Cherenkov Fast Timing Detectors
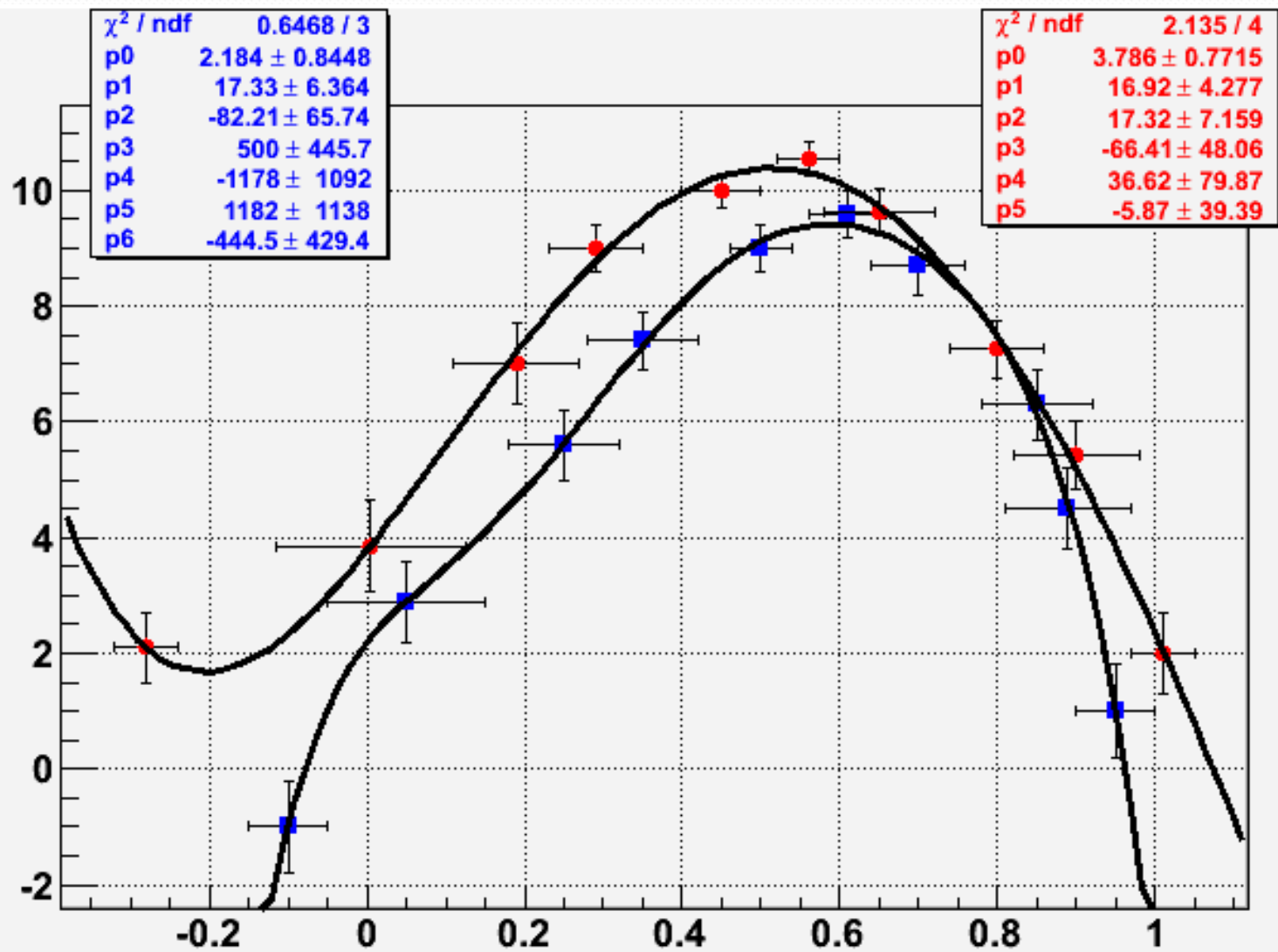
Weekly update 07/01/11

Chris Nicholson

This week

- Code analysis

- Root tutorials

- Test beam data analysis

- New geometries

Moriah's Code and Root

- Have looked through key .cc files to try and understand structure of the Geant4 code

- Questions about exact nature of certain files

- Data flow into Root

- Basic graphing in Root

- Not sure how the code is producing Root analysis

χ² / ndf   0.6468 / 3
p0   2.184 ± 0.8448
p1   17.33 ± 6.364
p2   -82.21 ± 65.74
p3   500 ± 445.7
p4   -1178 ± 1092
p5   1182 ± 1138
p6   -444.5 ± 429.4

χ² / ndf   2.135 / 4
p0   3.786 ± 0.7715
p1   16.92 ± 4.277
p2   17.32 ± 7.159
p3   -66.41 ± 48.06
p4   36.62 ± 79.87
p5   -5.87 ± 39.39

emacs@lpcdt073.fnal.gov

File Edit Options Buffers Tools C++ Help

```
//======= Build a second simple graph for a very long time interval ======
//        Time interval : a few years

    float x2[10], t2[10];
    for (i=0;i<10;i++) {
        x2[i] = gRandom->Gaus(500,100)*i;
        t2[i] = i*365*86400;
    }
    gt2 = new TGraph(10,t2,x2);
    gt2->SetTitle("Number of monkeys on the moon");
    ct->cd(3);
    ct_3->SetFillColor(41);
    ct_3->SetFrameFillColor(33);
    gt2->SetFillColor(19);
    gt2->SetMarkerColor(4);
    gt2->SetMarkerStyle(29);
    gt2->SetMarkerSize(1.3);
    gt2->Draw("AP");
    gt2->GetXaxis()->SetLabelSize(0.05);
// Sets time on the X axis
    gt2->GetXaxis()->SetTimeDisplay(1);
//
// One can choose a different time format than the one chosen by default
// The time format is the same as the one of the C strftime() function
// It's a string containing the following formats :
//    for date :
//       %a abbreviated weekday name
//       %b abbreviated month name
//       %d day of the month (01-31)
//       %m month (01-12)
//       %y year without century
//       %Y year with century
//
//    for time :
//       %H hour (24-hour clock)
```
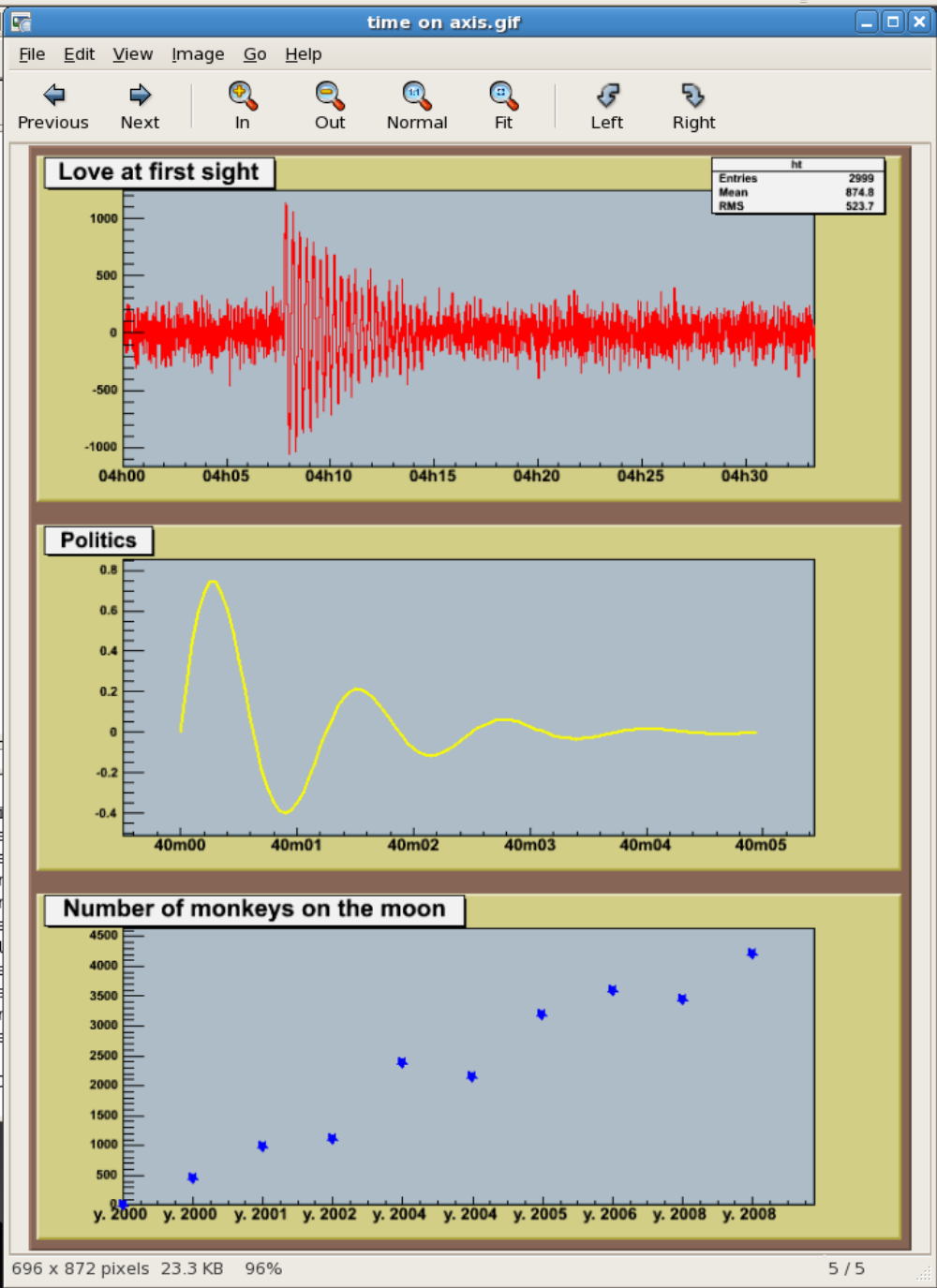
--:%% timeonaxis.C   (C++ Abbrev)--L113--68%--------------------------------

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CINT/ROOT C/C++ Interpreter versi
Type ? for help. Commands must be
Enclose multiple statements betwe
root [0] .x $ROOTSYS/tutorials/gr
root [1] Info in <TGFileContainer
Info in <TGFileContainer::AddFile
Info in <TCanvas::Print>: GIF fil
.x $ROOTSYS/tutorials/graphs/time
Warning in <TROOT::Append>: Repla
root [2] Info in <TGFileContainer
Info in <TGFileContainer::AddFile
.q
[chrisn@lpcdt073 src]$ emacs $ROO
```

time on axis.gif

File Edit View Image Go Help

Previous Next   In   Out   Normal   Fit   Left   Right

696 x 872 pixels 23.3 KB 96%   5 / 5

Terminal | [g4 start ... | chrisn | [multigra... | [Fermilab... | motorcyc... | work | time on a... | emacs@l... | Starting T...

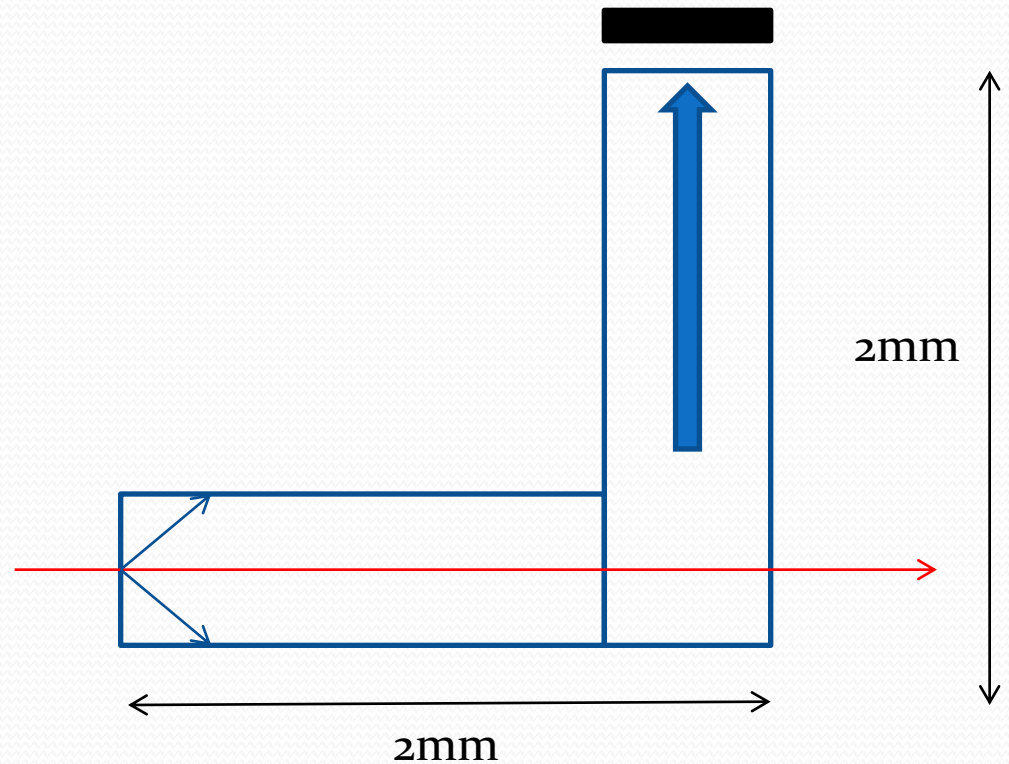# Coding

- The test beam analysis has been written

- Currently producing an infinite loop error message when run on a data file

g4 start up linux (~/work) - gedit

File   Edit   View

New   Open

g4 start up lir

source /af
setup ups
setup upd
#upd list
#upd list
setup gean
setup root
setenv G4W
setenv G4A
setenv LD

setenv CVS
cvs login
ilcdet
cvs co Mor

cd Moriah
cd Event
make

Terminal

Help

```
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```

Coding

- Have been researching ways to construct L-bar geometry
  - Boolean operations
  - Finite surfaces

2mm

2mm

Next Steps

- Work out exact syntax for L-bar

- Run program with new geometries

- Look at Root analysis of this

- Get test beam analysis to work