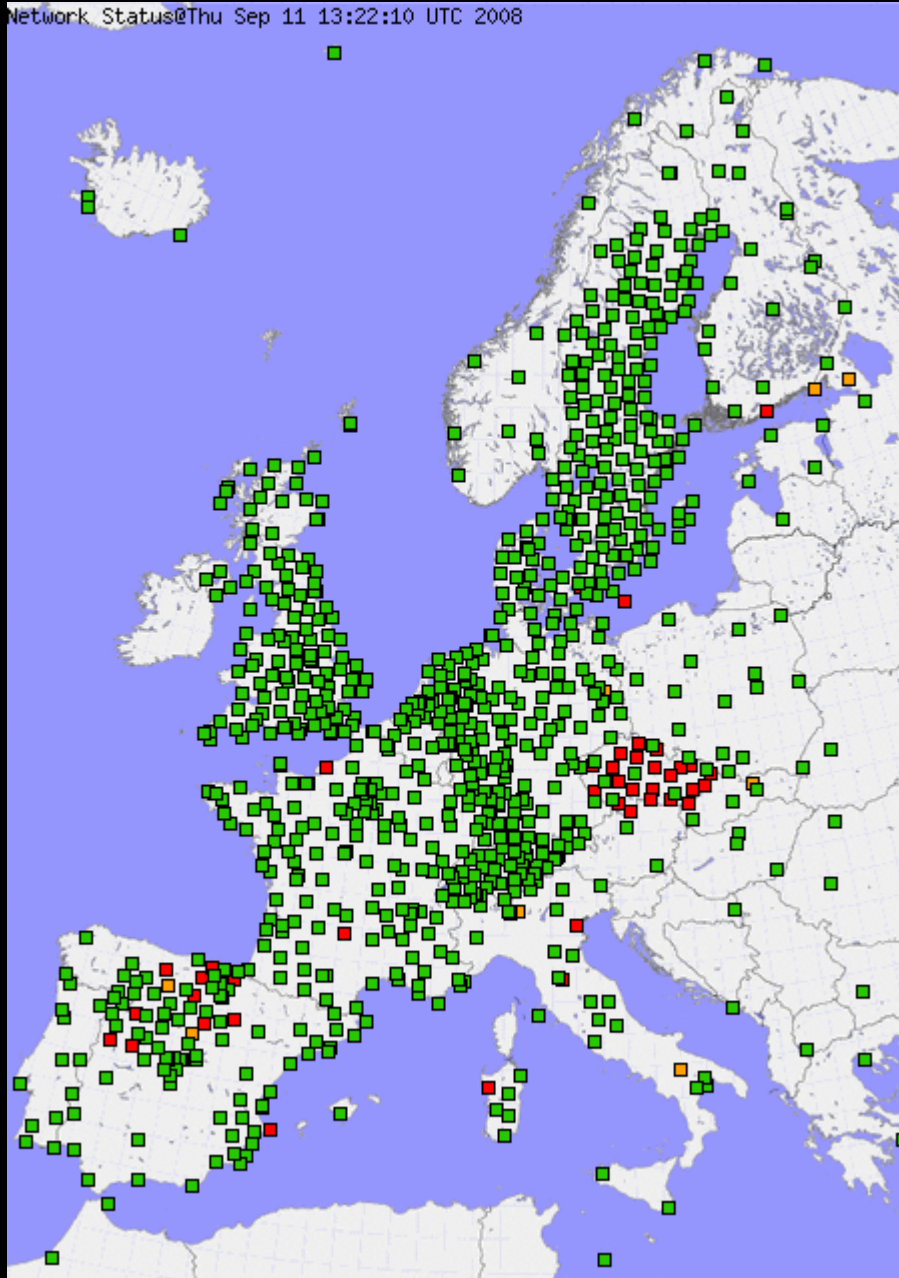


Network Status@Thu Sep 11 13:22:10 UTC 2008



## Near Real Time GPS Processing at the UK Met Office

E-GVAP info available at <http://egvap.dmi.dk/>

Network and GPS processing Servers

NWP Quality Monitoring and recent developments

Potential of GPSWV as tool for monitoring climate change

Recent comparisons

GPSWV system fully operational since May '07

## E-GVAP/MetO servers

2 servers (one as hot-spare) at UK MetO with back-up (IES2) and development servers at Nottingham University

Processing network of ~250 stations in NRT in ~30mins

2 year support contract in place with Nottingham University

## Results:

- a) ASCII files copied to E-GVAP server
- b) Data converted to BUFR format and input into MetDB for NWP assimilation
- c) BUFR also placed on GTS for dissemination to met/scientific community

Optimised Network of 250 stations of max of ~1000

## UK Sites

120 stations on mainland UK (Met + OSGB)

20 Irish sites (OSi and OSNI)

## European Sites (approx)

80 EUREF

40 RGP

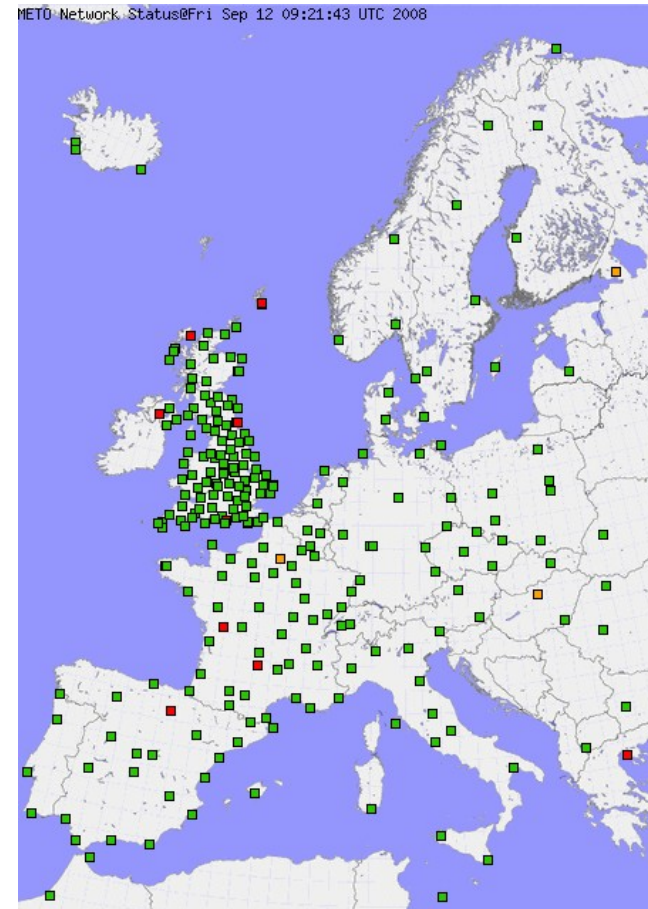
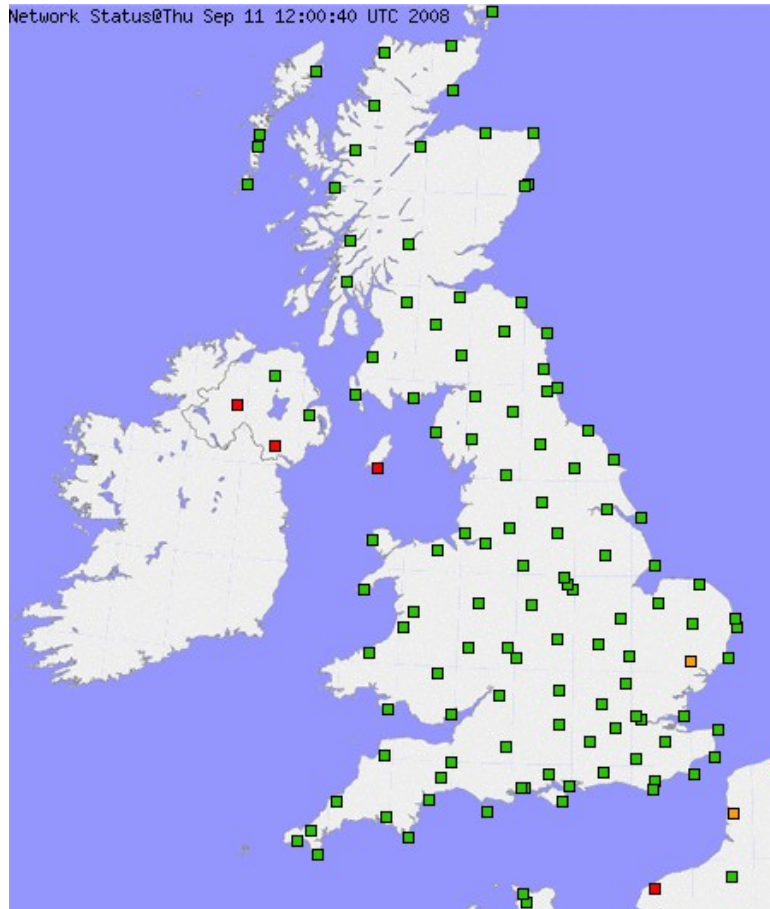
10 Other

Would like access to N. Sea data

Recent problems with data delivery from Ireland

Processing ~25 Spanish sites, some spare capacity

# Current MetO Network 14/01/08



NWP receive ~160,000 obs. per day but only ~6,500 used for assimilation in NAE

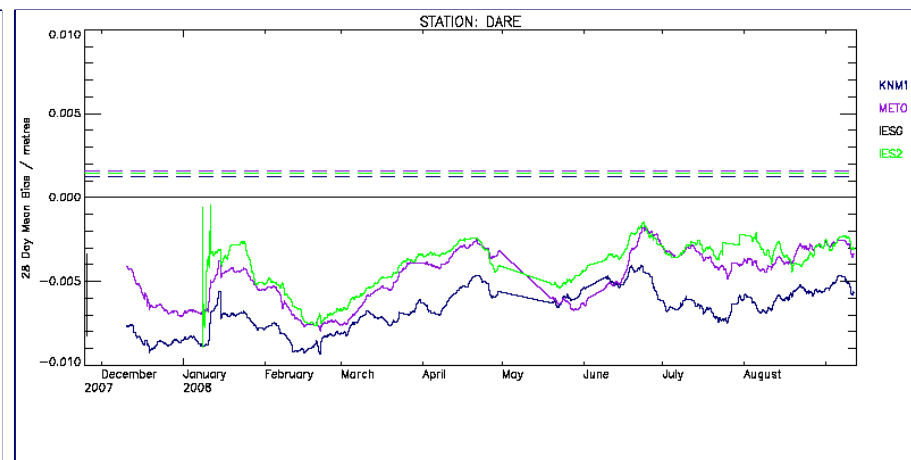
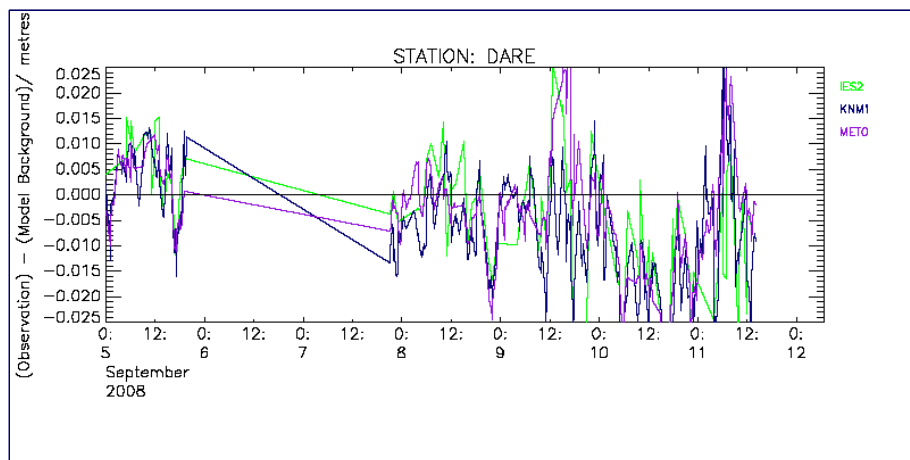
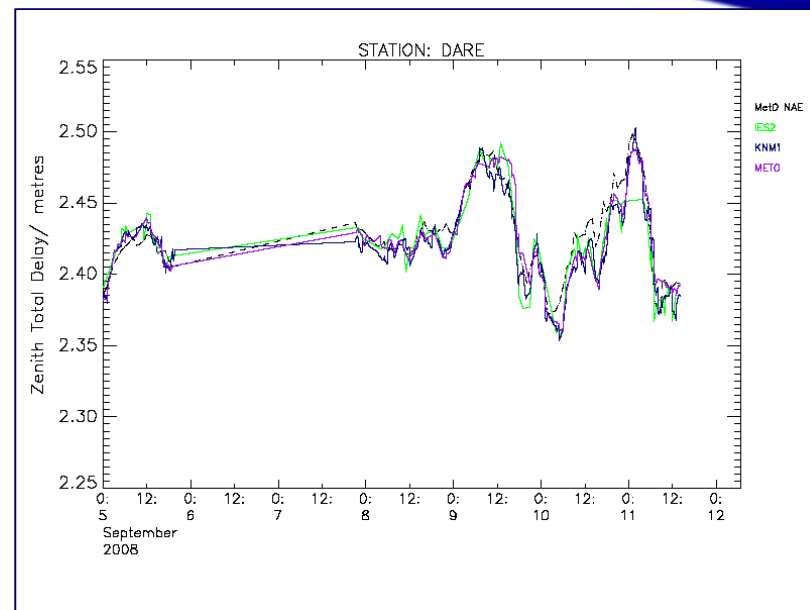
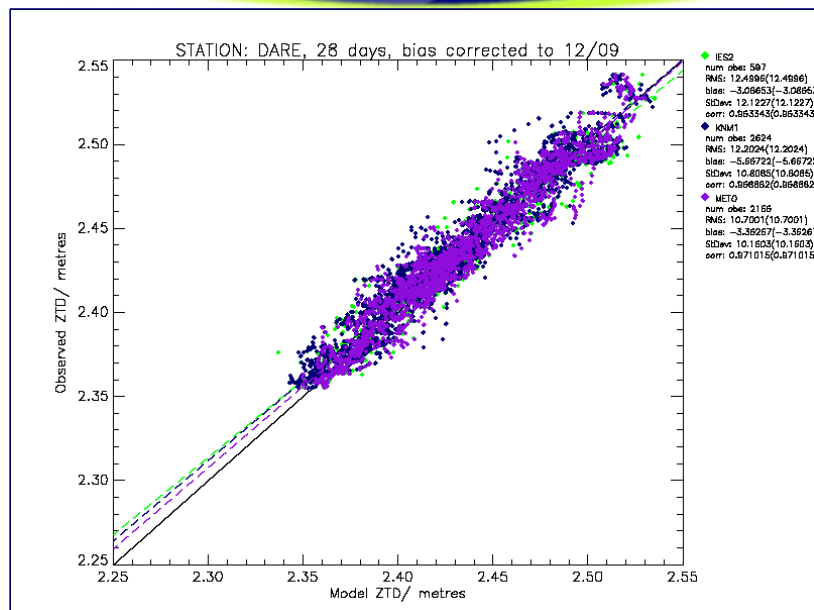
Data QC'd by AC, not on site to site basis

Approx 65% of data is received by NWP cut-off time for assimilation (90mins)

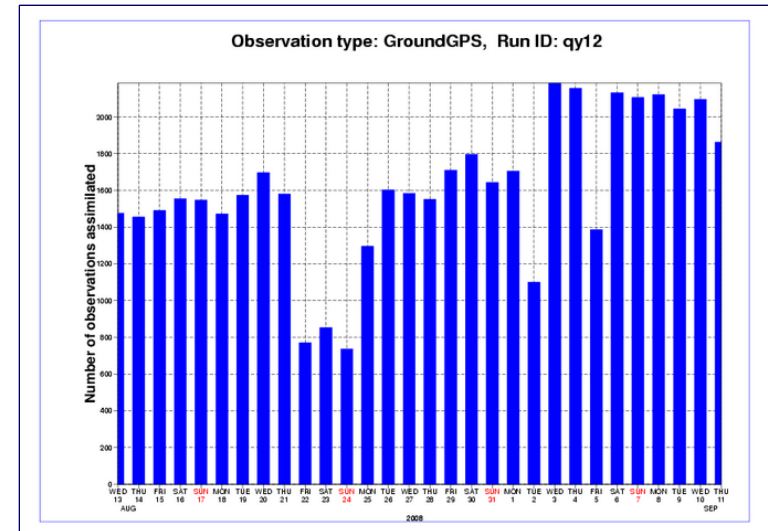
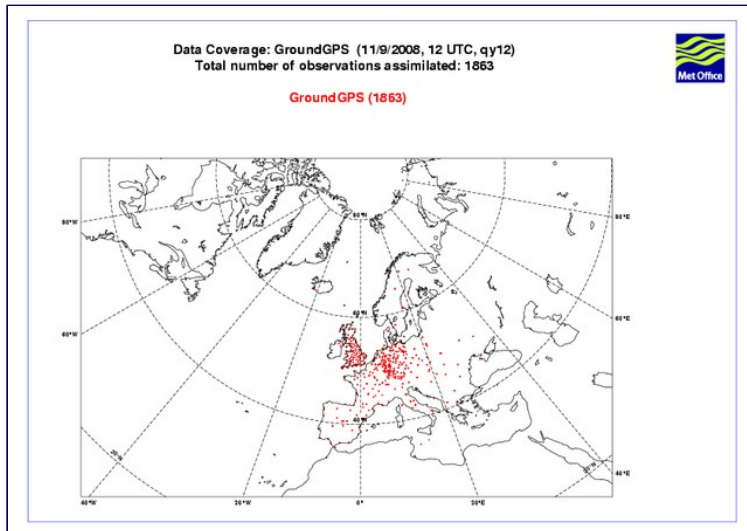
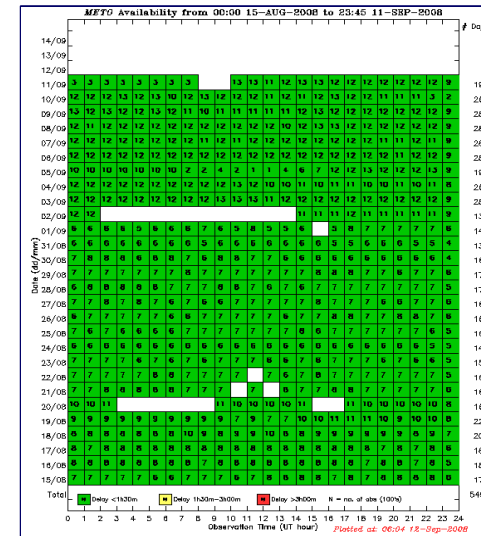
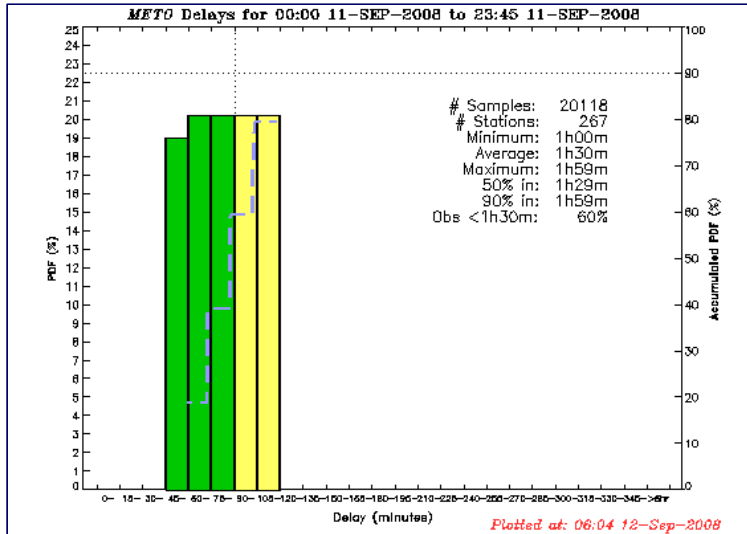
Recently developed ZTD forecast animations



# NWP Data Quality Monitoring



# NWP Data Delivery Monitoring

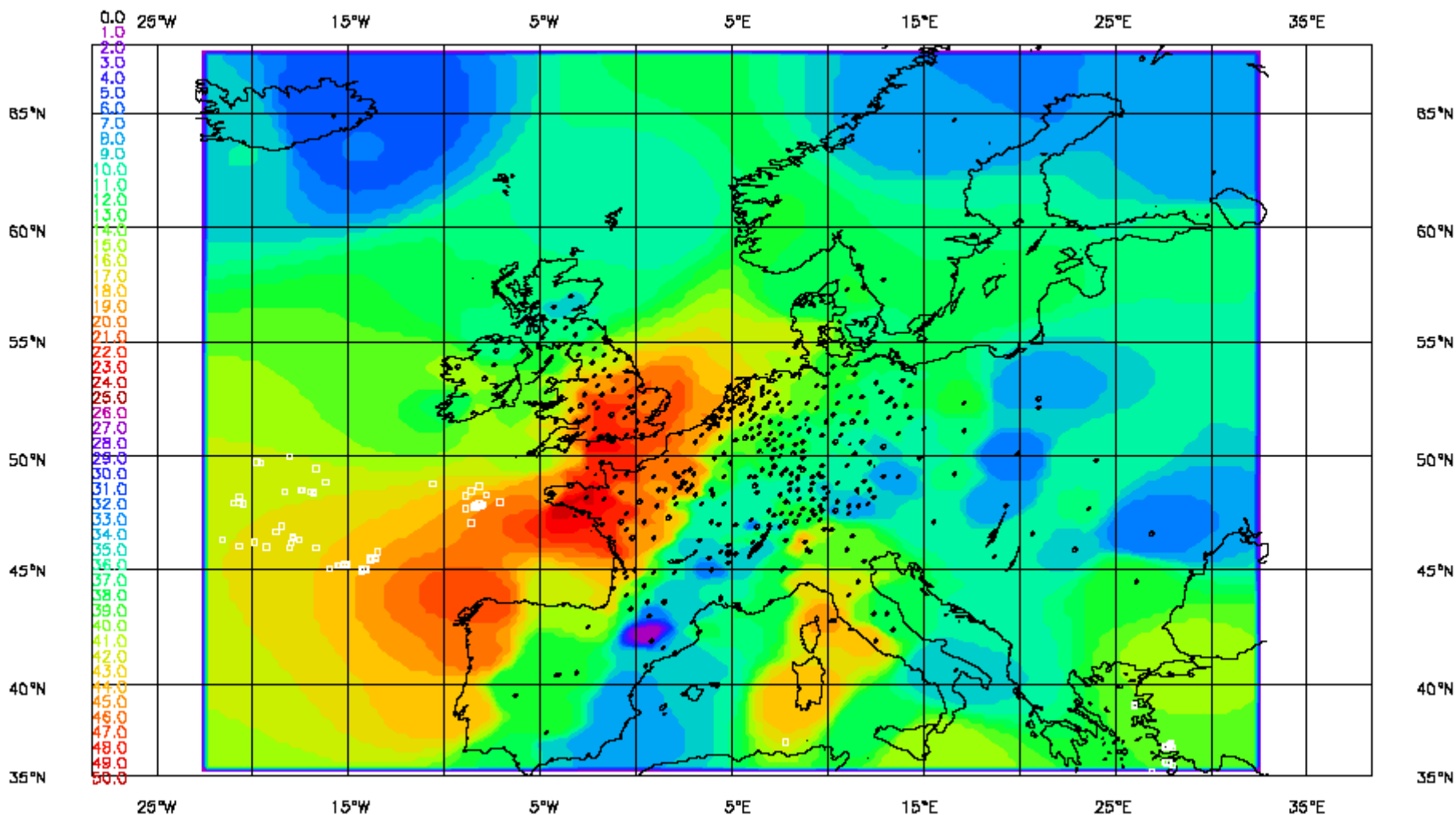




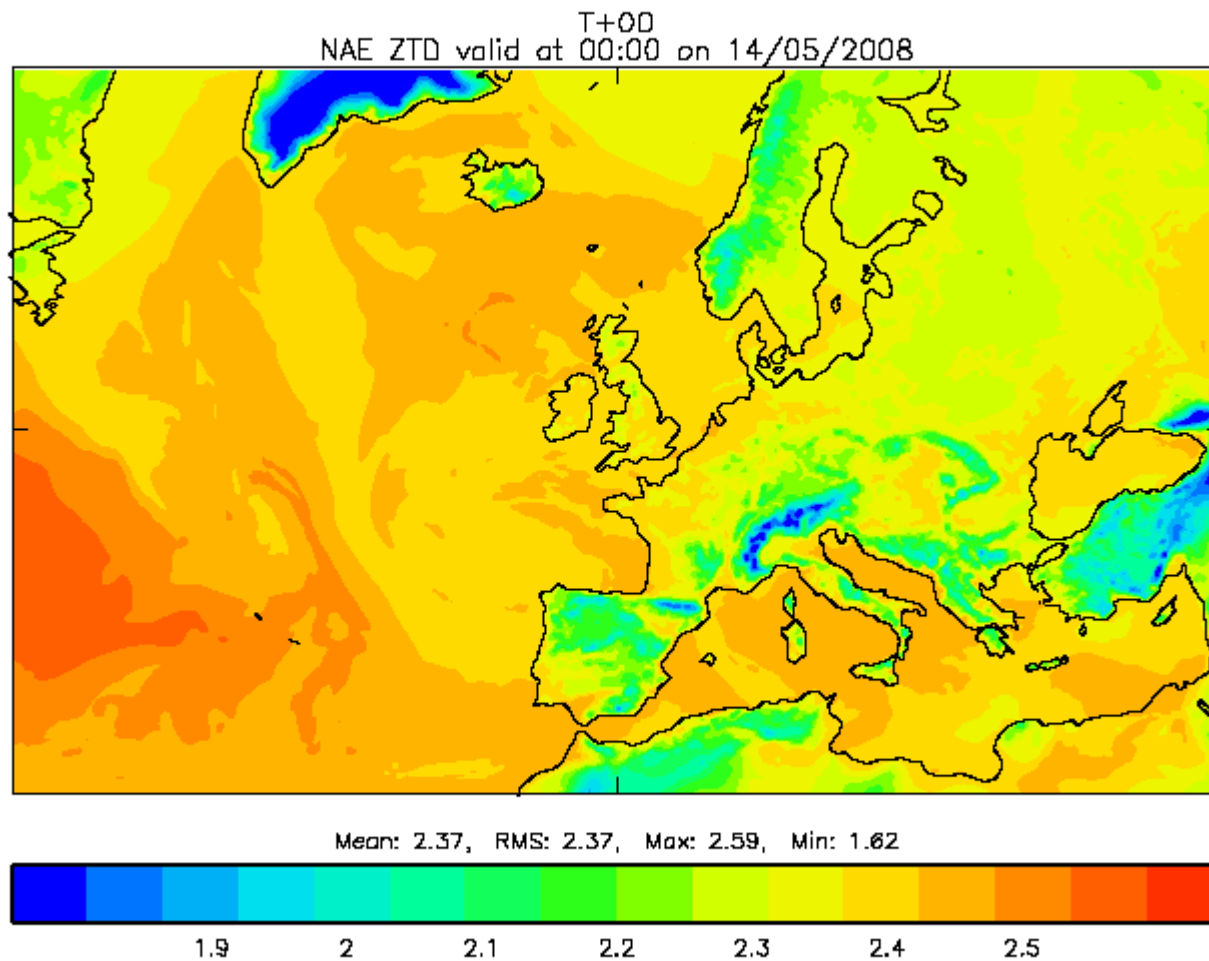
# E-GVAP Example Plot



GPS IWV 2008011509 UTC – 2km winds



# NWP ZTD Forecast Animation



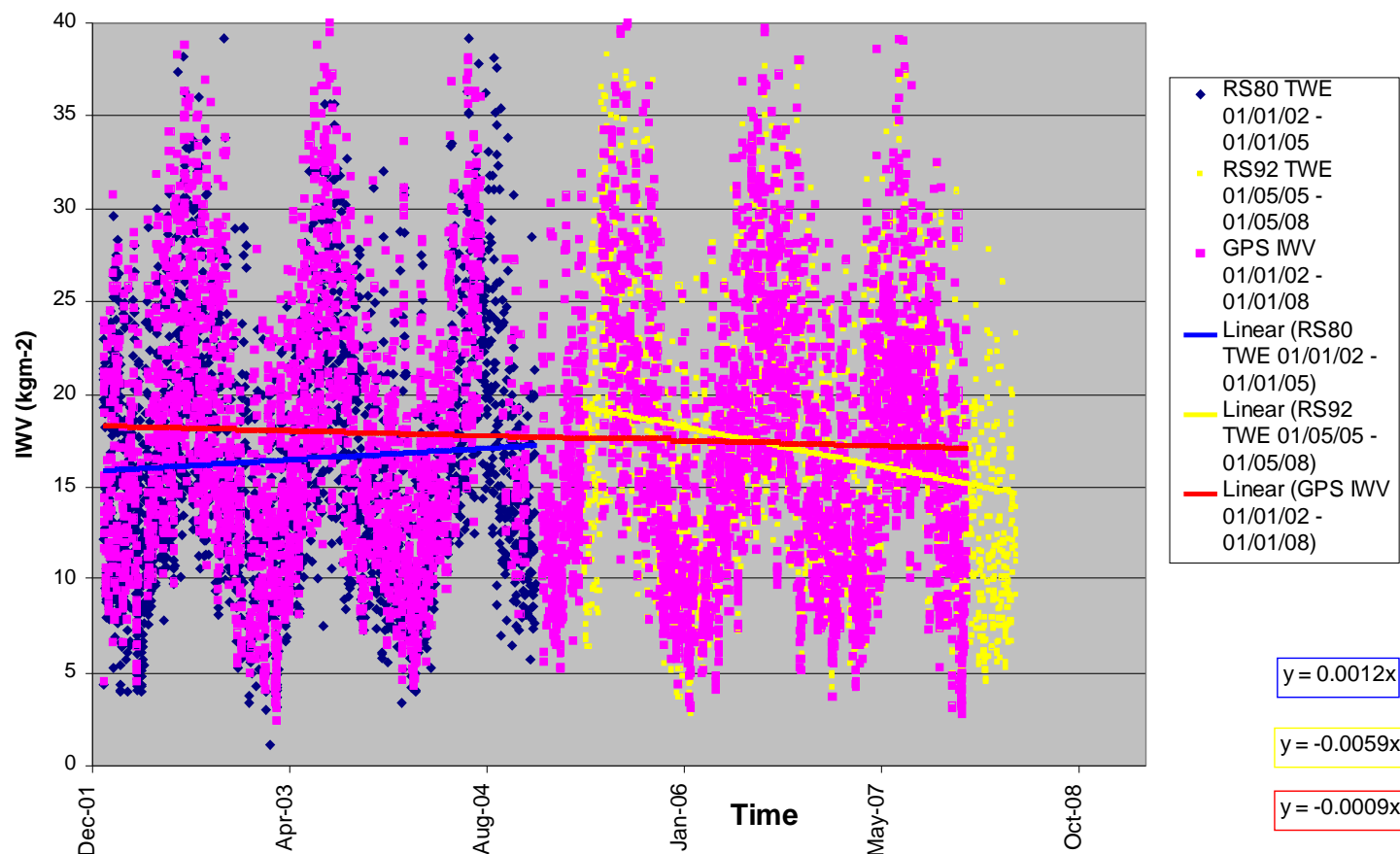
GPSWV has potential use as a climate monitoring tool

Long term monitoring can also highlight biases and instrument changes

GPS time series does show trends but reprocessing needs to be carried out to eliminate the effects of new processing models

Also, all radiosonde upgrades and type changes needs to be accounted for to eliminate any false biases being introduced

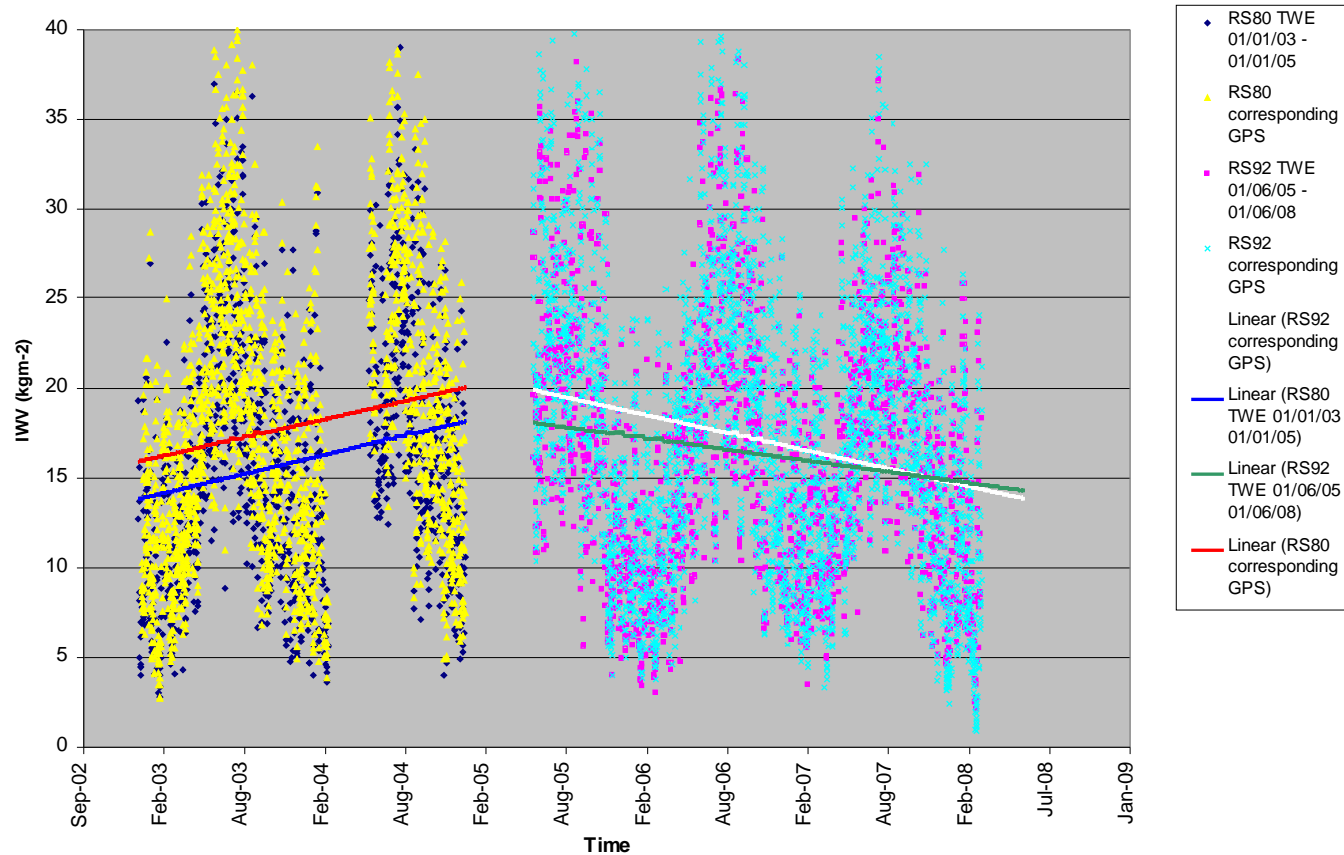
Climate Trend of IWV at Camborne 2002 - 2008



# GPSWV for Climate Monitoring

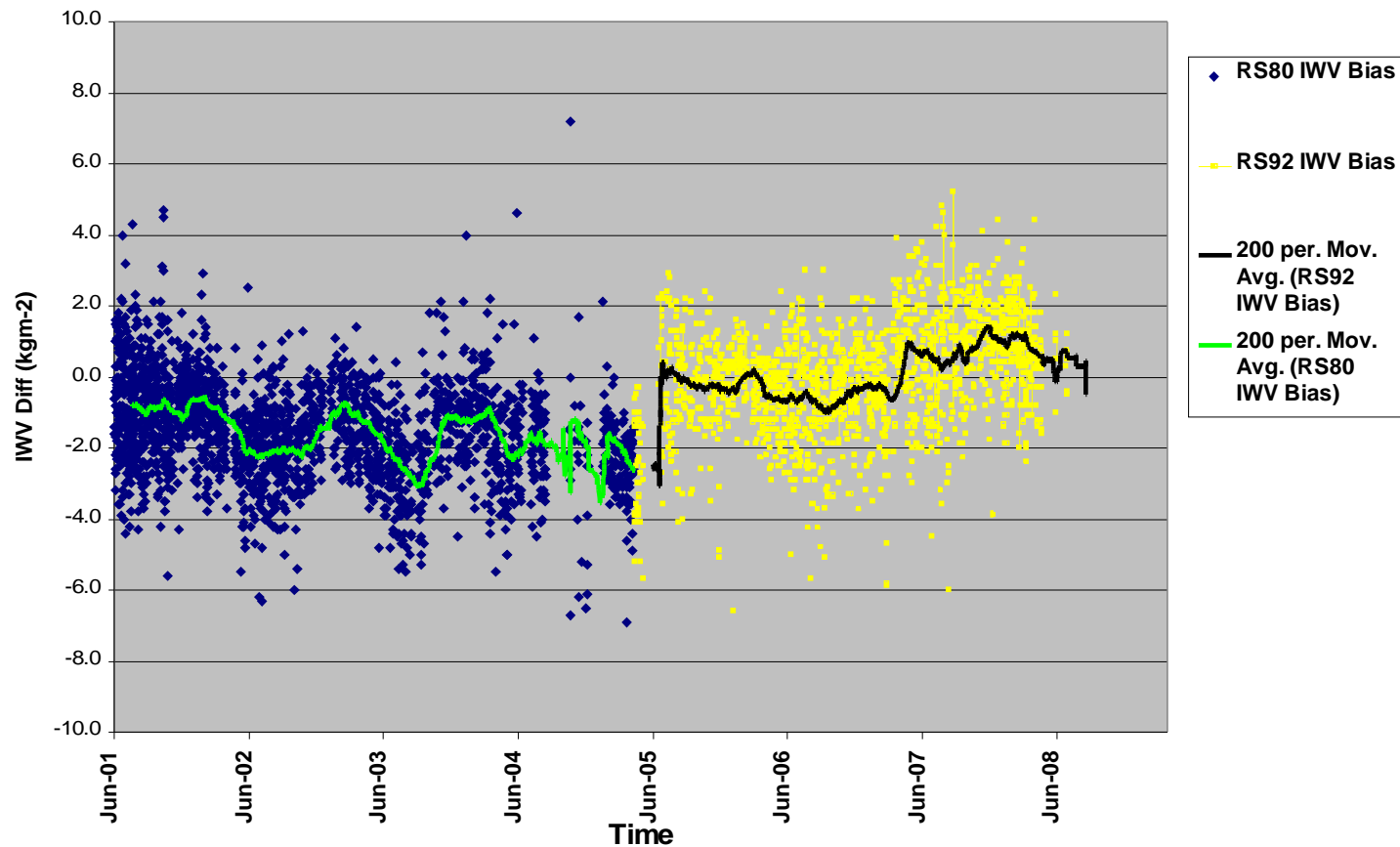


IWV Climate Trend Watnall 2003 - 2008



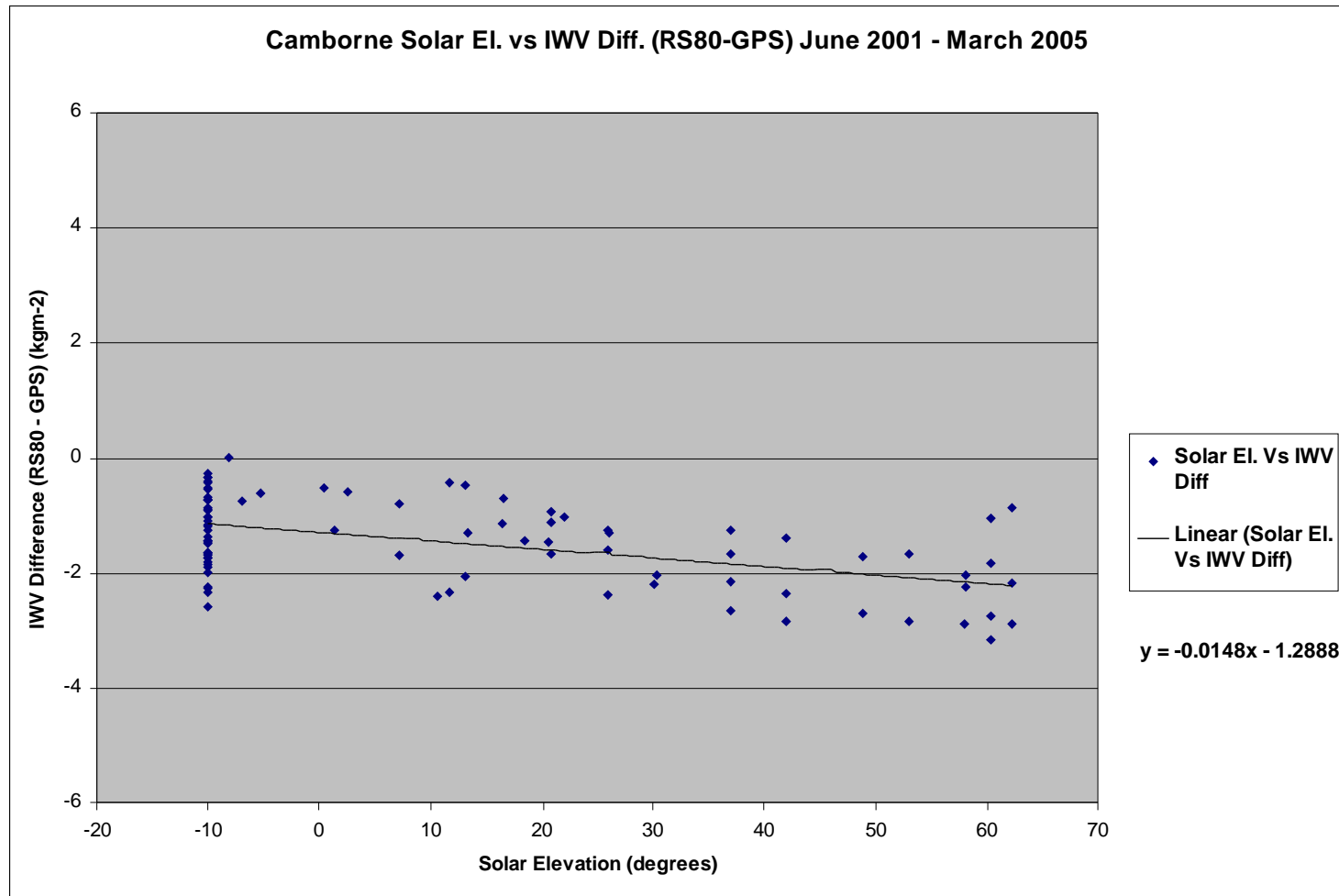
# New radiosonde introduction

Long Term Trend of IWV Bias (RS-GPS) at Camborne  
01/06/01 - 31/12/08

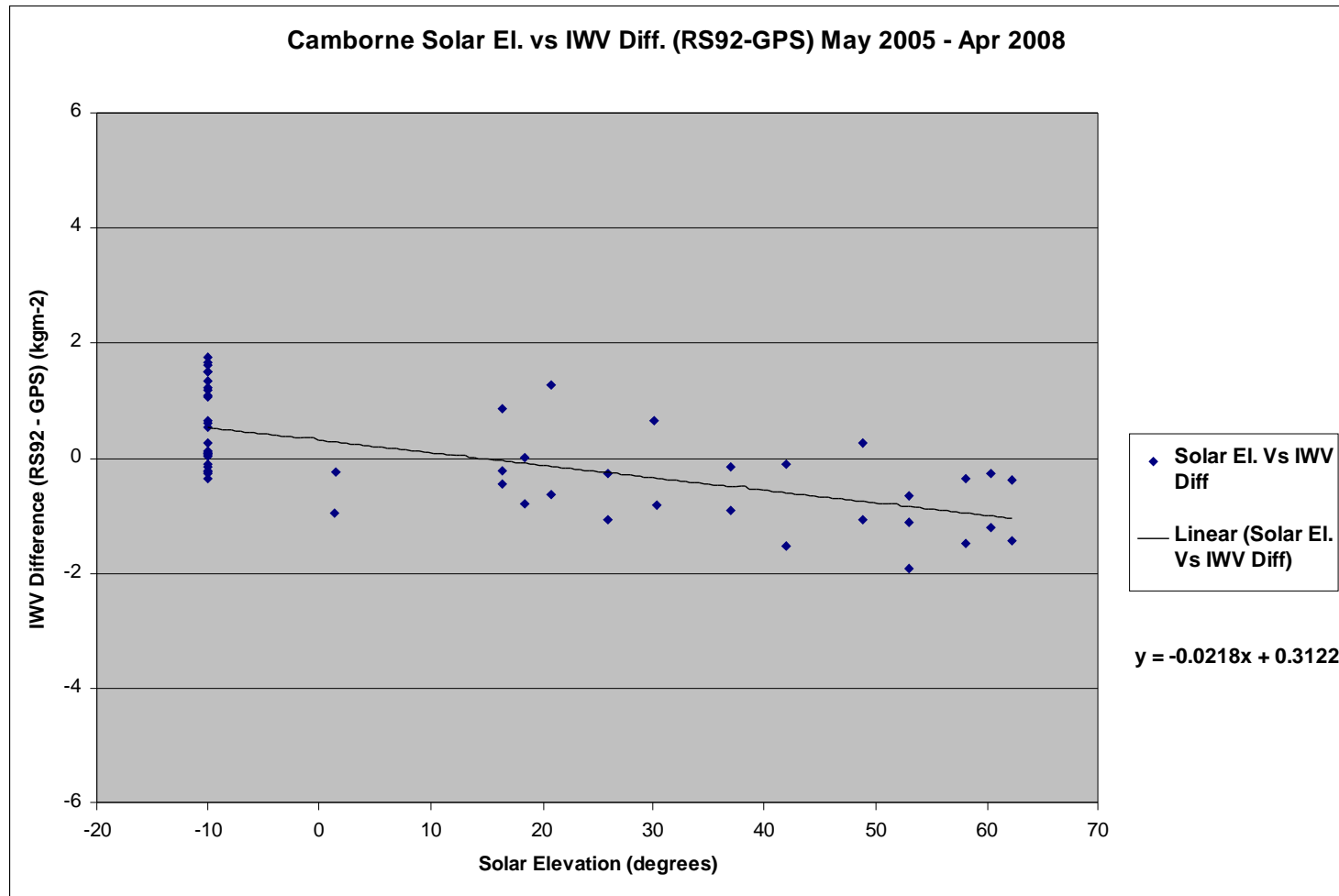




# New radiosonde introduction



# New radiosonde introduction



Compare RS and GPS timeseries against microwaver radiometer

Reprocess long term data series to ensure consistency in GPS processing technique and ensure all radiosonde biases are correctly accounted for

Comparison of ZTD f/c vs. observations

Improve IWV plots by use of NWP ZTD over areas with no observations (sea)

Create O-B ZTD and IWV maps to highlight areas where NWP 'gets it wrong'

Investigate sub-hour processing

FUND Project – Future Upper Air Network Design (UK)

EG-CLIMET - European Ground-based observations of essential variables for Climate and operational Meteorology

WaVaCS – Water Vapour in the Climate System

E-GVAP II of course...