

Tupi midnight (UT) peak

- Main Data set: 2012 October 14, 20-31
- Counting rate – 1 sec and 5 min
- Signal significance:

$1\text{sec (Signal-Background)}/\text{SQRT (Background)}$

$5\text{min (Signal-Background)}/\text{Background}$

- Time period for Background counting:

1 sec (0-0.5 UT, h); 5min (+/- 1h UT)

Observation results (Main data set):

- 5min sets:

There is peak at ~0.25 h UT on:

October 14 (Sunday), 21 (Sunday), 24 (Wed),
28 (Sunday), 31 (Wed)

- 1sec sets:

There is repeated pattern
of the fine structure in the signal

Possible peaks at ~ 0.06 h, ~0.15 h, ~0.25 h

Analysis of other data sets (period January-September 2012)

- Trigger conditions:
- Watch by eye 5min averages counting rate profile
- Search for interesting peaks in the period ~0-1 h UT
- Select events with peaks ~0-1 h UT
- Analyze the selected events using 1 sec and 5 min counting rates
- Signal significance:

1sec (Signal-Background)/SQRT (Background)

5min (Signal-Background)/Background

- Time period for the Background counting:

1 sec (0-0.5 UT, h); 5min (+/- 1h UT)

Observation results (best examples from January-September 2012)

- Sometimes there are observed peaks in the period 0-1 h UT
- There are no peaks exactly at the same time ~0.25 h, UT for 5min averages
- The Signal significance is much lower than in Main Data set
- There is no clear fine structure similar to the one in the Main Data set

Illustration Results

- There are two parts:
Part I - Main data set (October 2012)
Part II – Examples from
(January-September 2012)
- Data are shown as figures:
1sec on the left panel, (0-0.5 h UT)
5 min on the right panel (-1; 1 h UT)
(last hour before 0 h UT,
and the first hour after 0 UT)

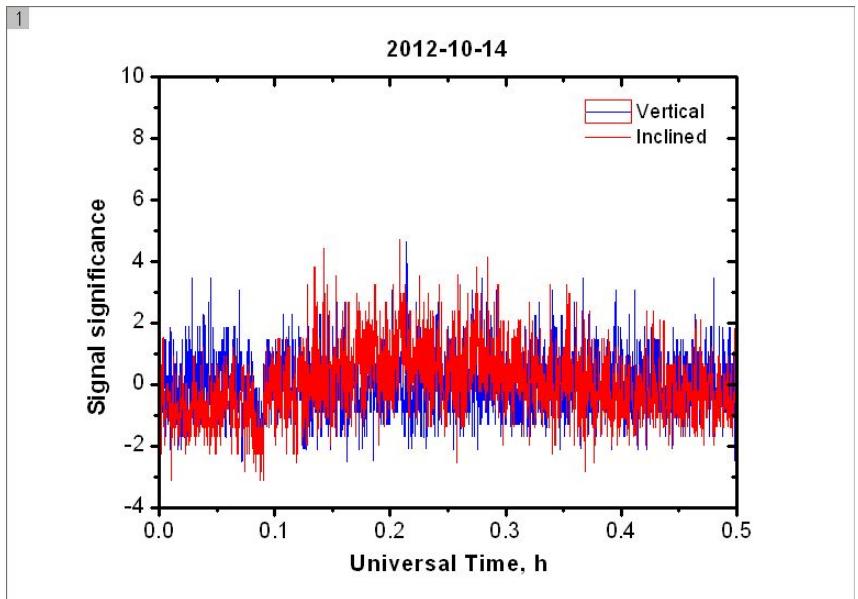
Part I

2012

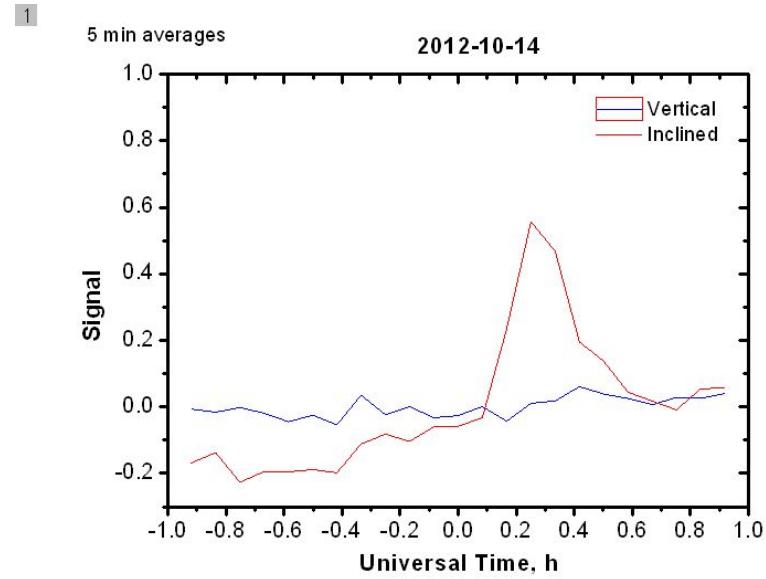
October 14-31

2012-10-14

1 sec

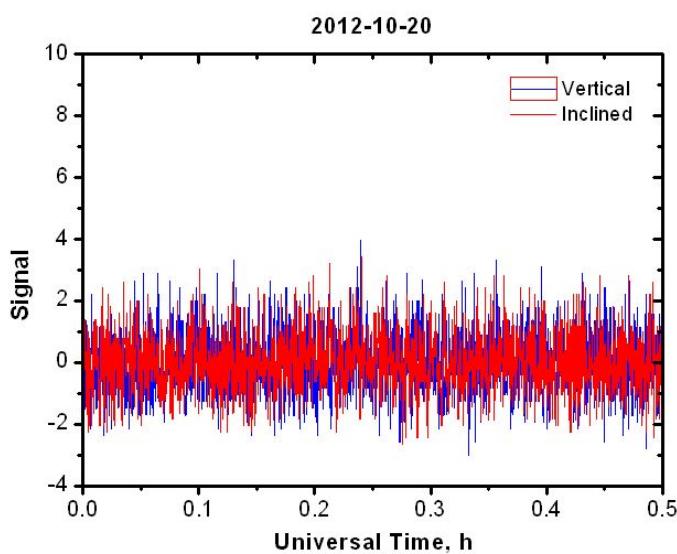


5 min

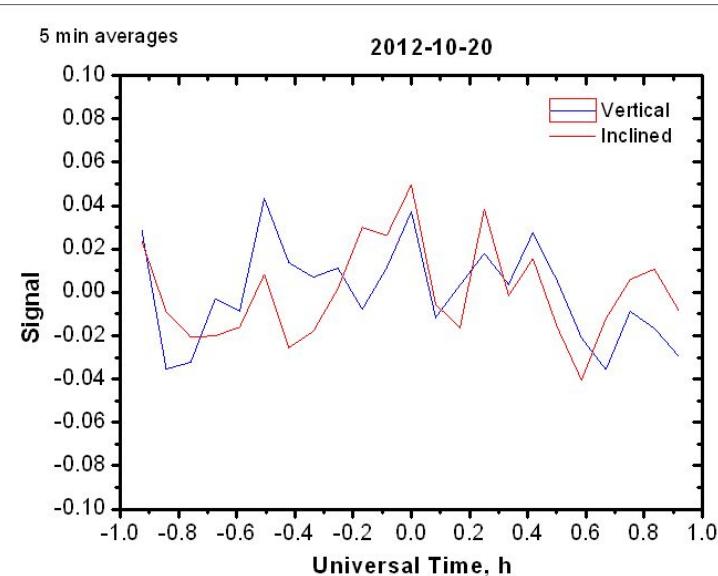


2012-10-20

1 sec

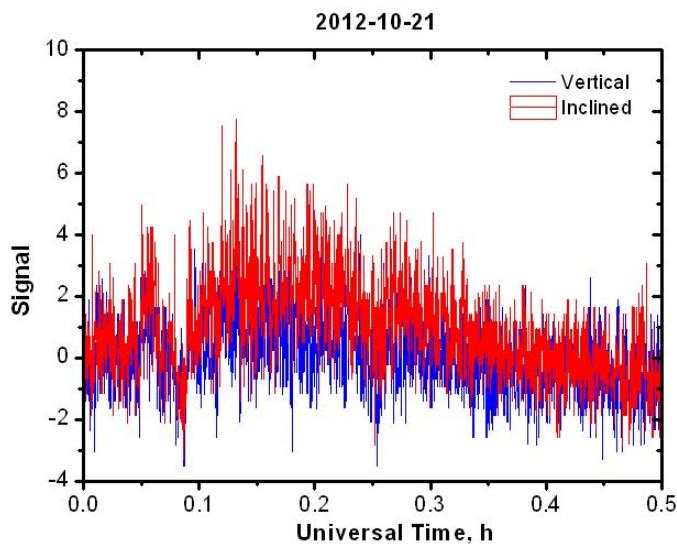


5 min

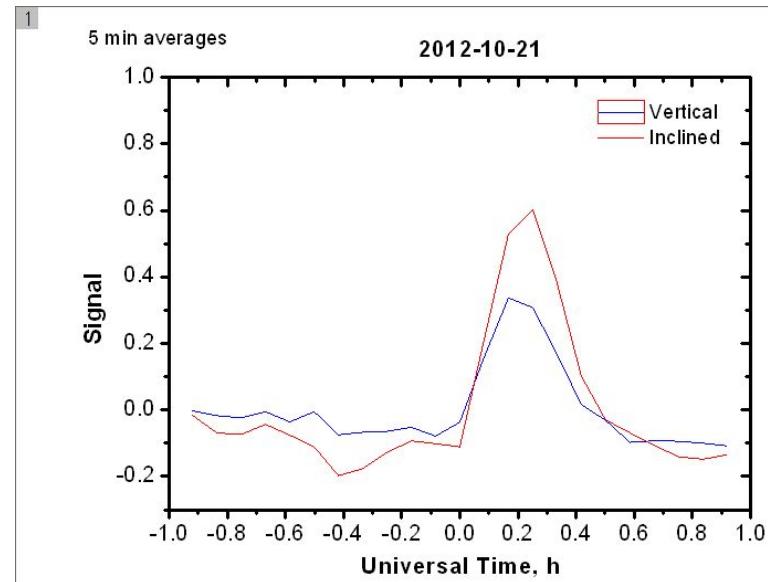


2012-10-21

1 sec

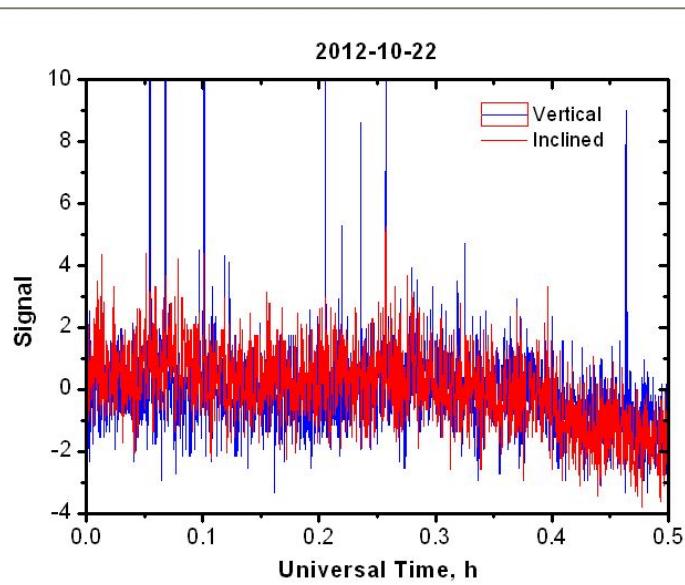


5 min

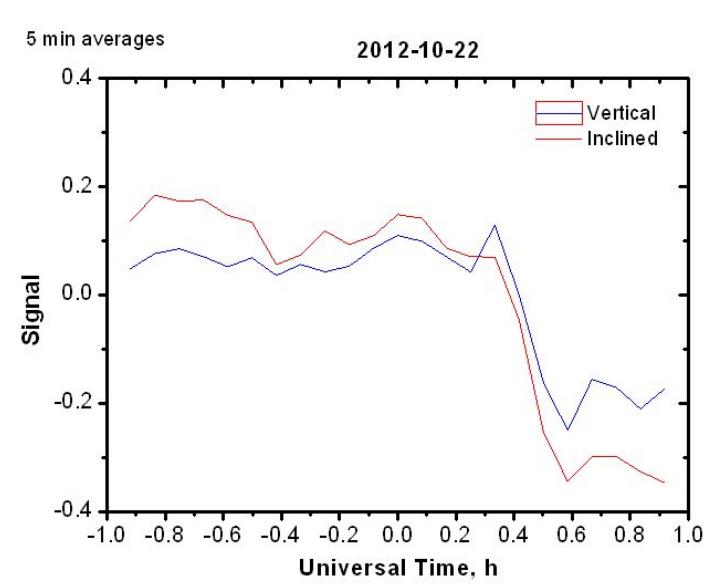


2012-10-22

1 sec

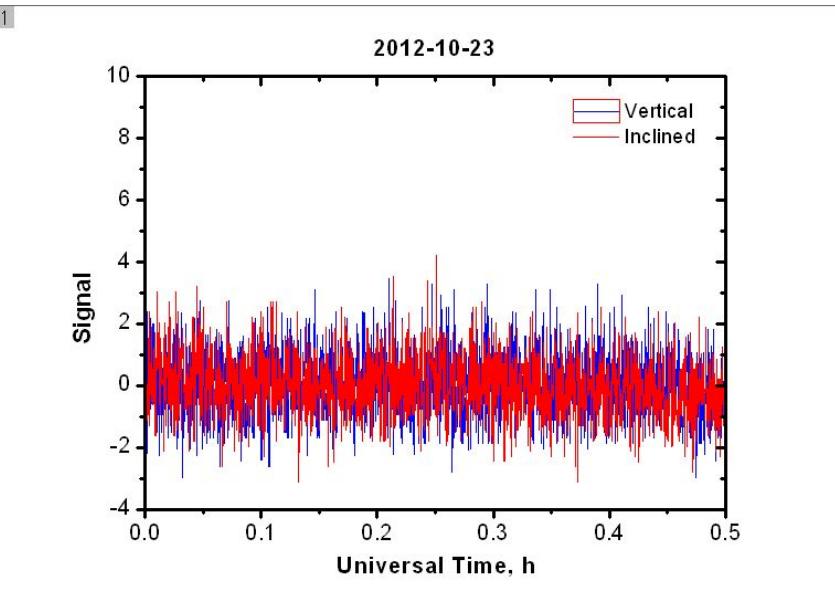


5 min

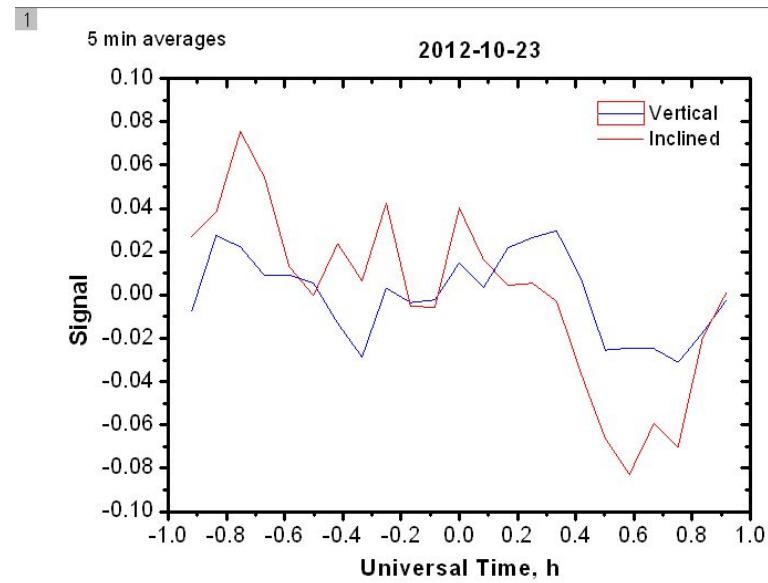


2012-10-23

1 sec

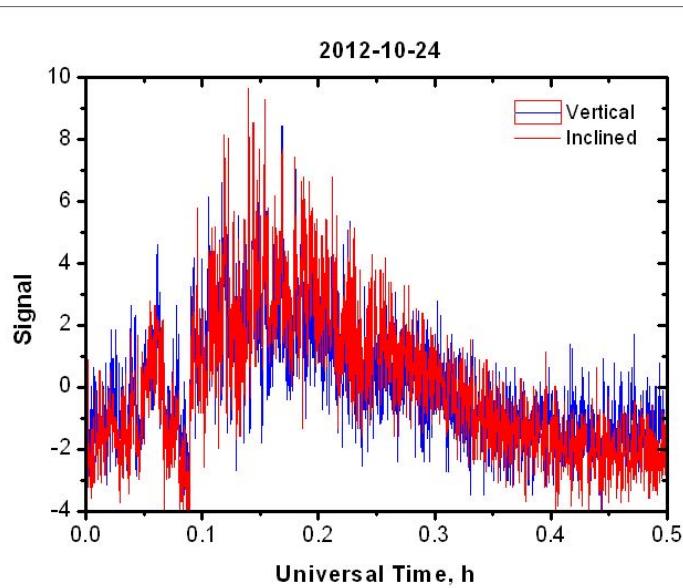


5 min

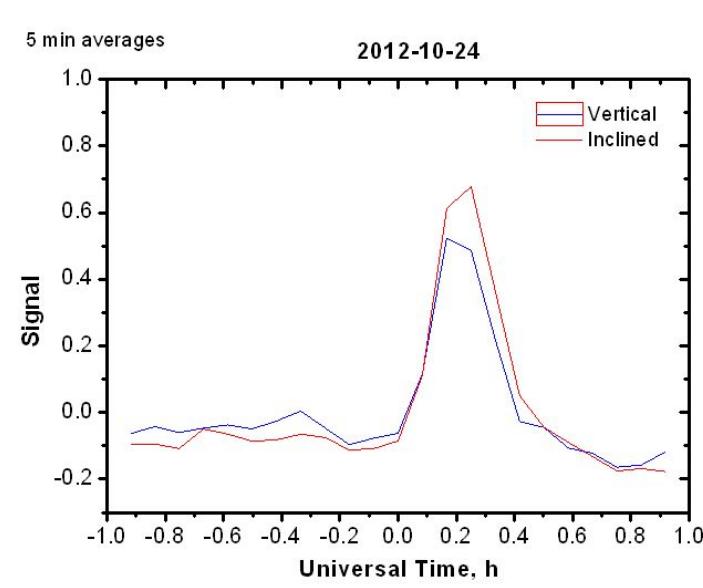


2012-10-24

1 sec

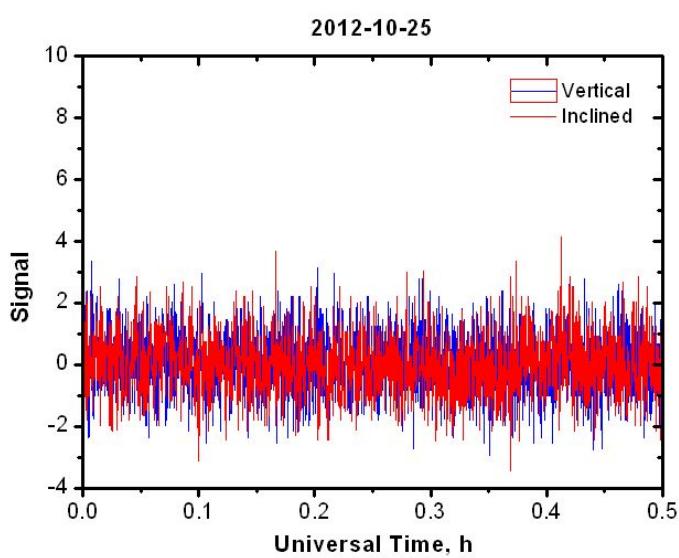


5 min

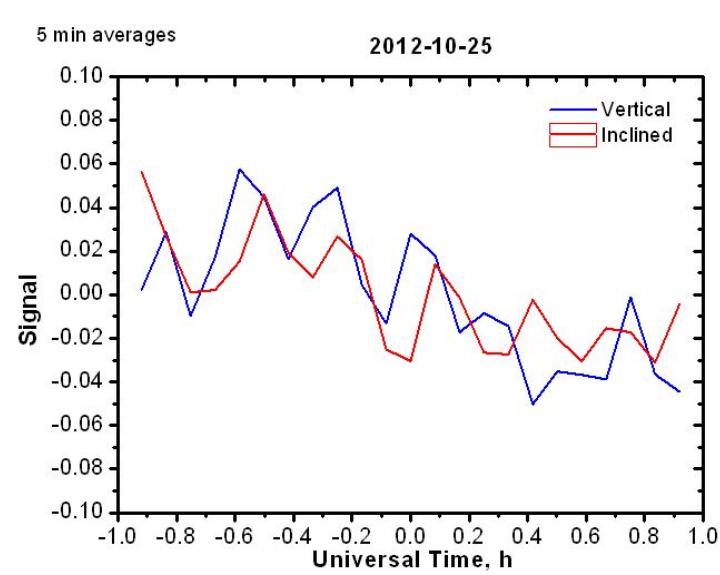


2012-10-25

1 sec

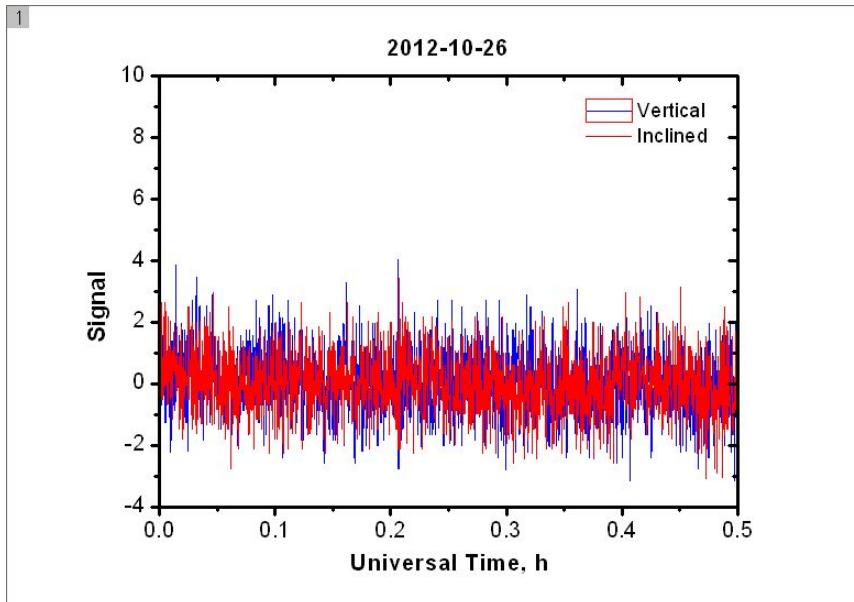


5 min

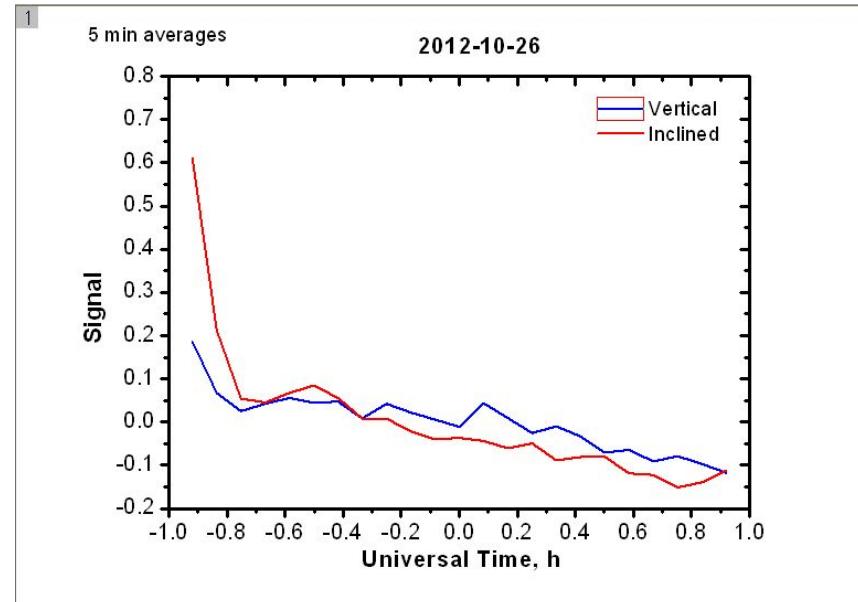


2012-10-26

1 sec

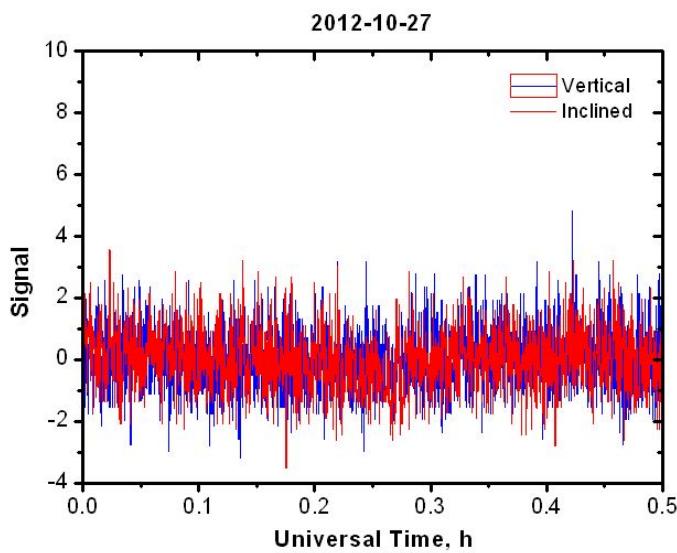


5 min

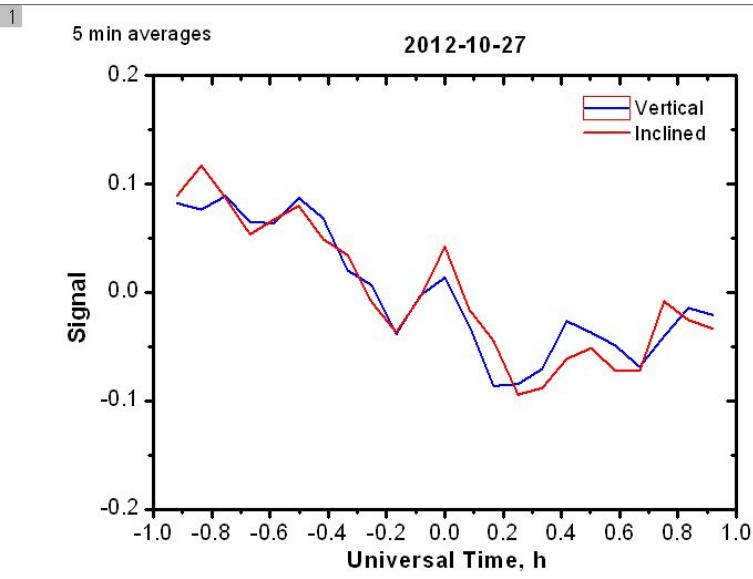


2012-10-27

1 sec

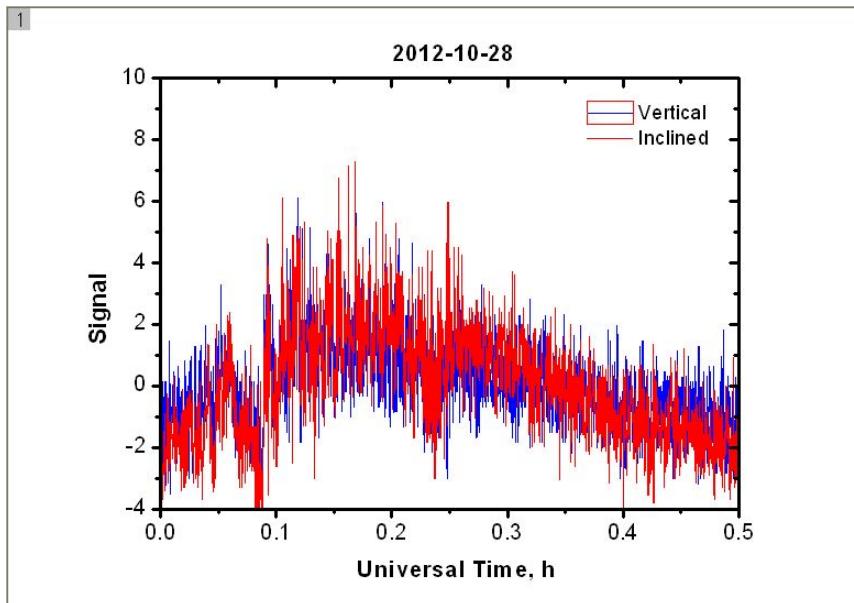


5 min

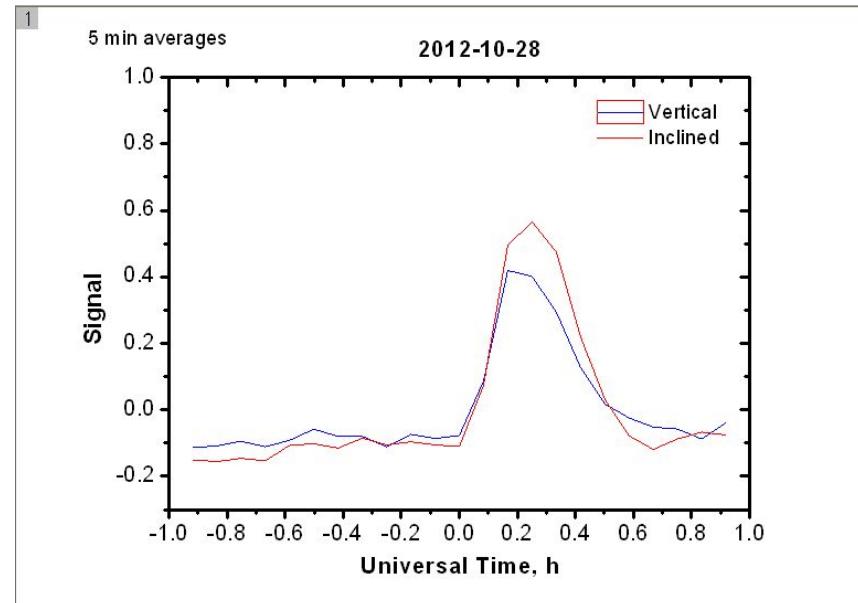


2012-10-28

1 sec

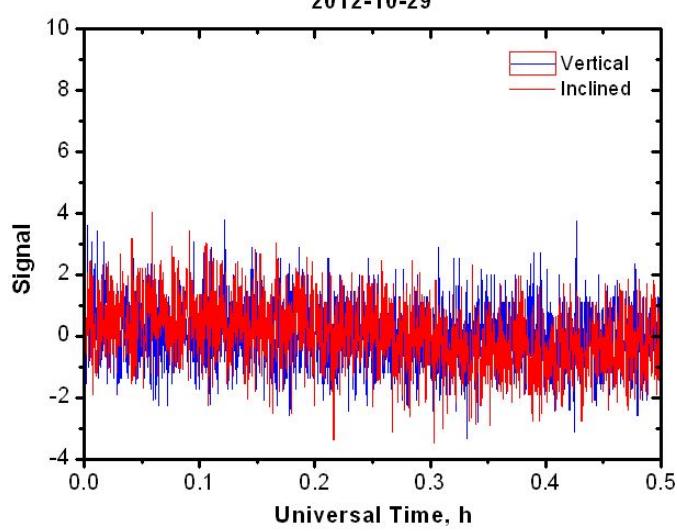


5 min

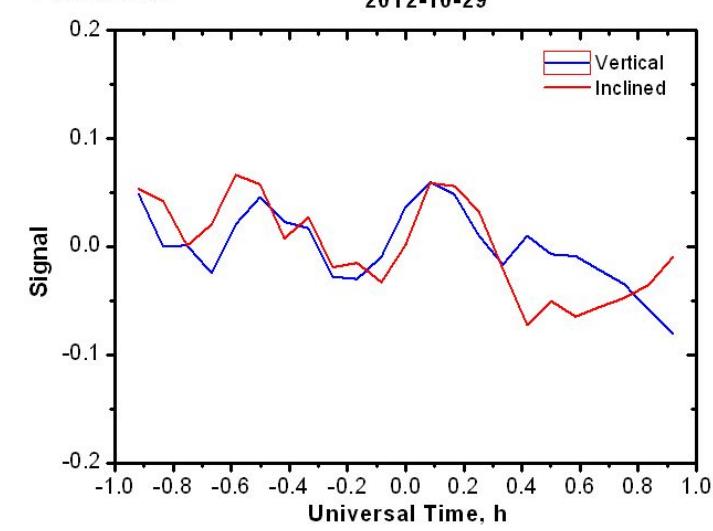


2012-10-29

1 sec

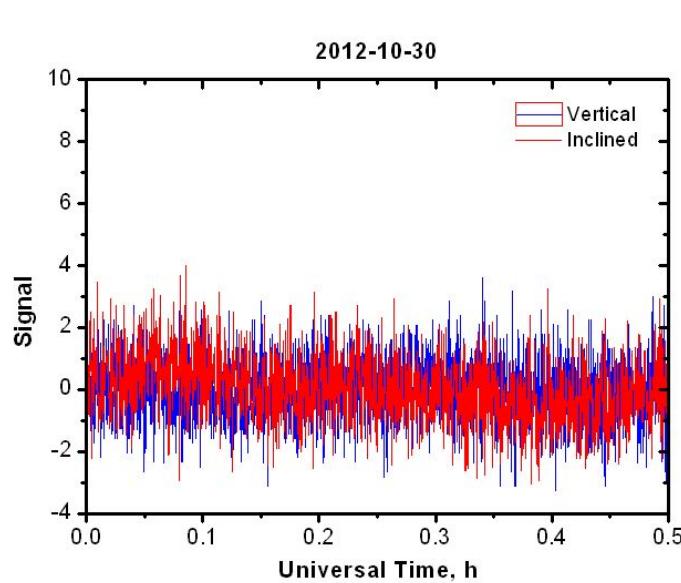


5 min

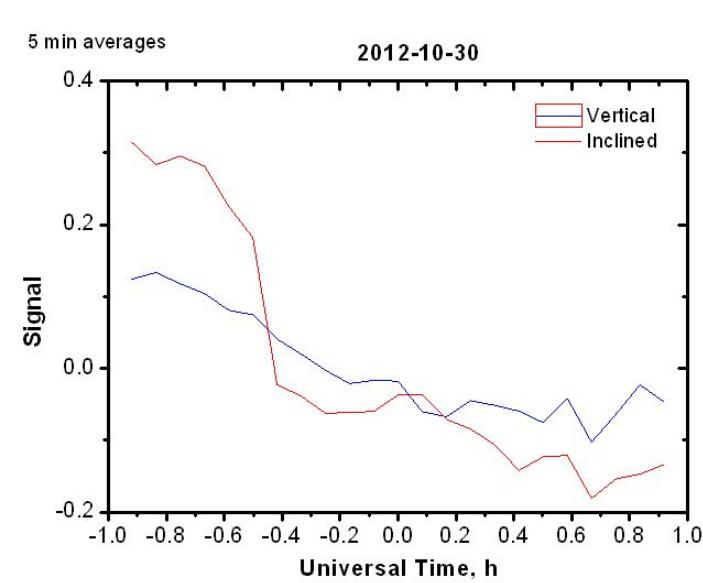


2012-10-30

1 sec

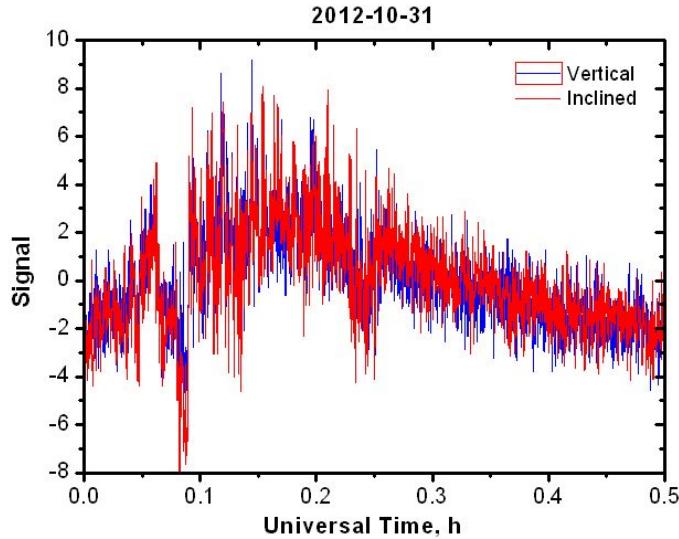


5 min

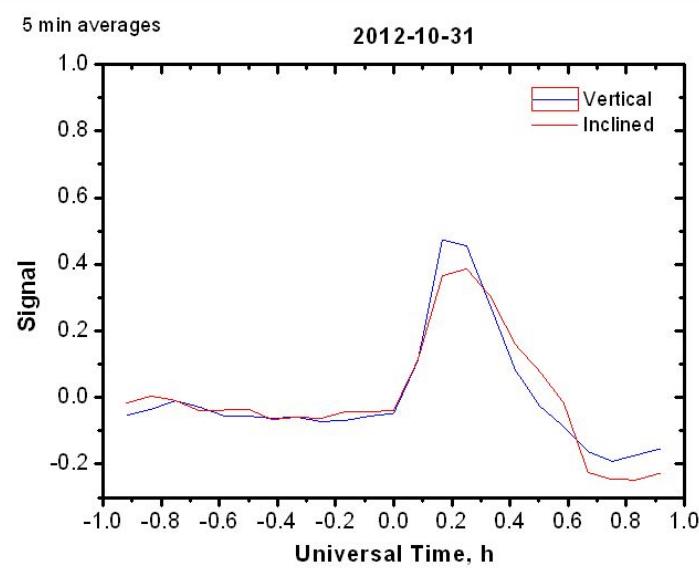


2012-10-31

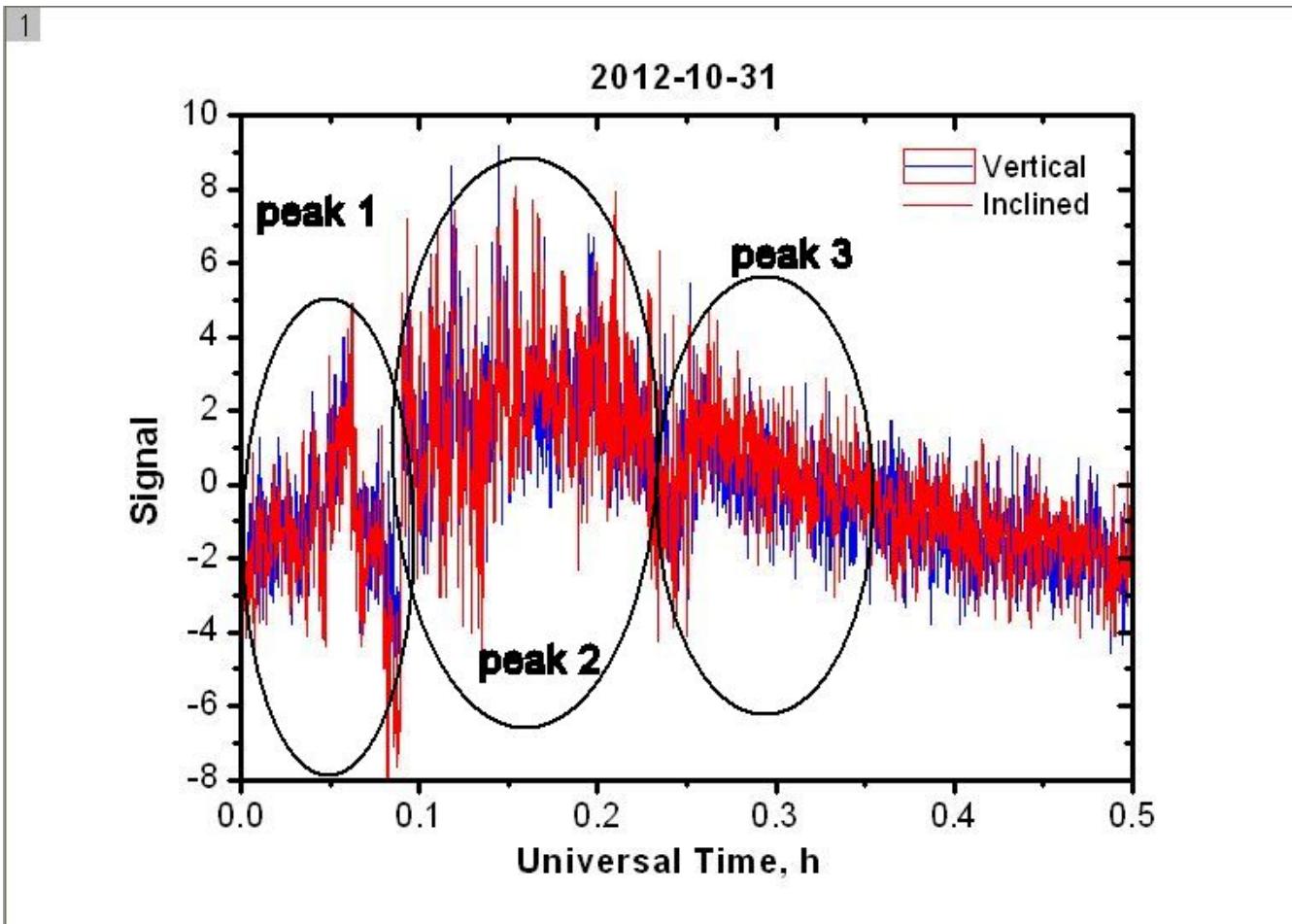
1 sec



5 min



Signal fine structure

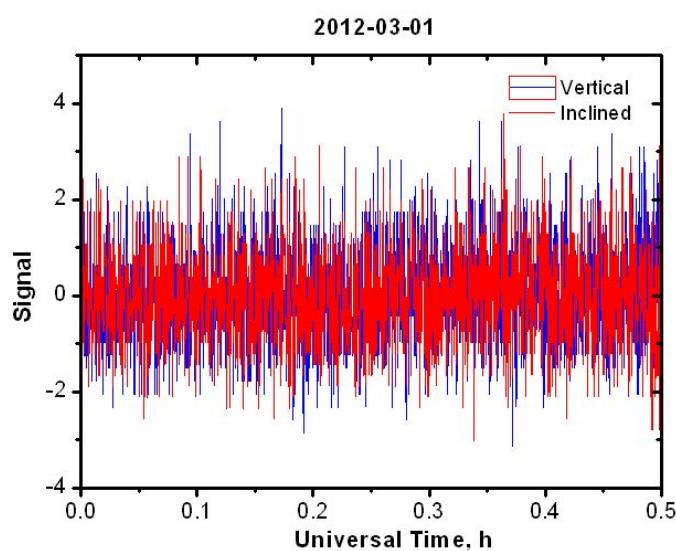


Part II

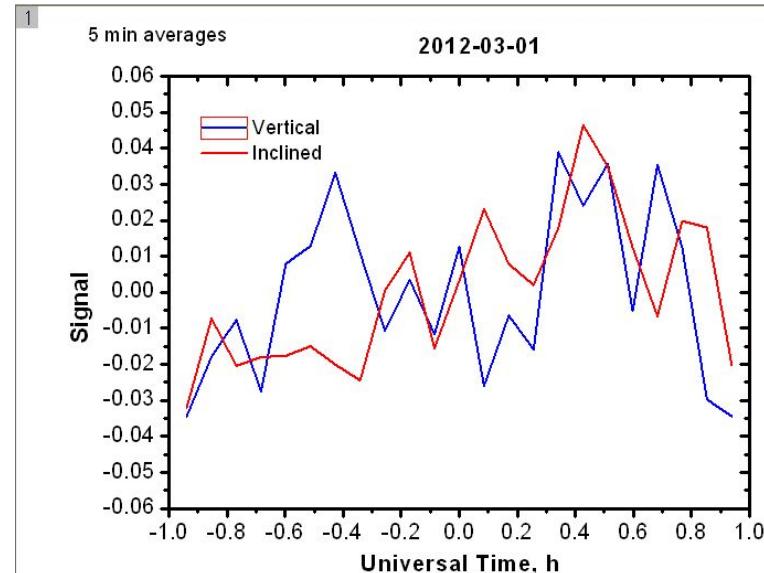
2012
January- September

2012-03-01

1 sec

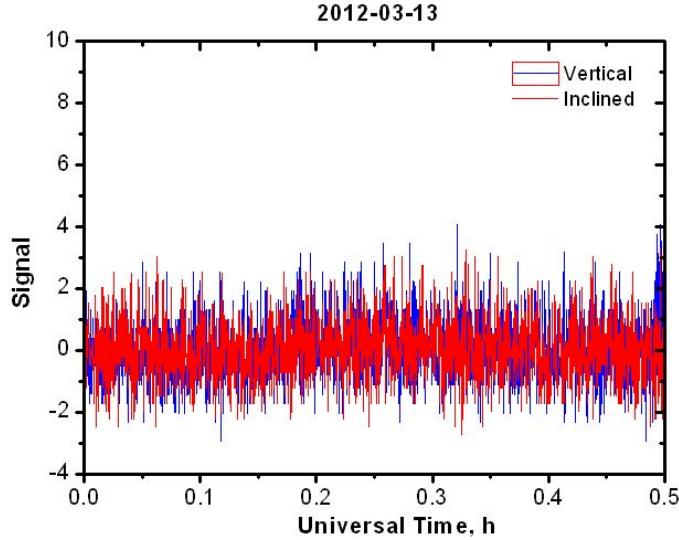


5 min

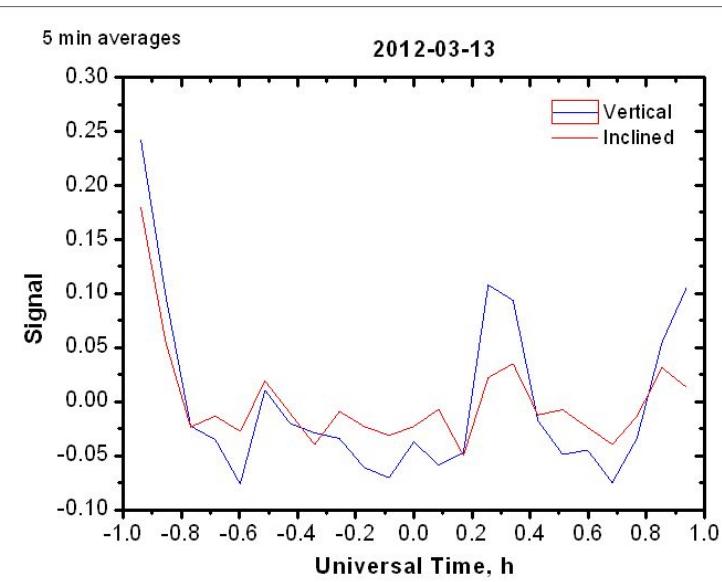


2012-03-13

1 sec

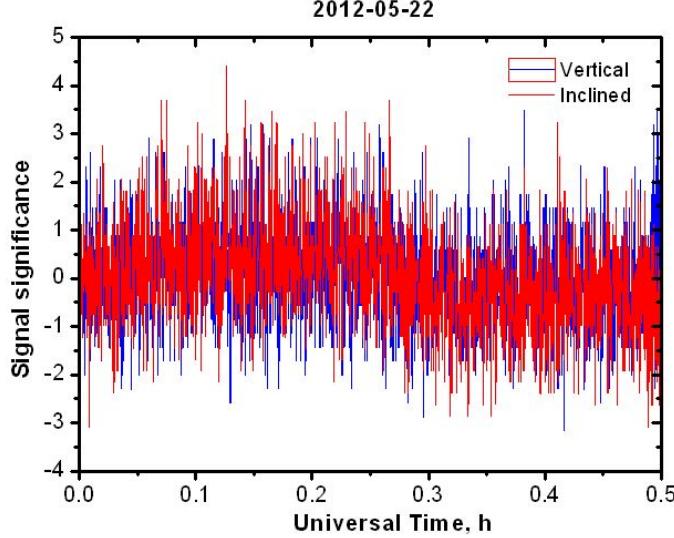


5 min

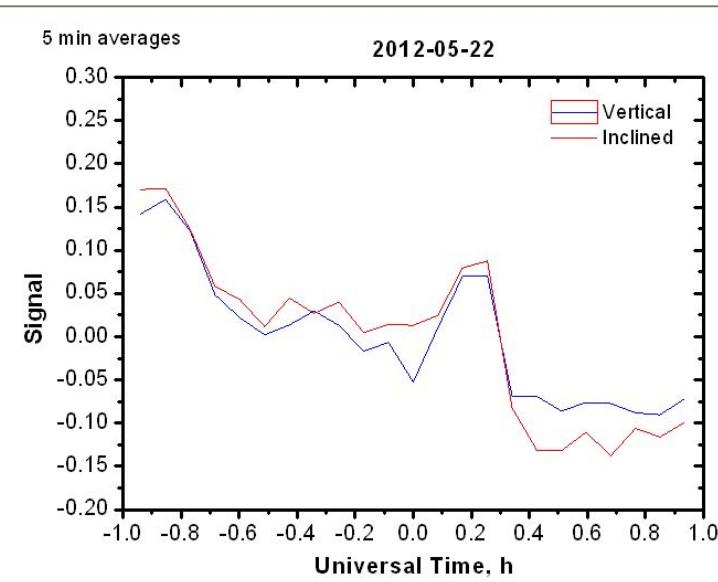


2012-05-22

1 sec

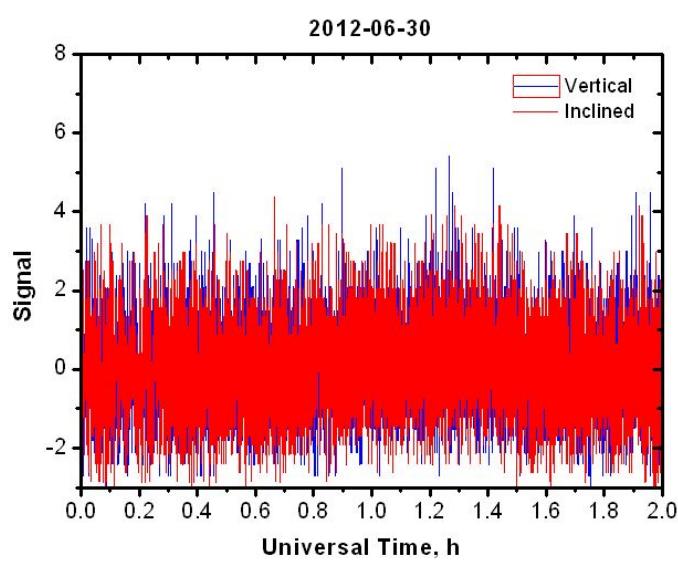


5 min

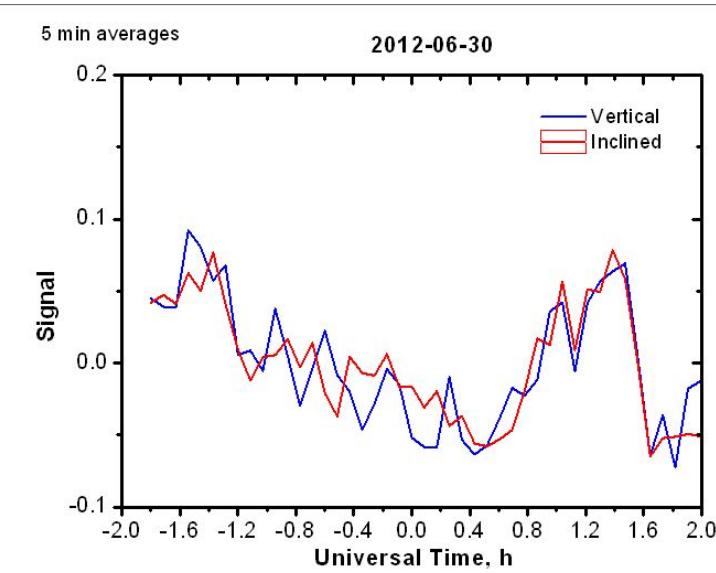


2012-06-30
Time period:
for 1sec – 2 h,: 5min:+/-2h

1 sec

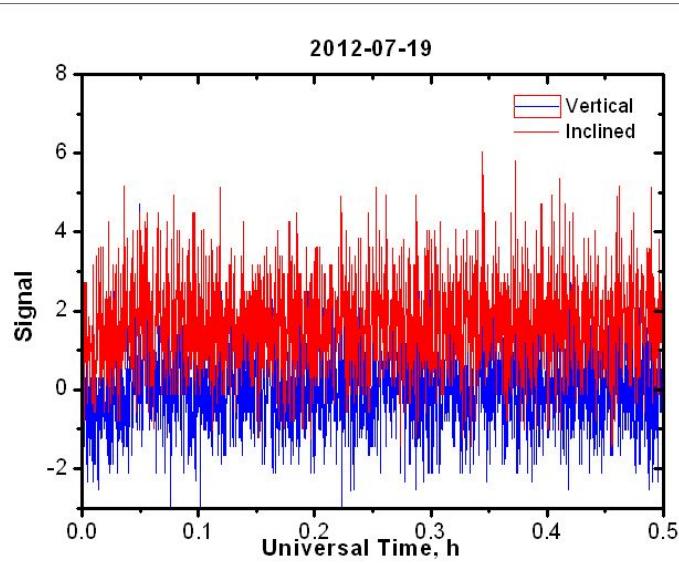


5 min

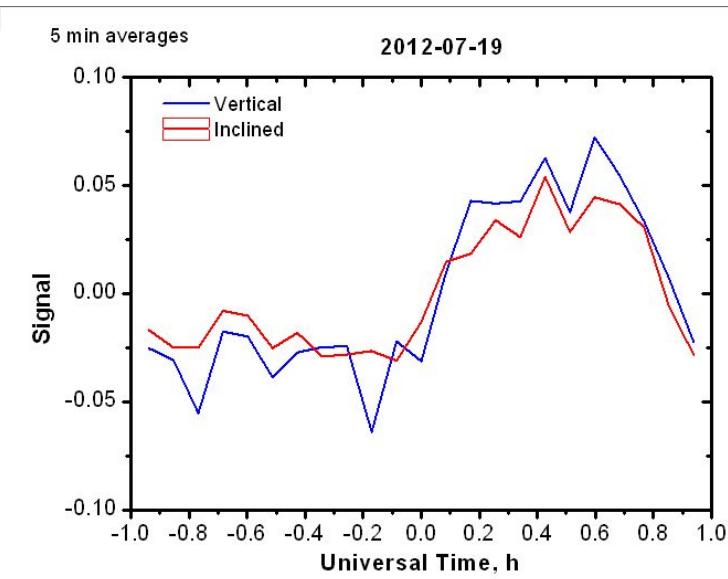


2012-07-19

1 sec

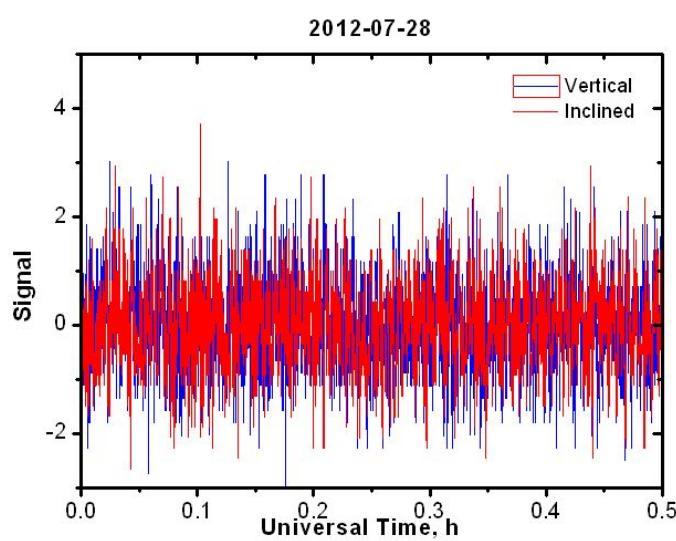


5 min

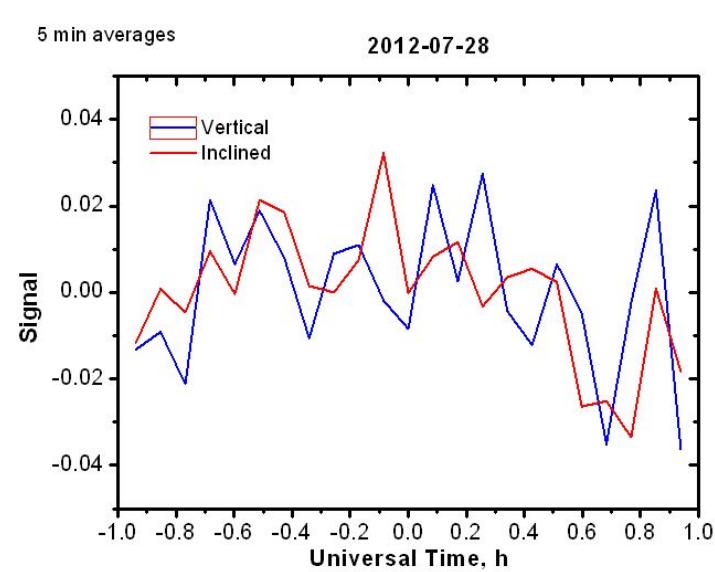


2012-07-28

1 sec

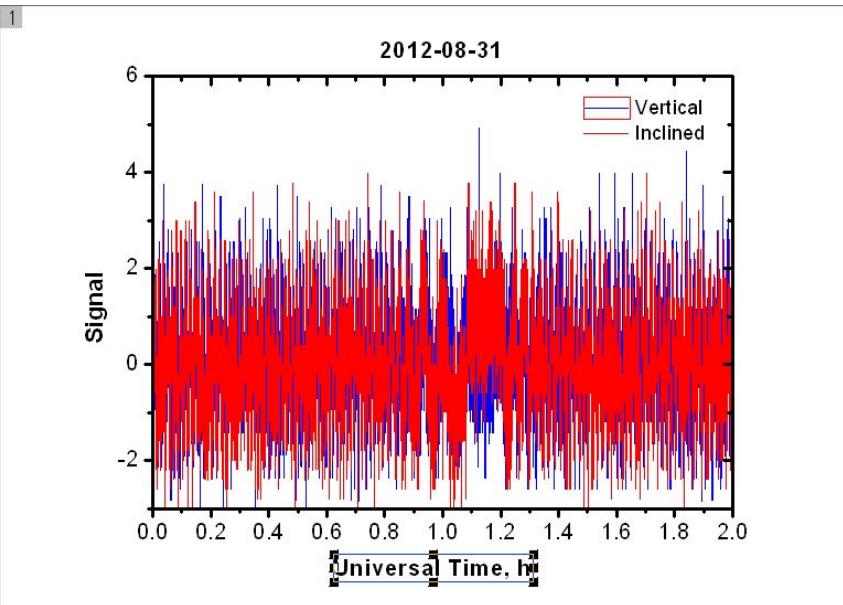


5 min



2012-08-31
Time period:
for 1sec – 2 h,: 5min:+/-2h

1 sec



5 min

