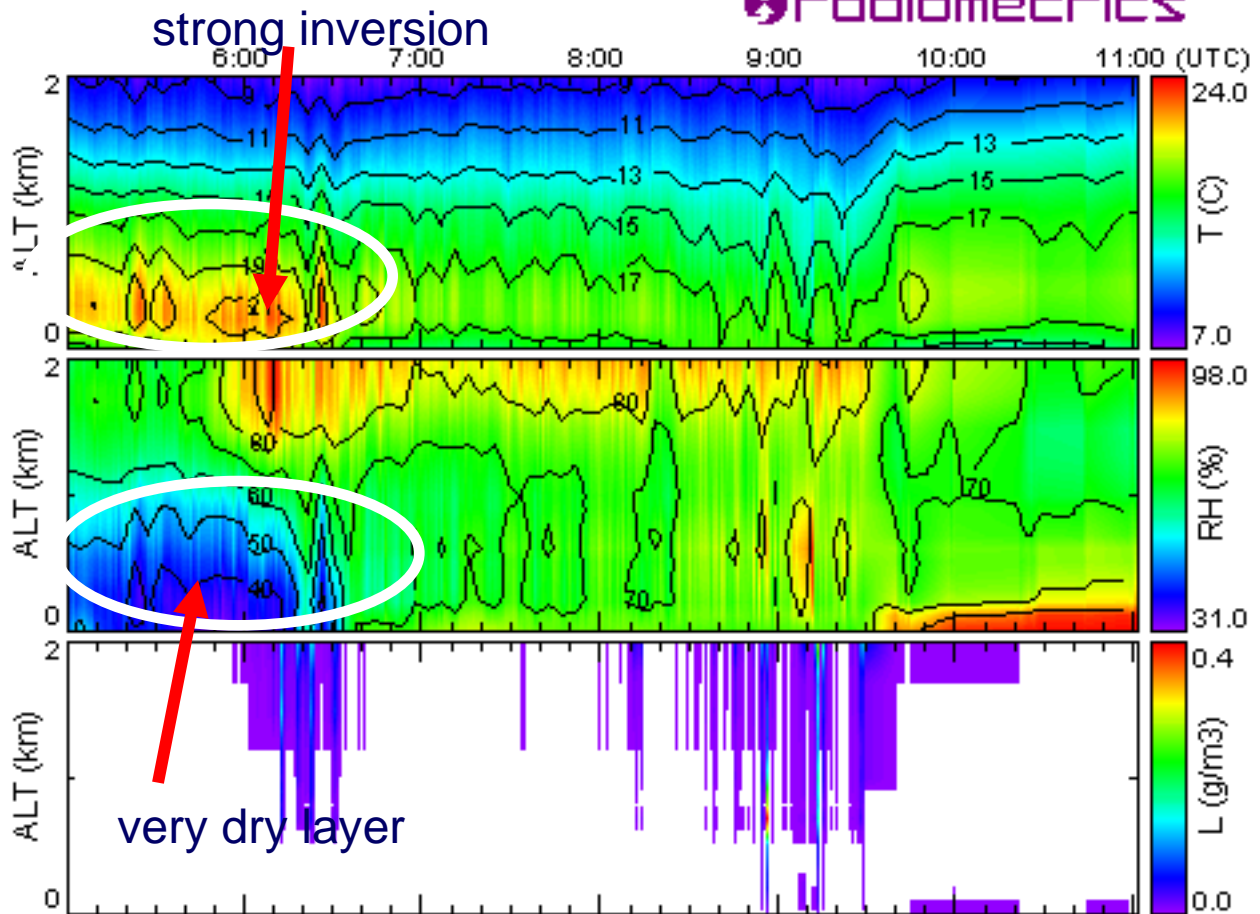
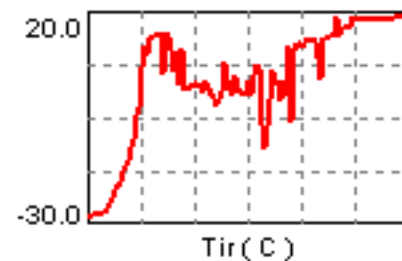
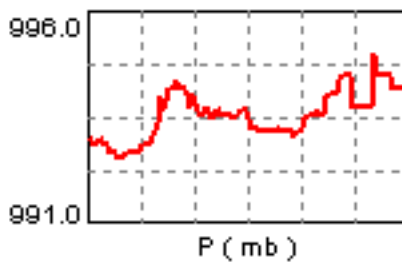
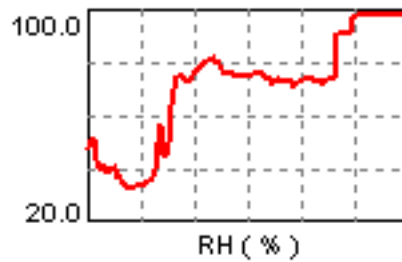
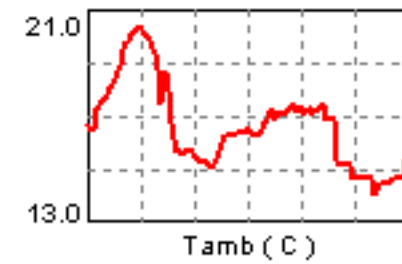
Trough progressing over southern UK from westerly direction with associated high IWV and convective thunderstorm cells





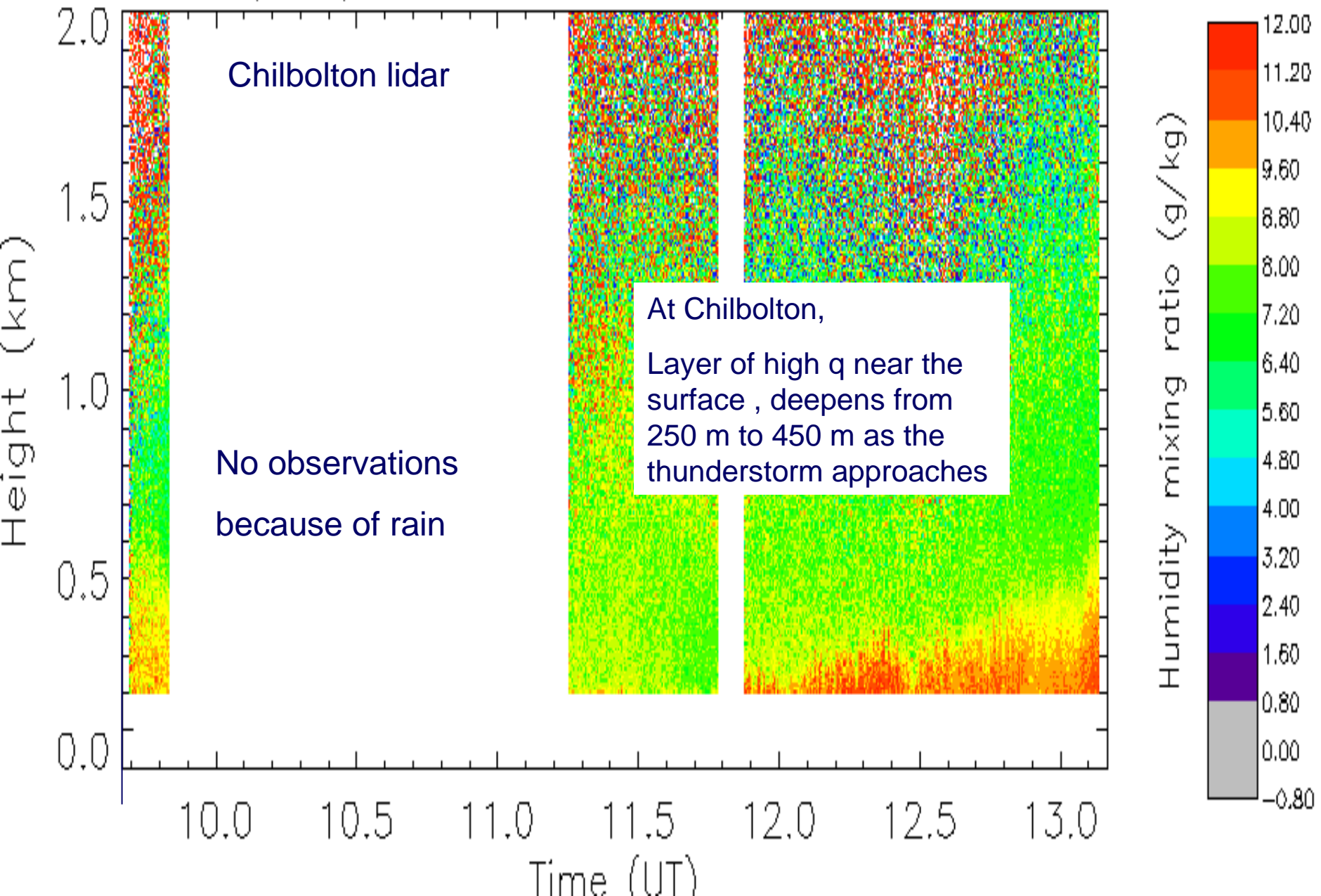
From: 05:00:05 06/24/05  
To: 11:00:05 06/24/05

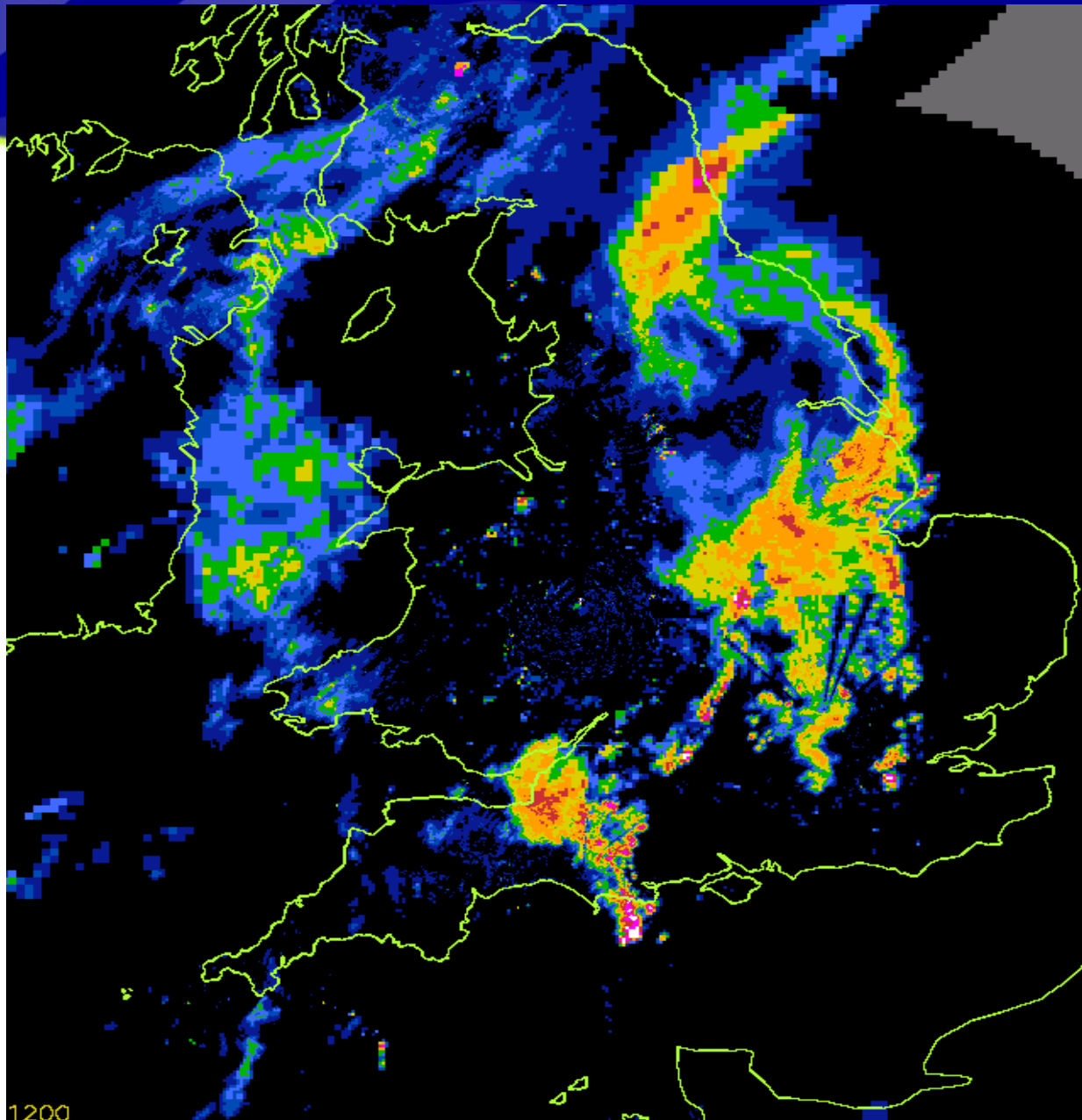
radiometrics



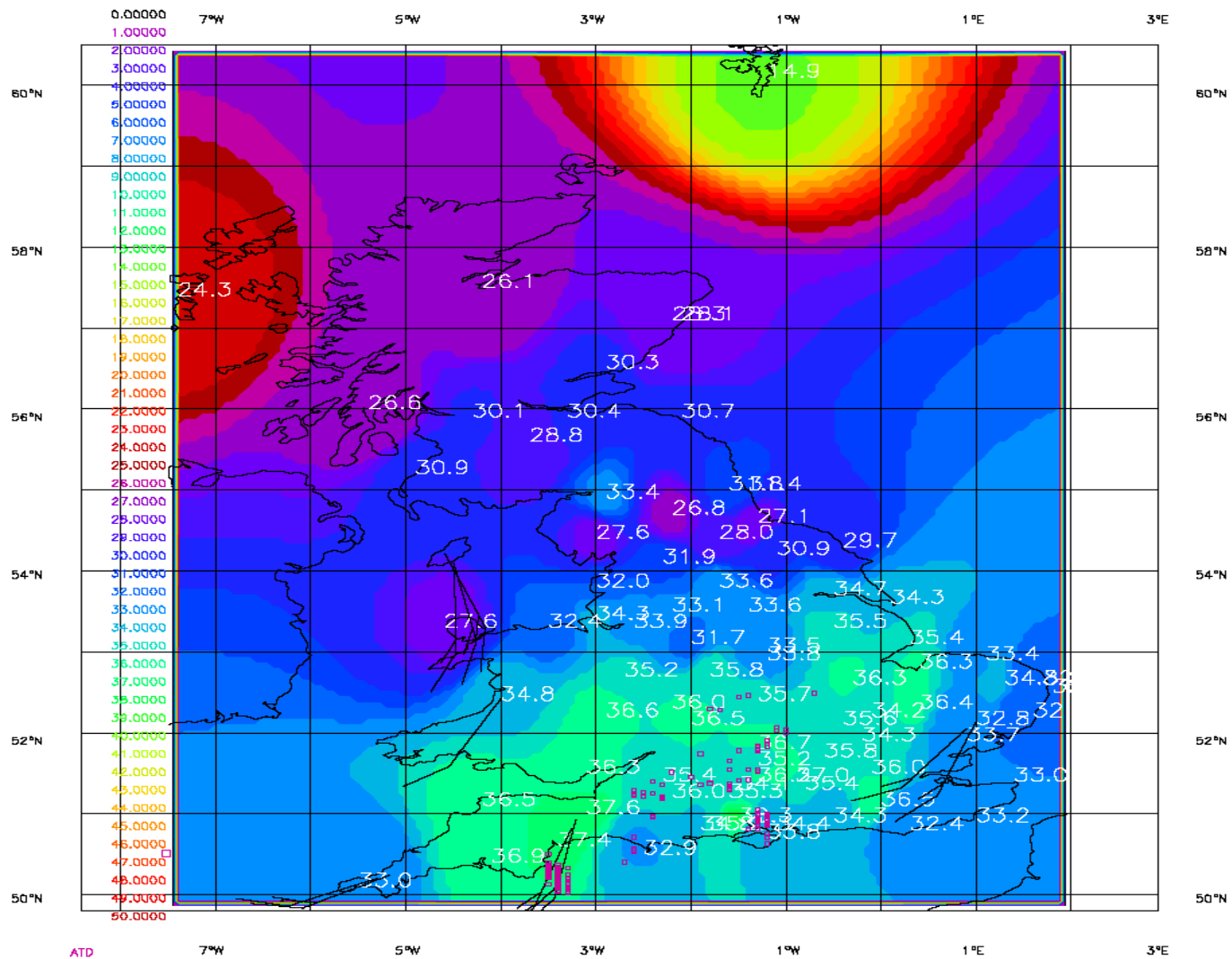


24/06/05 From 9:41:27 to 13:08:04





# GPS IWV 200506241000 2km winds



Low centred over Irish Sea, winds generally southerly

High IWV moving from south and tornado in Birmingham (~13:15)

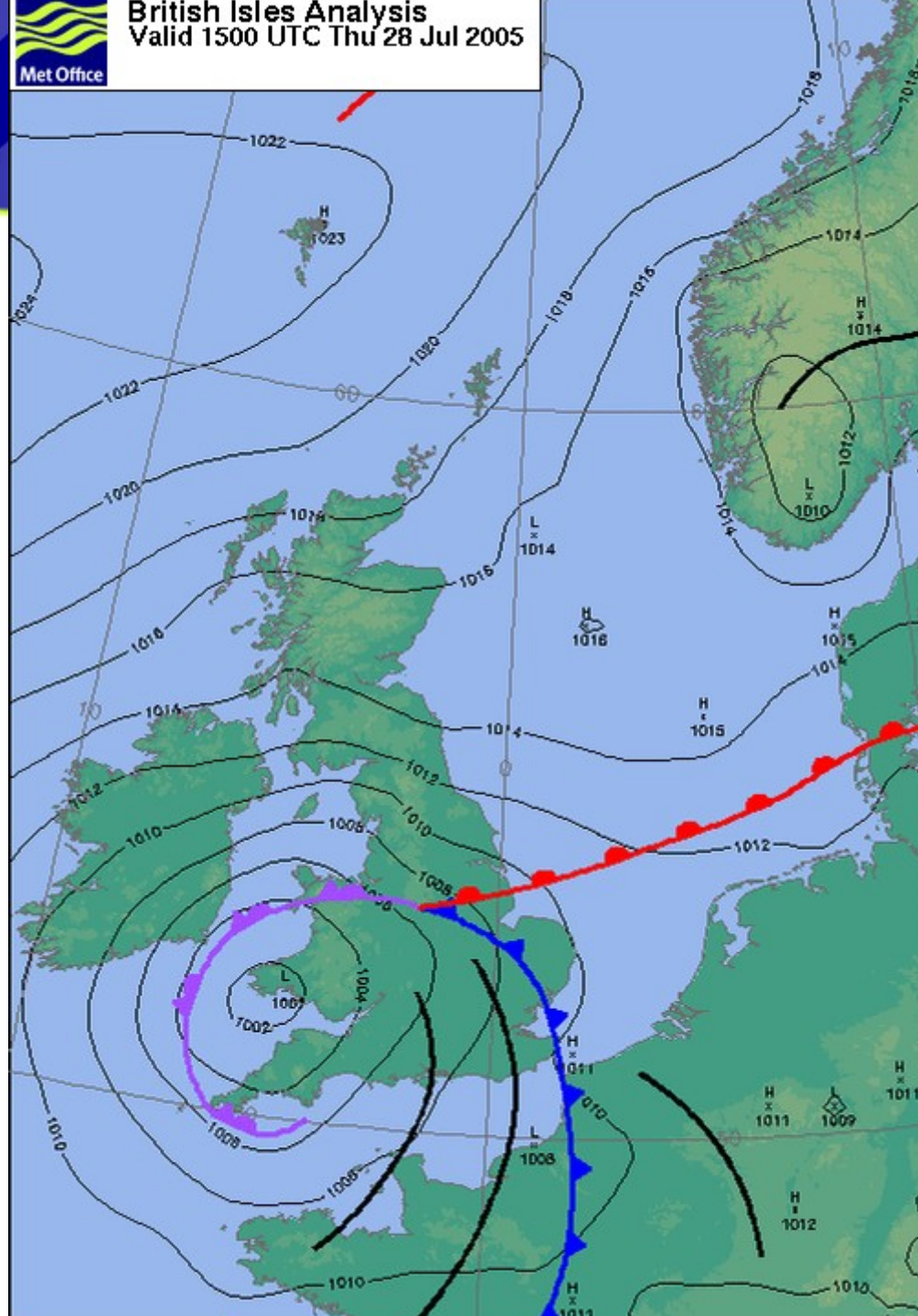
High IWV then tracks east and second tornado touches down at Peterborough (~17:00)

Dry tongue over south west not corresponding with satellite WV

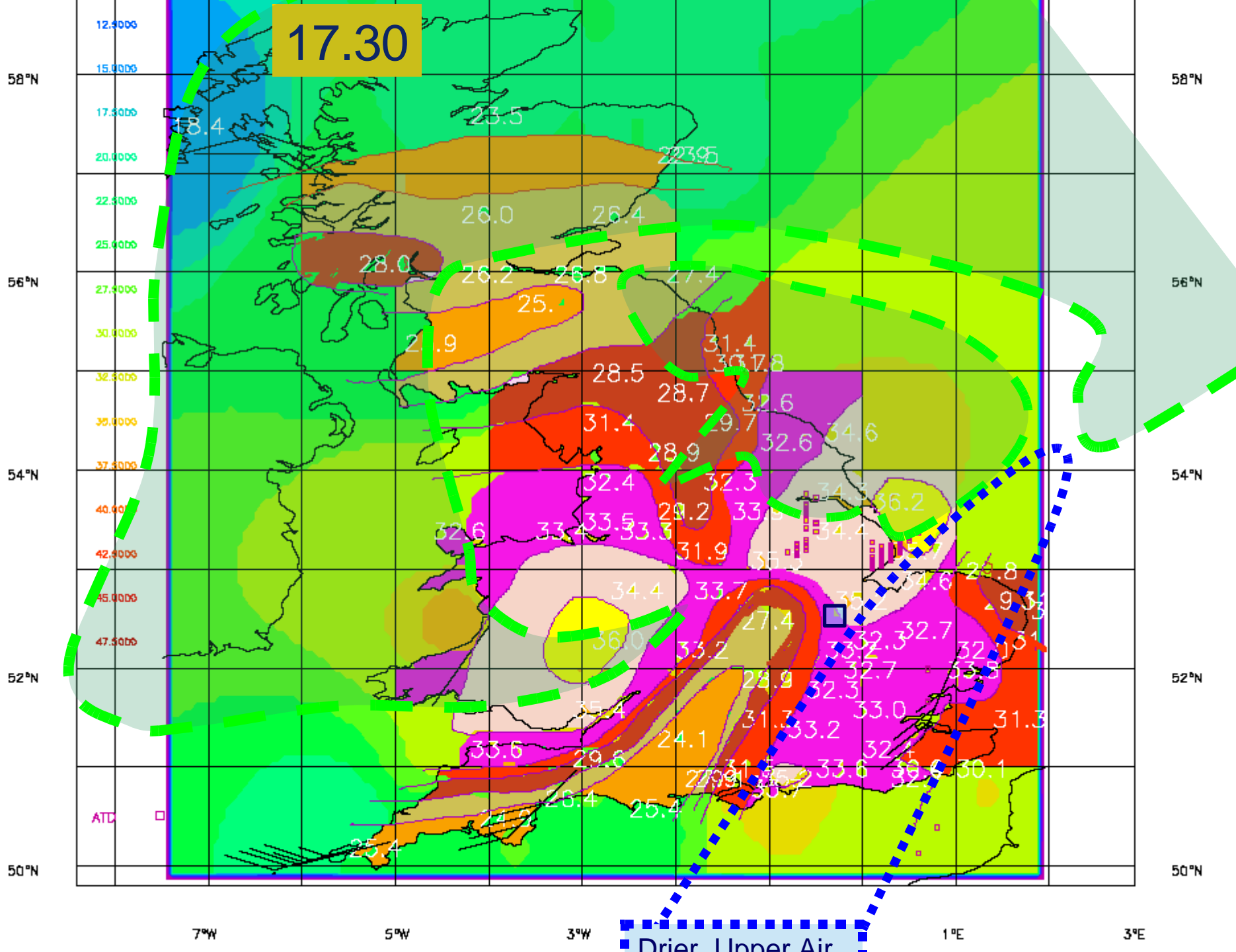
# Case Study 2 – 28<sup>th</sup> July 2005, Tornado Day !



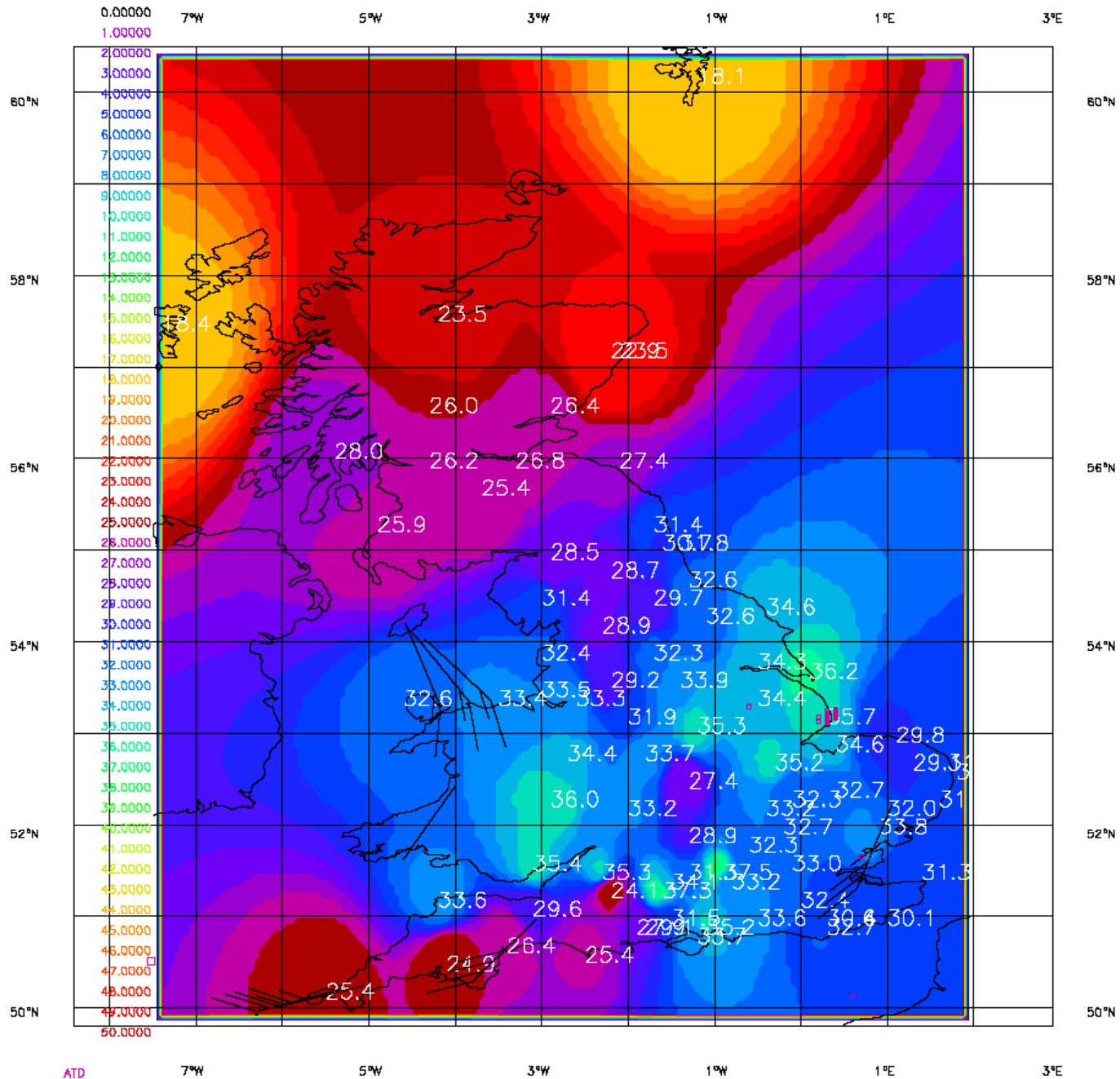








# GPS IWV 200507281730 2km winds



Dense networks of GPS sensors allows us to identify and follow areas of drier/colder air which were associated with thunderstorm generation. Both the wind profiler and the radiometer time series contribute to identifying the thermal and humidity structure associated with the storms.

Comparison with radiometer and radiosonde IWV in good agreement with GPS sensors

High IWV (and ATD) not always tracking with winds

Comparison with satellite IWV adds information to forecast

Sub-hour GPS files and processing

Increasing network density

Virtual RINEX data

E-GVAP Super-Sites for validation