

## Assignment 3: Week of January 22

### Babylonian Astronomy

**Reading:** Study handouts.

**Problems.** Due Thursday, Feb 1.

1. On December 1, 2000, the locations of the planets were as follows: Sun at 9 Sagittarius 5 50, Moon at 4 Aquarius 40 58, Mercury at 25 Scorpio 37, Venus at 21 Capricorn 20, Mars at 16 Libra 27, Jupiter at 5 Gemini 45, Saturn at 26 Taurus 34. Plot these planets on a chart of the Zodiac, and discuss (on the basis of this chart), the appearance of the sky at sunset and at four hours after sunset. Example questions to consider: what celestial bodies are visible? In what parts of the sky are they to be found? What is close to what?
2. Convert the positions above to ecliptic longitudes. Example: 20 Aries 5 is longitude  $20^{\circ}5'$ ; 18 Taurus 38 is longitude  $48^{\circ}38'$ .
3. How far do you expect the moon to move along the course of the zodiac in two hours? In twenty-four hours? As always, explain your work.
4. Using the information given on the planetary periods, predict the location of the planets on January 1, 2001. Then compare with the actual positions: Sun at 10 Capricorn 37 58, Moon at 18 Pisces 41 48, Mercury at 14 Capricorn 16, Venus at 26 Aquarius 58, Mars at 4 Scorpio 56, Jupiter at 2 Gemini 11, Saturn at 24 Taurus 35. Comment any discrepancies.
5. Observe the planets at night. Do they seem to be where the charts and tables say they are?