

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Phys 194–FYRE Assignment #5 Solving a Binary Orbit

**Assignment Policy:** You can consult class notes, books, and online resources. You can work in small groups (2 or 3), but you must turn in your own work. Make sure you are clear about the process you use to solve the problems: partial credit will be awarded.

### Getting Started

As usual, login with your account at `notebook.nanograv.org` and navigate to your own directory (`shared/UWM_FYRE/etc.`). Once there, make a new folder (e.g. A5), then copy the contents of `~/shared/UWM_FYRE/Assignment-5` there – 4 files, including the notebook where you will write code for today’s activity. Write down the path to your “Orbit-Solver” notebook here since most of your work will go there:

### Additional Questions

Guided steps for today’s activities can be found in `Orbit-Solver.ipynb`; use this worksheet to answer a couple questions along the way.

1. What is the best  $P_b$  value you found for the first pulsar, J1930–1852? Briefly describe the method you used to increment  $P_b$  values while computing roughness.

2. Write down the values for all orbital parameters you found for J1930. How well does your model match the data?

3. Would you say these values for orbital parameters are typical? Why/why not?

4. Write down the values for all orbital parameters you found for J1017–15. How well does your model match the data?