ASTRO 102 – Lab Activity #1

A Survey of Mathematics for Introductory Astronomy

Name: _____ Date: _____ Campus: _____

Part I – Powers of Ten and Scientific Notation

1. g. _____

2. e. _____

3. h. _____

7. _____

9. d. _____

Part II – Units and Standards of Measure

2. b. C. _____ cm _____ mm

3. a. _____

5. h. _____

6. a. 1 pc or 1 l.y. 1 pc or 4 l.y. 1 A.U. or 1 l.y. 1 Mpc or 1 A.U.

7. f. _____ °C _____ °F

Part III – Angular Units of Measure and Scale

1. _____ minutes (') _____ seconds (")

2. a. _____ cm

2. b. _____

2. c. _____

2. d. _____

ASTRO 102 – Lab Activity #2

Spectra

Name: _____ Date: _____ Campus: _____

1. e. _____

1. f. _____

1. g. Violet: _____

Yellow: _____

Red: _____

2. b. _____

2. c. _____

3. a. _____

3. b. _____

3. c. _____

5. b. _____

6. a. _____

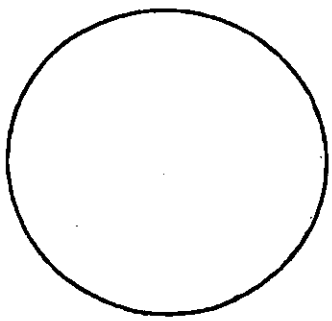
6. b. _____

Ast 102 – Lab Activity #3
Our Star – The Sun

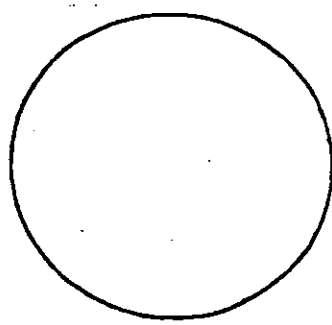
Name: _____ Date: _____ Campus: _____

For this activity you will make a series of solar observations with appropriate telescopic equipment in visible light. A series of at least three observations of sunspots will be made. A diagram of each observing session in the circle below will serve as a record of the observation. Be sure to record the time and date of each session. At the conclusion of your three observations you will hand in this paper.

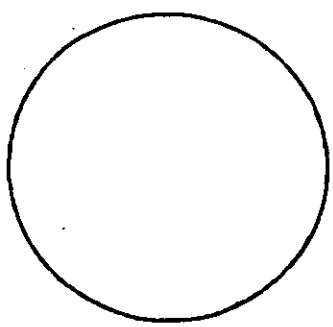
Date: .....
Time: .....



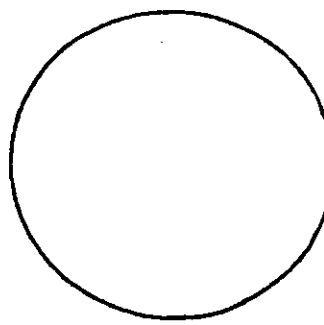
Date: .....
Time: .....



Date: .....
Time: .....



Date: .....
Time: .....



Ast 102 – Lab Activity #4

Stellar Parallax – Measuring the Distance Between Stars

Name: _____ Date: _____ Campus: _____

3.c Length _____ mm

Parallax _____ seconds

3.e _____

5.b Set A _____

Set B _____

Set C _____

5. c _____

5. d _____

7. a Mercury _____

Earth _____

Jupiter _____

Ast 102 – Lab Activity #5
Questions from Cosmos – "The Lives of Stars"

Name: _____ Date: _____ Campus: _____

1. To make an apple pie from scratch one must first invent the 1. _____
2. How many cuts to get down to an individual atom? 2. _____
3. Most of the mass in an atom is found in its 3. _____
4. Ten to the power one hundred is a 4. _____
5. Write a googleplex 5. _____
6. How many natural elements are found on Earth? 6. _____
7. The more familiar an element is the more 7. _____
8. How many protons does uranium have? 8. _____
9. Where are the elements made? 9. _____
10. Stars are born in 10. _____
11. The nearest star to us is the 11. _____
12. Dark regions of the Sun seen in X-Ray are holes in the 12. _____
13. What makes stars contract? 13. _____
14. Very massive stars collapse to become 14. _____
15. The Sun will reach it _____ giant stage at the end of its life cycle 15. _____
16. What element is the most abundant in the cosmos 16. _____
17. Where are the heavier elements made? 17. _____
18. Our Sun is probably a _____ generation star 18. _____
19. What is the source of the background counts in the lava tube? 19. _____
20. Evolution on Earth is possibly driven by the 20. _____
21. What did the Anasazi record in rock in the 11th century? 21. _____
22. A spinning neutron star is called a 22. _____
23. Where is the gravity so large that light can't escape? 23. _____
24. Gravity is only a _____ in space 24. _____
25. (TRUE/FALSE) We are all "solar powered". 25. TRUE FALSE
26. (TRUE/FALSE) Most stars are part of multi-star systems. 26. TRUE FALSE
27. Surrounding the galaxy are 27. _____

Ast 102 – Lab Activity #6
H-R Diagram and Stellar Life Cycles

Name: _____ Date: _____ Campus: _____

Part I

3.a _____

3.e _____

4.a _____

4.e _____

5.d _____

7.f _____

Part II

1.a _____

1.c _____

1.f _____

2. h _____

Ast 102 – Lab Activity #7
Brightness of Stars and Stellar Magnitudes

Name: _____ Date: _____ Campus: _____

1.a _____

1.b _____

1.c _____

2.b _____

3.b _____

5.a Magnitude of star A _____

Magnitude of star B _____

7.a _____

9.d _____

9.e _____

ASTRO 102 – Lab Activity #8

Variable Stars – Unique Stars

Name: _____ Date: _____ Campus: _____

1. d. _____

2. a. _____

2. d. _____

3. a. _____

5. a. _____

6. b. _____

8. c. _____

Ast 102 – Lab Activity #9
The Materials Between Stars

Name: _____ Date: _____ Campus: _____

1.c _____

1.d _____

2.a _____

3.d _____

6.d _____

8.a _____

9.a _____

Ast 102- Lab Activity #10
Questions from Cosmos - "The Edge of Forever"

Name: _____ Date: _____ Campus: _____

1). All people from all cultures share this experience. 1). _____

2). How long ago did the universe begin? 2). _____

3). What is the explosion of the beginning of the universe called? 3). _____

4). What are the largest structures of the universe called? 4). _____

5). Ellipticals came in how many sizes? 5). _____

6). When two galaxies collide do spirals form? 6). _____

7). (**TRUE/FALSE**) A Ring Galaxy is a temporary state? 7). TRUE FALSE

8). A monster version of rotating pulsars could be..... 8). _____

9). How long does it take for the Sun to revolve once around the galaxy? 9). _____

10). A change in pitch of sound from a moving object is due to the ..... 10). _____

11). What is the key to the cosmos? 11). _____

12). Who was the bright mule team driver? 12). _____

13). How big across is the telescope mirror at Mt. Wilson? 13). _____

14). What was Humason trying to measure? 14). _____

15). How long was the exposure of the spectrum? 15). _____

16). The farther away a galaxy the _____ it moves. 16). _____

17). Humason's work established what idea? 17). _____

18. If you lived in Flatland would you have height? 18). _____

19). Moving into another dimension provides a kind of _____ vision. 19). _____

20). If you move a cube at right angles to itself you would have a ..... 20). _____

21). Curved universe curves into what dimension? 21). _____

22). A closed universe is represented by a ..... 22). _____

23). The most sophisticated, ancient cosmology comes from ..... 23). _____

24). The age of Brahma is ..... 24). _____

25). Which universe has no beginning or end? 25). _____

26). What instrument can detect the beginning of the universe? 26). _____

27). To close the cosmos what is needed? 27). _____