Name: _____

Problem Set 2 (71 points)

Due Friday, September 14 at 10am

Submit Parts A-B on paper in Class. Submit Part C via Moodle.

Part A – Conceptual Questions (15 points)

Answer each of the questions below on a separate sheet of paper. Write legibly or type your answers, which should be in complete sentences and must be in your own words. Each question is worth 3 points.

1. Describe how the trigonometric parallax method works and why it is useful.
2. Describe the difference between apparent and absolute magnitude.
3. What was the significance of Young's Double Slit experiment?
4. What is radiation pressure? In what kinds of astronomical situations might it be important to consider?
5. What is meant by "color" in Astronomy?

Part B – Quantitative Questions (30 points)

Write out your answers neatly or type them up (you may wish to do Part C first if you are electing to do this). Show your work, and make sure all answers have appropriate units. Consider significant figures in reporting final answers. Each question or subquestion is worth 3 points. Problems 2-6 are from the reading for Week 2 that was distributed on Moodle.

1. Based on your answers to Exercises 1a and 1b on In-Class Activity 1, write a paragraph describing the balance of forces acting on JWST at L2. Make a quantitative argument for whether or not JWST will stay at L2 without help.
2. Carroll and Ostlie problem 3.2.
3. Carroll and Ostlie problem 3.3.
4. Carroll and Ostlie problem 3.4
5. Carroll and Ostlie problem 3.5a
6. Carroll and Ostlie problem 3.8

Part C – Computational. (26 points)

See supplemental file