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

# Observing Exercise

## Astronomy 305 – Observational Astronomy

### Observations of Jupiter

1. Use the 8”, 18” and 16” telescopes to observe Jupiter and its moons. In the diagram below, mark the positions of the moons of Jupiter that you can see through the telescope.

Jupiter

Date and Time of Observation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (CDT)

1. Neatly draw the surface features that you can see on Jupiter tonight on the Jupiter’s disk diagram to the right. Look for the Great Red Spot, moon shadows, white cyclones, dark streaks, belts, zones, etc. Look closely.

Disk of Jupiter

1. Label the surface features on your diagram to the right using Figure 10-1 from your *Stars and Planets* book. Label the names of the belts and zones can you see through the eyepiece tonight. Note that not all of the features in Figure 10-1 are present on a given night.
2. Go to one of the computers at the observatory and start a program called *TheSky* (Start -> Software Bisque -> TheSky). To locate Jupiter, right-click in the black space and select Find.
3. Label Io, Europa, Ganymede, and Callisto in your diagram shown on part 1 above.
4. Neatly fill in the blanks below and remember to include units.

Apparent Magnitude of Jupiter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Right Ascension of Jupiter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Declination of Jupiter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Use Appendix 11 of your *Stars and Planets* book to find the planetary longitude of Jupiter for tonight. If you have an older edition of *Stars and Planets* then plot the right ascension and declination found in part 6 on your SFA star charts. The planetary longitudes measured in degrees and are labeled along the ecliptic of your star charts.

Ecliptic Longitude (a.k.a. Planetary Longitude): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Planetary Positions

1. Using the dates along the ecliptic find the position of the Sun and label it in the diagram below. Use the planetary longitudes (a.k.a. ecliptic longitudes) from Appendix 11 to plot and clearly label the positions Mercury, Venus, Mars, Jupiter, and Saturn for tonight.

SFA Star Chart 2

SFA Star Chart 3

1. In what constellation does Jupiter appear tonight? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Give the Bayer designation of a bright star near Jupiter tonight. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Internet Research Questions

Use the internet to find the answers to these questions. Be clear in your answers and use complete sentences.

1. What is meant by “Galilean Satellites”?
2. What is the range of orbital periods (in days) for the Galilean Satellites?
3. How many moons does Jupiter have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Answers may vary.)
4. What is the name of the largest moon of Jupiter? How does it compare to the size of the planet Mercury?