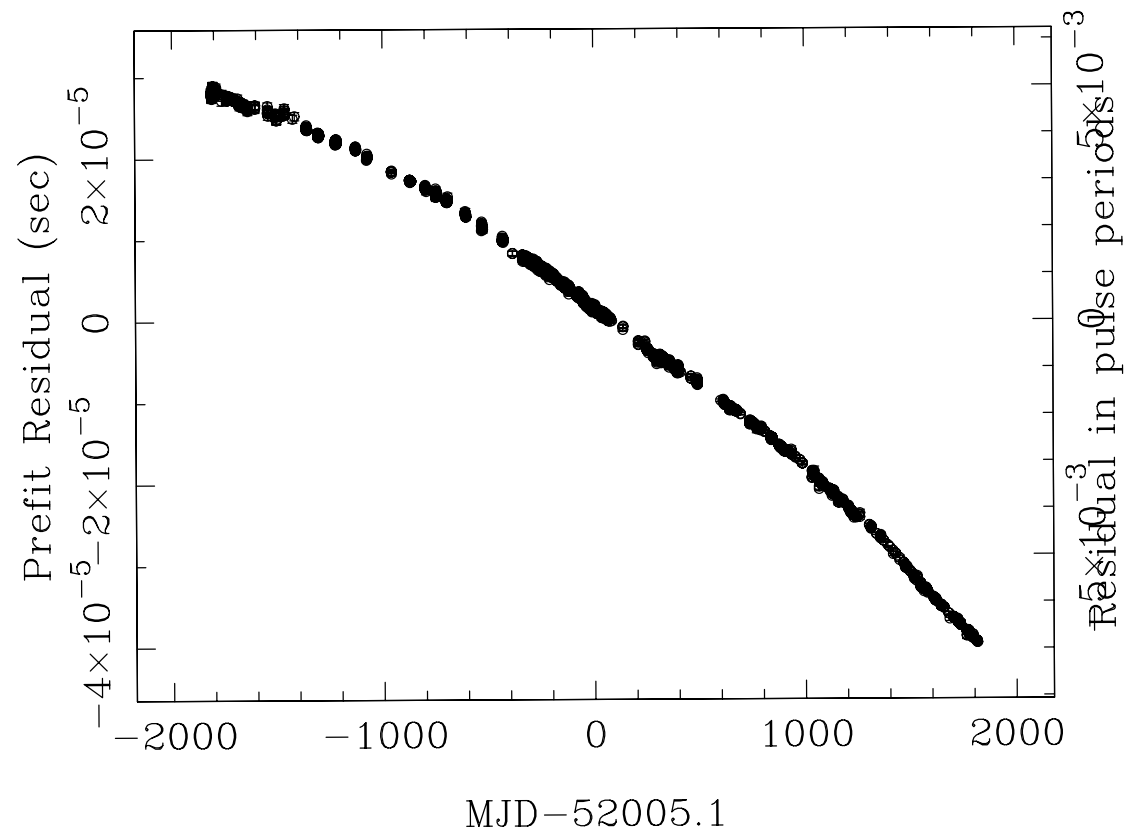
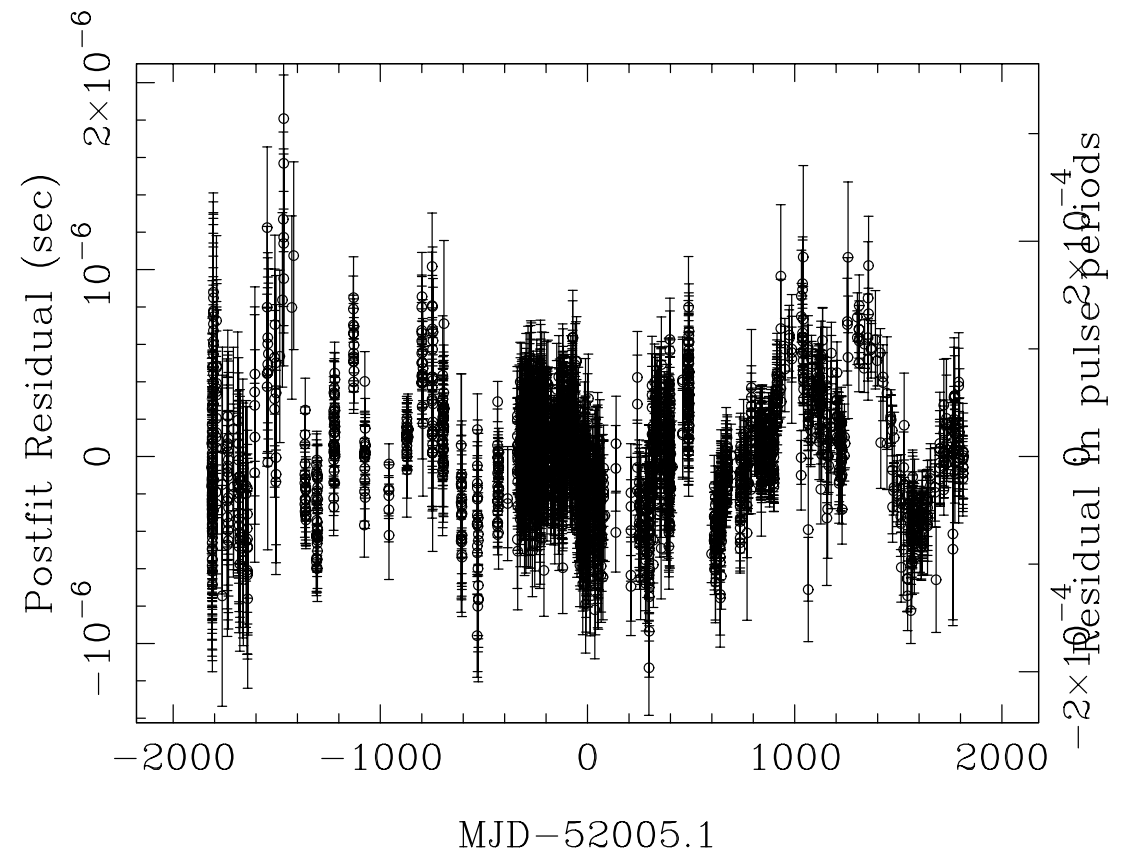


Stochastic GW Background

0437-4715 (rms = 15.954 μ s) pre-fit



0437-4715 (rms = 0.270 μ s) post-fit



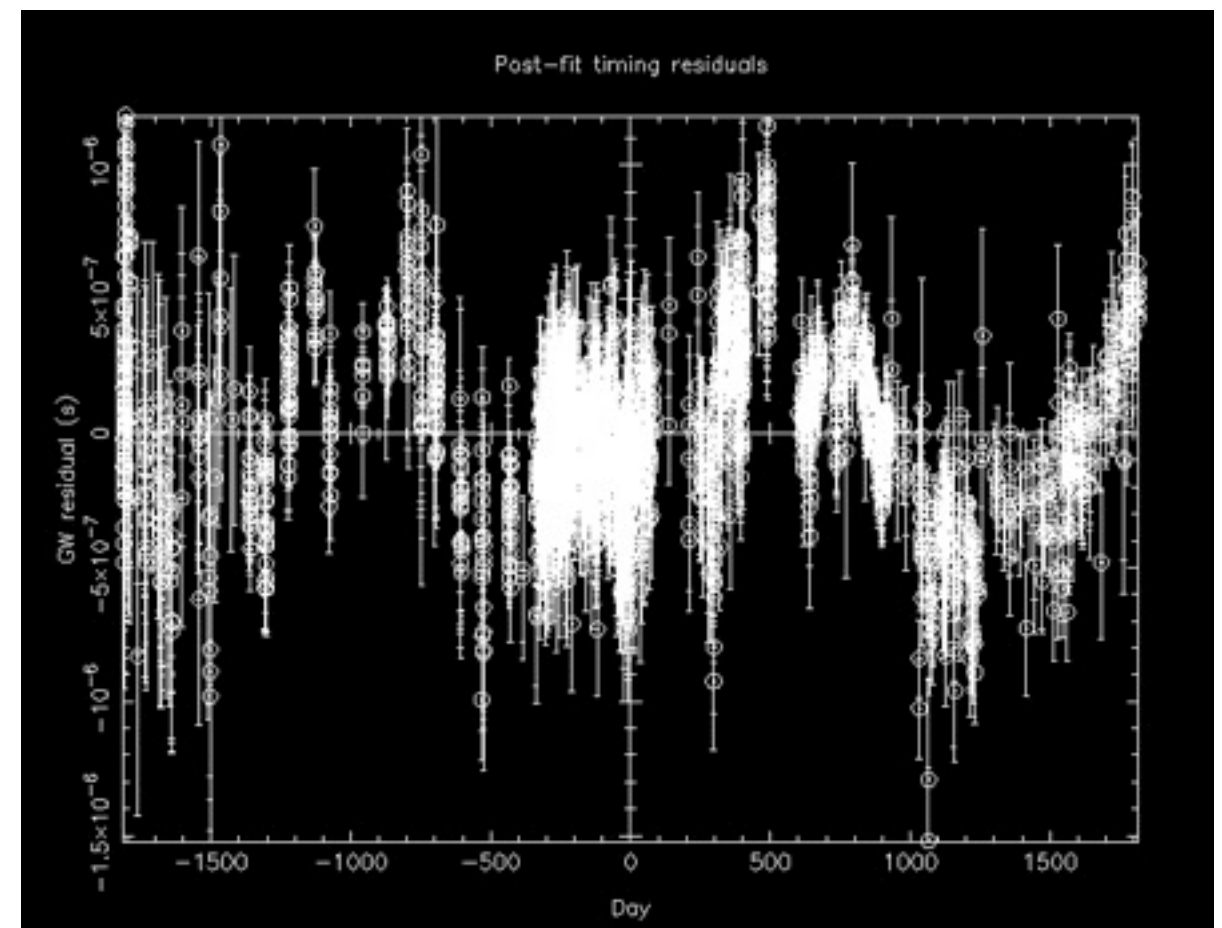
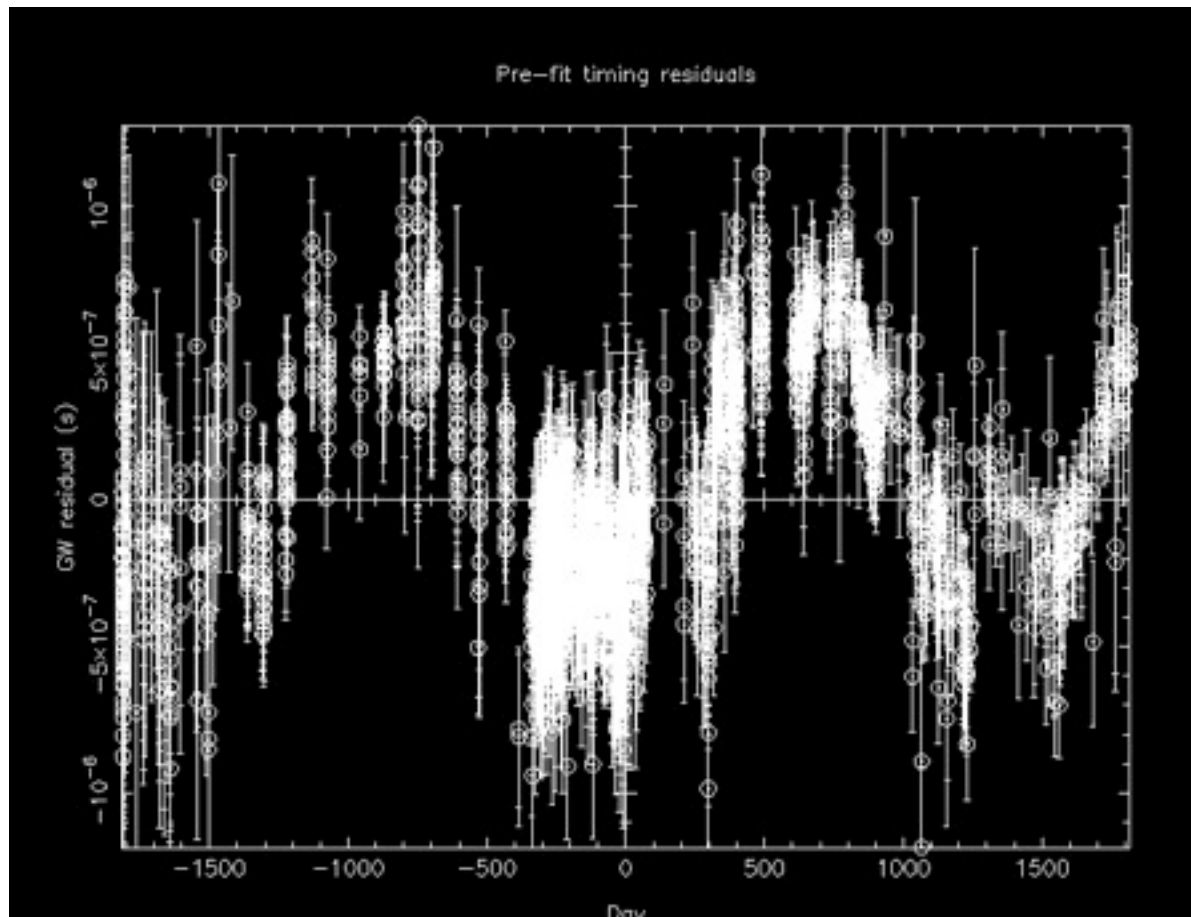
$$R(t) = \text{Re} \left[\frac{\hat{p}^l A_{lm} \hat{p}^m}{1 - \cos \mu} e^{-i\omega t} \frac{(1 - e^{i\omega D(1 - \cos \mu)})}{\omega} \right]$$

$$A_{lm} = \begin{pmatrix} A_+ & A_\times & 0 \\ A_\times & -A_+ & 0 \\ 0 & 0 & 0 \end{pmatrix}$$

$$h_c(f) = A \left(\frac{f}{1\text{yr}^{-1}} \right)'$$

```
tempo2 -gr GWbkgrd -f 0437.pub.par 0437.pub.tim
-dist 0.157 -gwamp 1e-14 -alpha -0.6667 -ngw 10000 -plot
```

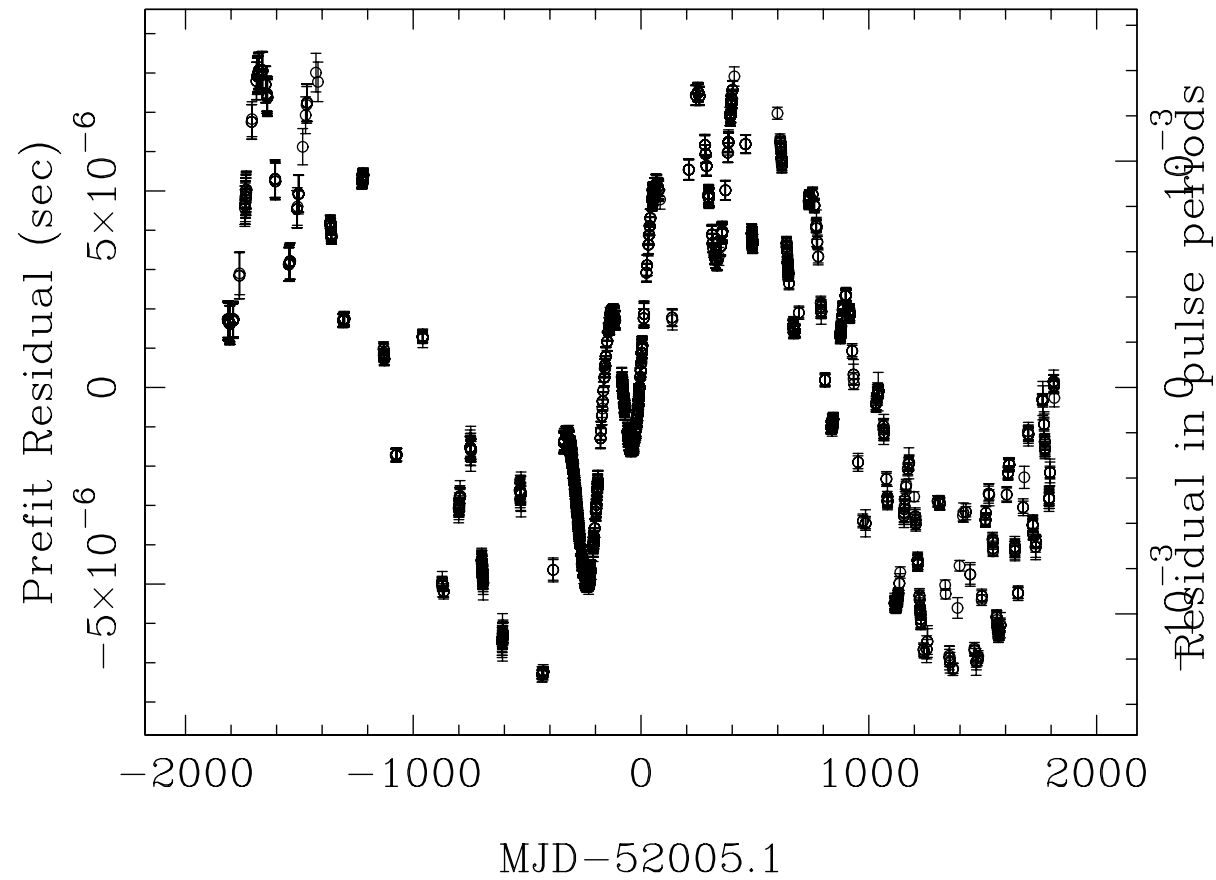
Continuous GW



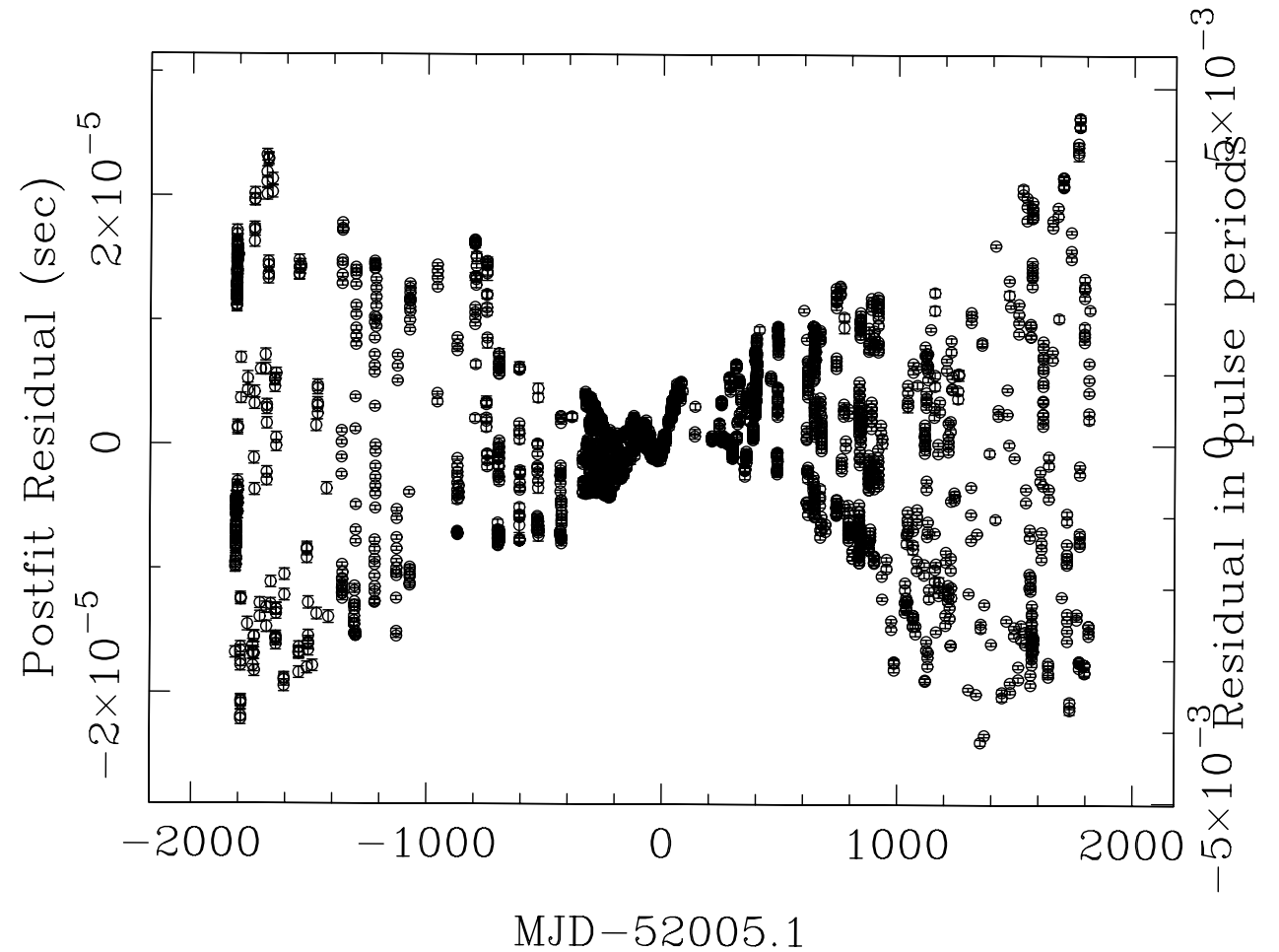
```
tempo2 -gr GWsingle -f 0437.pub.par 0437.pub.tim -dist 0.157 -across 1e-13 -aplus  
1e-13 -omega 5e-8 -gra 4 -gdec 34 -plot
```

Evolving GW Source

0437-4715 (rms = $3.876 \mu\text{s}$) pre-fit



0437-4715 (rms = $7.499 \mu\text{s}$) post-fit



```
tempo2 -gr GWevolve -f 0437.pub.par 0437.pub.tim -gwra 02:23:11.4 -gwdec 42:59:31 -e0
0.0001 -period 1.05 -theta0 60 -phi 45 -mc 1.3e10 -gwdist 80e6 -epoch 51981.0 -psrdist
1.0e3
```