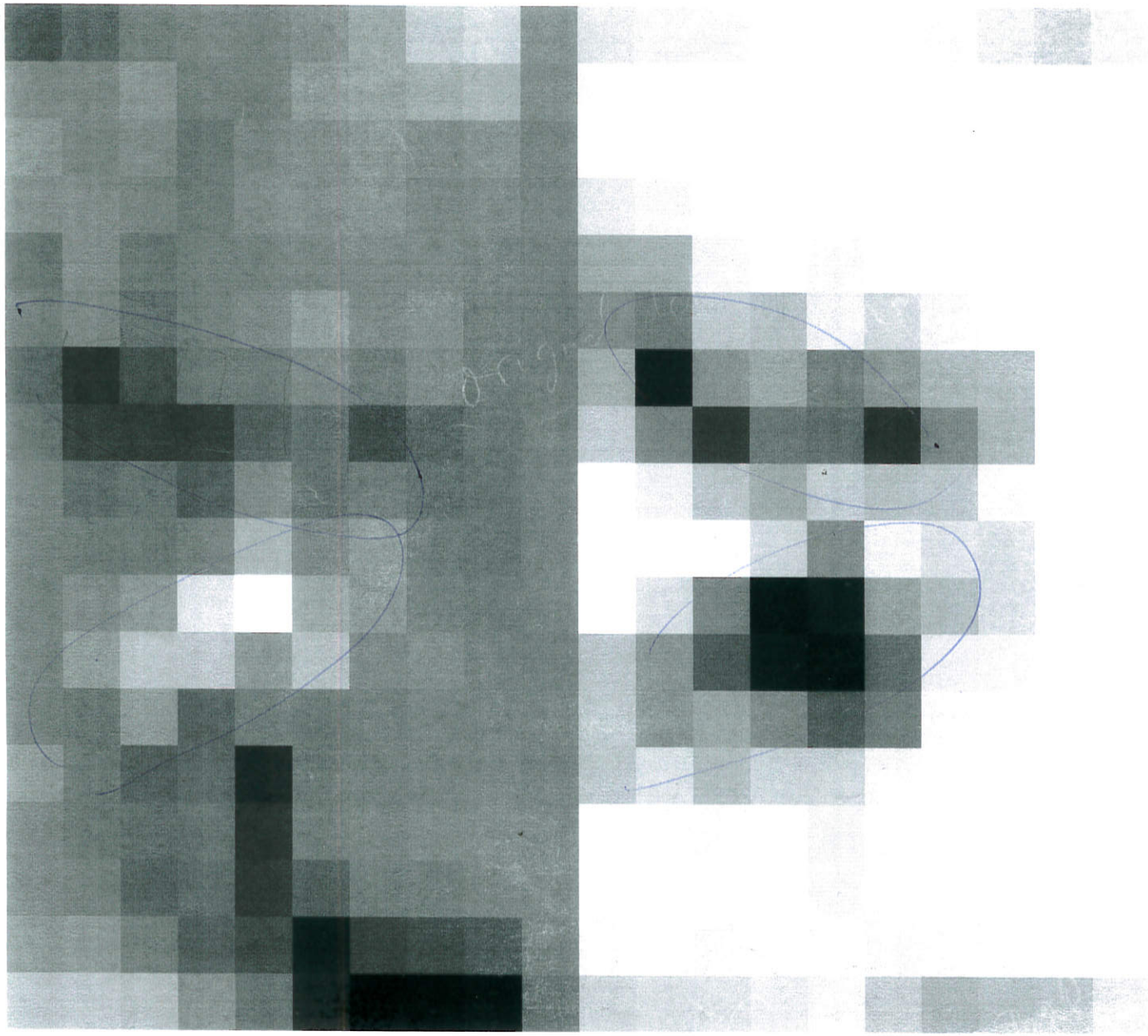
m.f. mean. σ.



very rough estimate

step ~~7yr~~ 7° × 1/10 yr

10 × 13

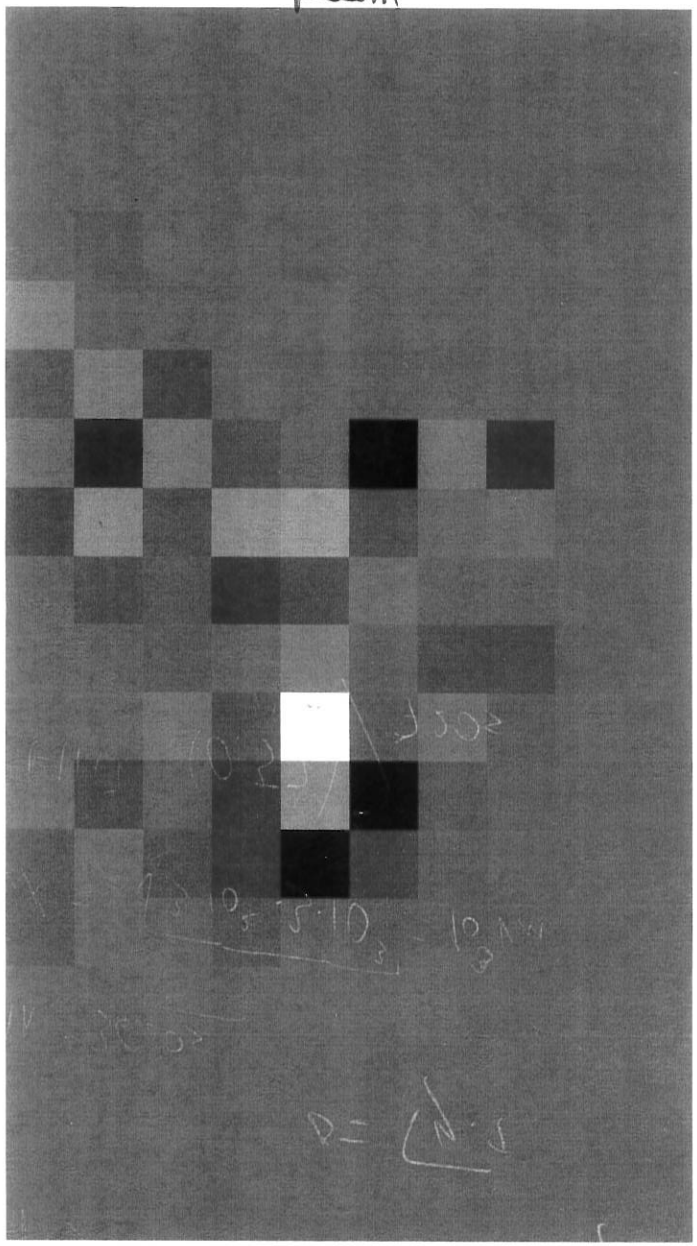
140.

~~140~~ 2yr

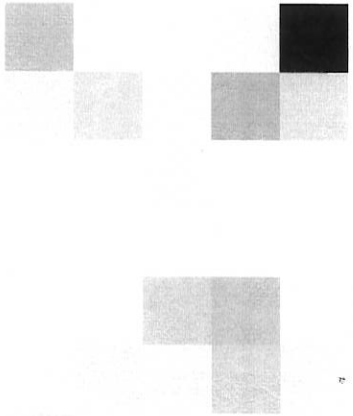
20 × 26

hm

mean



σ



MDI $(1.5\,Mm)^2 / 5000s = \eta$

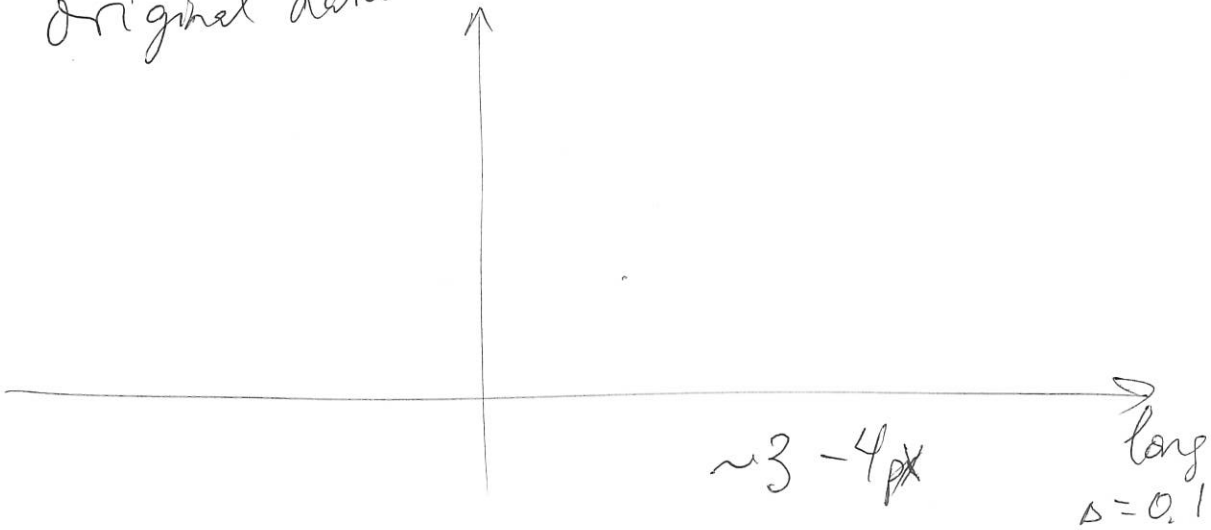
$\sigma = \sqrt{\eta \cdot \tau}$

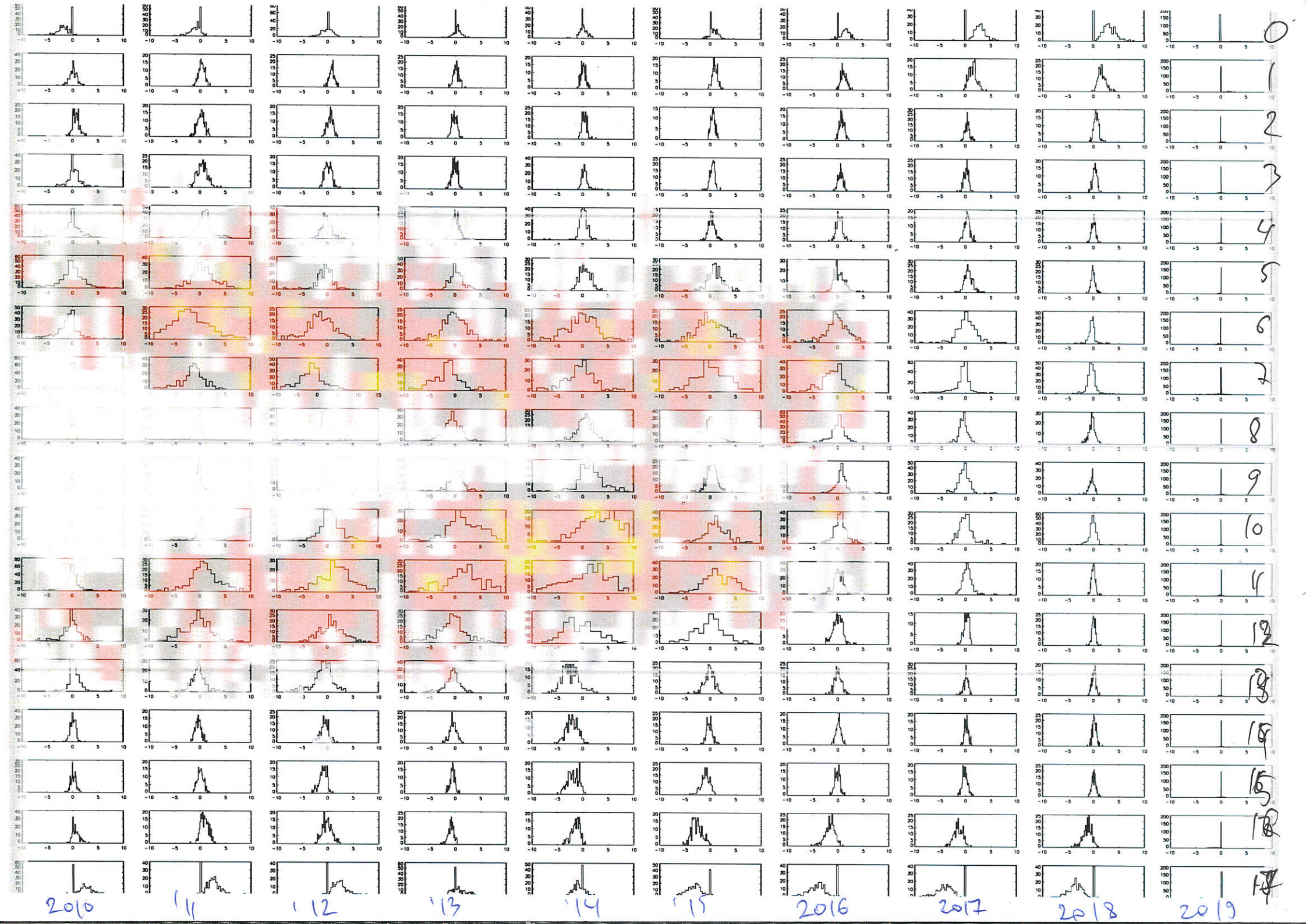
$1h = 3600s$

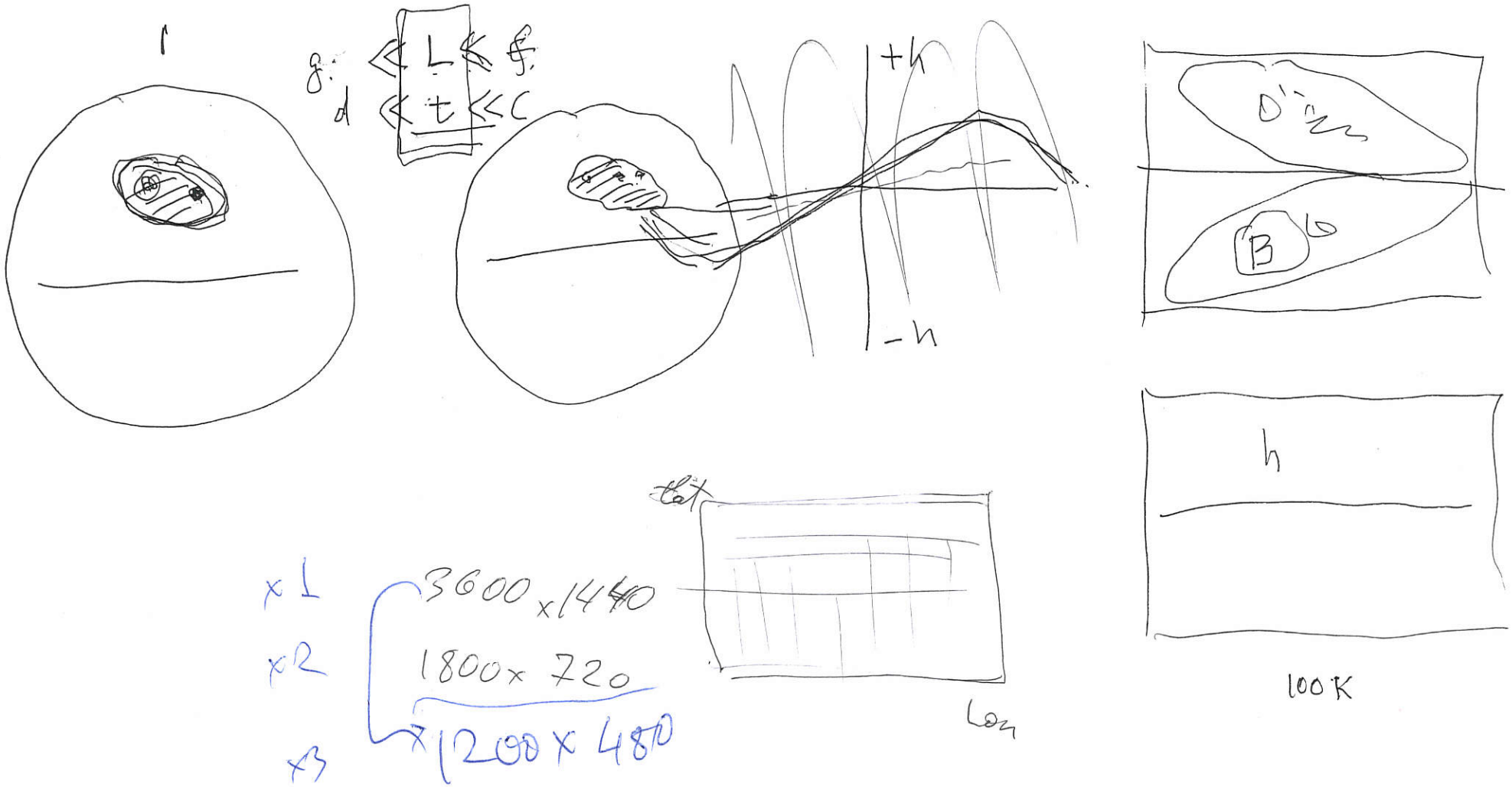
$\Delta x = \sqrt{3 \cdot 10^2 \cdot 3 \cdot 10^3} = 10^3\,km$

HMI $(0.57\,Mm)^2 / 720s$

original data




0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
2010
'11
'12
'13
'14
'15
2016
2017
2018
2019



x1 3600 x 1440

x2 1800 x 720

x3 1200 x 480

give m.f. as grey-scale

χ^2 criterion (Pearson)

$\int^x PDF\,dx$

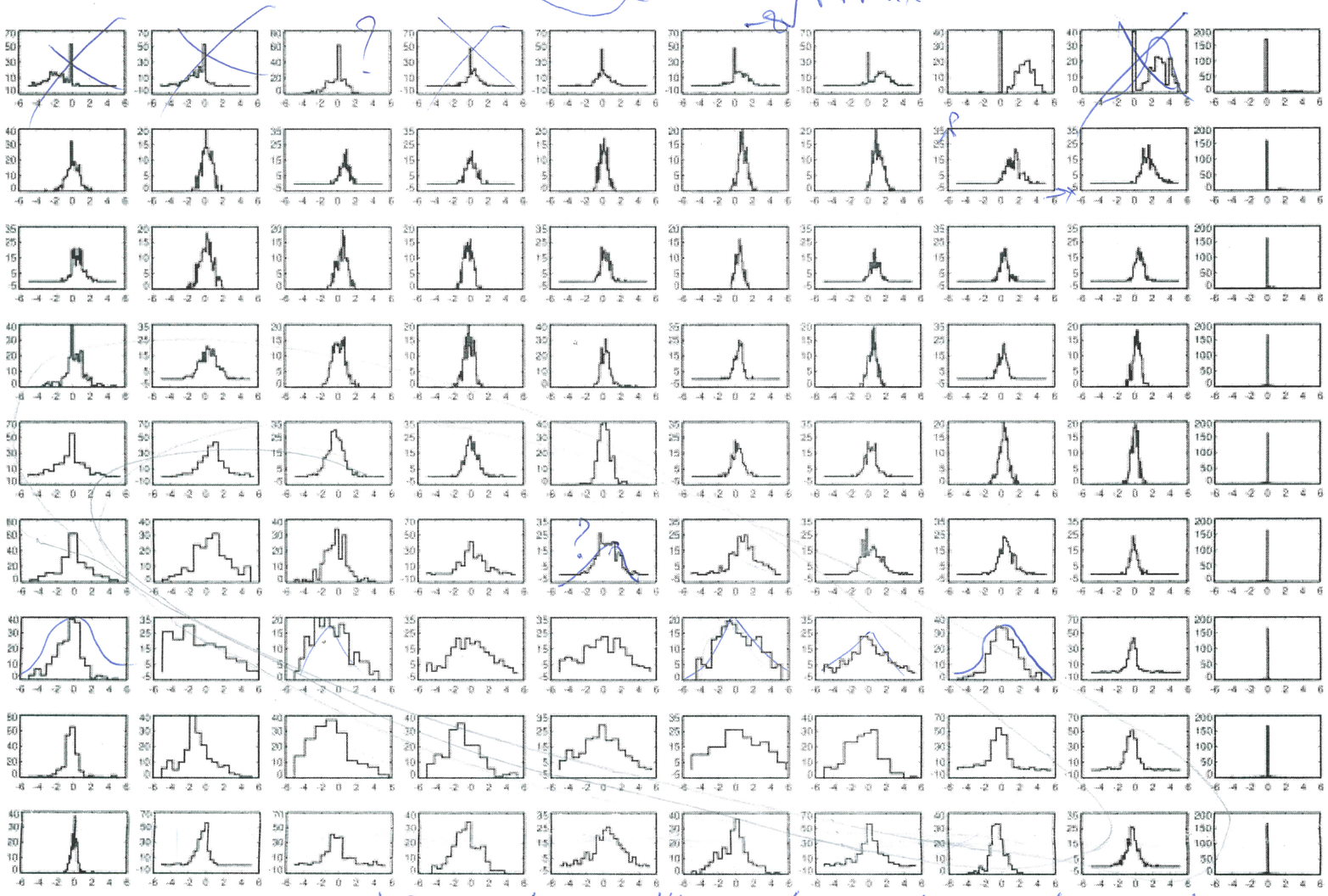
CDF

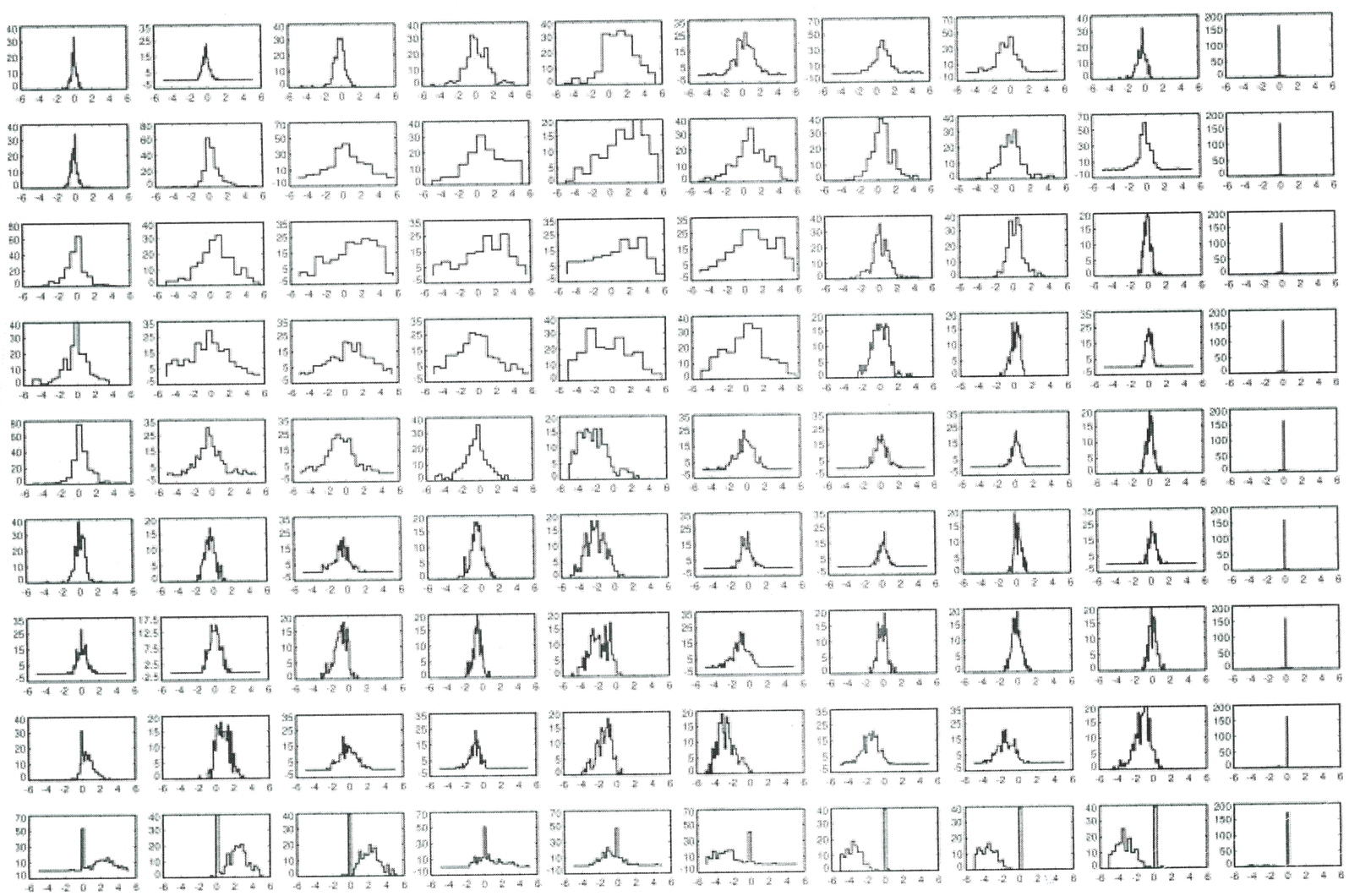
2008 Tomin...

2013 Gao...

Probability paper

magnetic flux





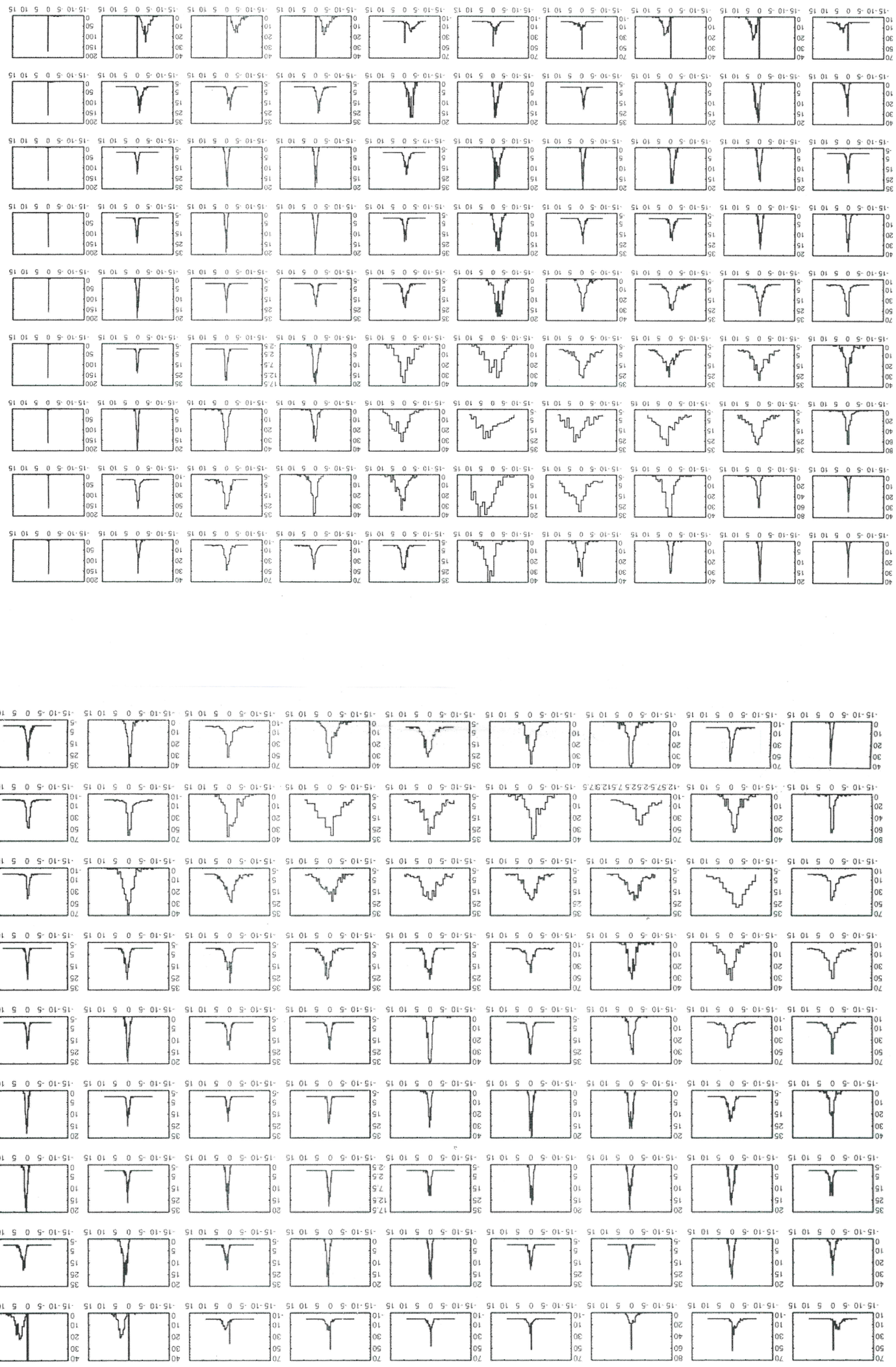
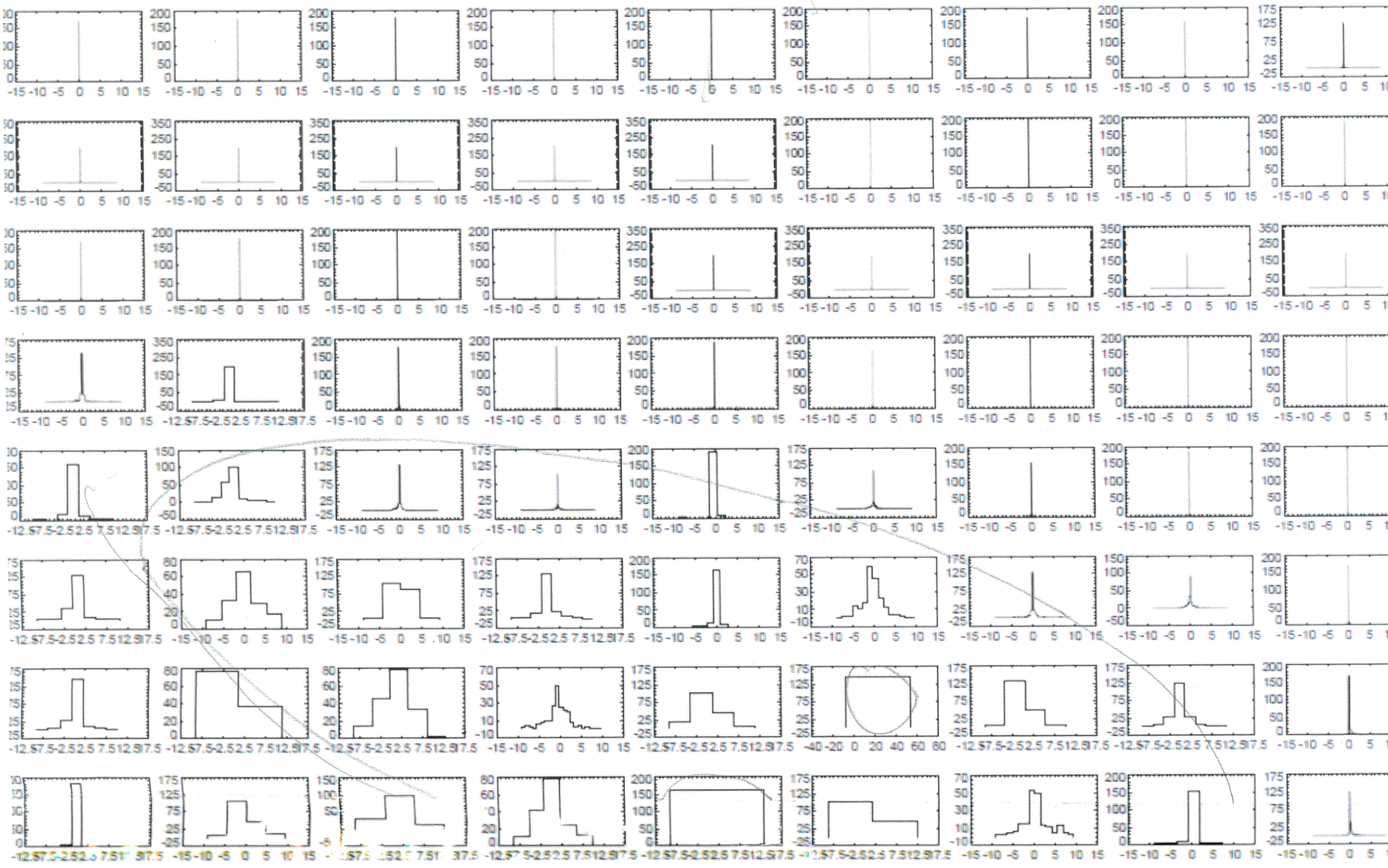
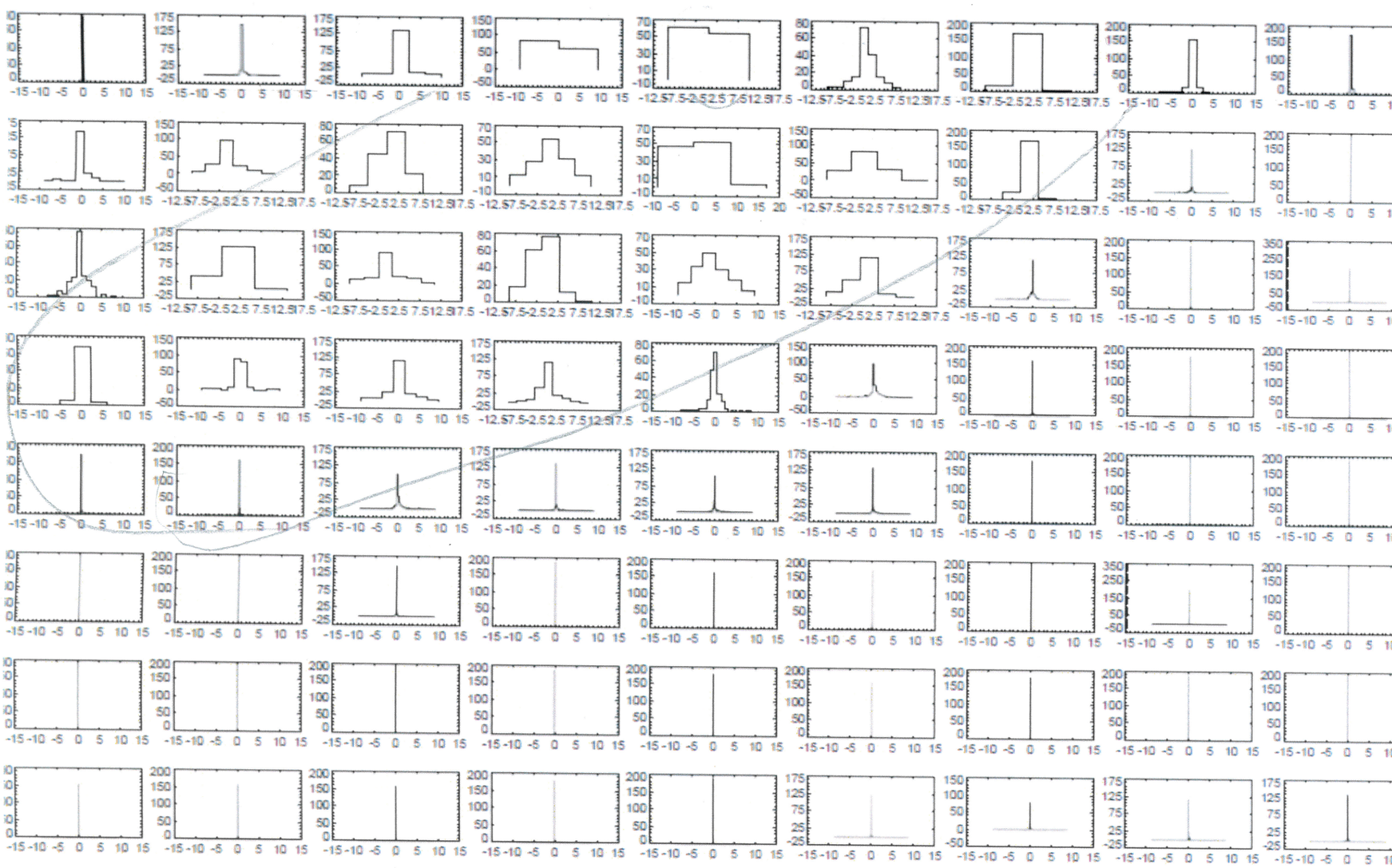


Fig. 7

N helicity flux



S



20 x 26

$\sqrt{20}$

χ^2