

## MS Windows installation and testing of science tools Alice Harding

So far, my testing of the science tools in Windows has been a less than fulfilling experience.

The installation using the GLAST Installer GUI went smoothly for the most part. All the tools and externals were copied into the right directories.

However, once everything was installed I was at a loss as to how to actually invoke or run the tools. It was only after asking a few people that I learned that the tools are run from scripts in the `\packages\ScienceTools-v6r0p2\bin` subdirectory. I couldn't find this information in the documentation or instructions in SAS Workbook. I think it would be very helpful to have a few lines at the end of the GLAST Installer for Windows instructions page (which is very good otherwise) like:

“To run the tools after installation, click (or double-click) on the scripts for each tool in the `\packages\ScienceTools-vXrXpX\bin` directory. This will open a command window. You can also invoke the tools by name from a command window. It will be helpful to create a path to the `\bin` directory using the System Control Panel.”

This works, but each time a tool is invoked from an open command window, it opens another command window. This is not what happens in Unix, where the tools run in the same X-window. It is a bit annoying if you are running a number of different tools in succession, in which case the desktop quickly gets flooded with new windows.

When I tried to test the pulsar analysis tools using the example and the files supplied in the SAS workbook, I got a variety of error messages (these same tests worked well in Unix):

```
This is gtbary version N/A
Event data file name [my_pulsar_events.fits] :
Spacecraft data file name [my_pulsar_spacecraft_data.fits] :
Output file name [my_pulsar_events_bary.fits] :
True RA of point source (degrees) [270] : 85.0482
True DEC of point source (degrees) [-45] : -69.3319
'cp' is not recognized as an internal or external command,
operable program or batch file.
axBary: Could not open input file my_pulsar_events.fits or create output file my
_pulsar_events_bary.fits
```

```
This is gtephcomp version v1r0p4
Pulsar name [PSR B0540-69] :
Epoch (time origin) [23078385.922] :
Time format <MJD|GLAST> [GLAST] :
Caught class tip::TipException at the top level: Unable to open file named "mast
er_pulsardb.fits" with read only access (CFITSIO ERROR 104: could not open the n
```

amed file)

Those errors went away when I installed Cygwin ( which enables Unix commands in Windows). This meant that gtbary and gtephcomp were somehow invoking Unix commands. I found that the Unix “cp” command appears deep in the reptilian brain of gtbary – in axbary, written originally by Arnold Rots. James Peachey is correcting this error. We also found the installer was not setting up the environment variables TIMING\_DIR and LHEA\_DATA for gtbary, so at the moment the user must set them both to point to the ...\\extFiles\\v0r2\\jplephem directory. After those operations, gtbary and gtephcomp worked fine. However, there are unresolved problems (below) in gtpsearch, which I believe James and Masa are working to fix.

```
C:\Documents and Settings\Alice Harding>gtpsearch demodbin=no psrdbfile=master_pulsar.db.fits cancelpdot=yes epoch=23078385.922
```

This is gtpsearch version v1r0p3

Type of statistical test to perform (Chi2 - Chi squared, Z2n - Z2n/Rayleigh test, H - H test) <Chi2|Z2n|H> [Chi2] :

Event data file name [] : my\_pulsar\_events\_bary.fits

Pulsar name [ANY] : PSR B0540-69

How will spin ephemeris be specified? <DB|FREQ|PER> [DB] :

Size of steps for trials, in units of the Fourier resolution [0.5] :

Number of trials [100] :

Number of bins (Chi2 test), harmonics (Z2n test), or maximum harmonics (H test) [10] :

Caught class std::runtime\_error at the top level: Binary demodulation did not converge.

```
C:\Documents and Settings\Alice Harding>gtpsearch demodbin=no psrdbfile=master_pulsar.db.fits cancelpdot=yes epoch=23078385.922
```

This is gtpsearch version v1r0p3

Type of statistical test to perform (Chi2 - Chi squared, Z2n - Z2n/Rayleigh test, H - H test) <Chi2|Z2n|H> [CHI2] :

Event data file name [my\_pulsar\_events\_bary.fits] :

Pulsar name [PSR B0540-69] :

How will spin ephemeris be specified? <DB|FREQ|PER> [FREQ] :

Central frequency for the scan [19.8340168836684] :

Size of steps for trials, in units of the Fourier resolution [0.5] :

Number of trials [100] :

Number of bins (Chi2 test), harmonics (Z2n test), or maximum harmonics (H test) [10] :

Caught class std::runtime\_error at the top level: Binary demodulation did not converge.

```
C:\Documents and Settings\Alice Harding>gtpphase psrdbfile=master_pulsar.db.fits  
phi0=0.0
```

```
This is gtpphase version v1r0p2  
Event data file name [my_pulsar_events_bary.fits] :  
Pulsar name [PSR B0540-69] :  
How will spin ephemeris be specified? <DB|FREQ|PER> [DB] : FREQ  
Enter value of epoch for spin ephemeris [0] : 23078385.922  
Enter pulse frequency at this epoch [0] : 19.83401688366839422996  
Enter first time derivative of pulse frequency (fdot) at this epoch [0] : -1.886  
9945816704768775044e-10  
Enter second time derivative of pulse frequency (f2dot) at this epoch [0] : 0.0  
Caught class std::runtime_error at the top level: Binary demodulation did not co  
nverge.
```

Support for FTOOLS under Windows:

If Cygwin is installed first, then one can install some of the FTOOLS for Windows

From

<http://heasarc.gsfc.nasa.gov/lheasoft/download.html>

I'm still testing this ...

At any rate, I gave up on trying to run science tools in Windows and did further testing of the tools in Unix.