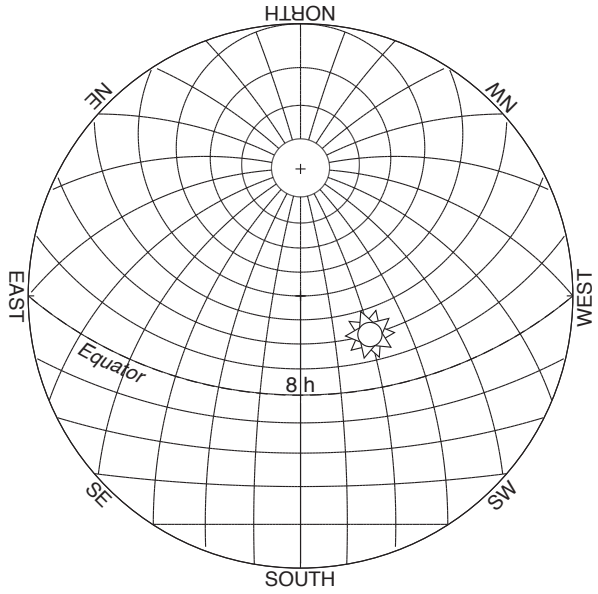
AST101 Take-home #4

Due October 11 Name: _____

For questions 1–5 use the diagram at right. The RA lines on the diagram are 1 hour apart; the declination lines are 10° apart.



1. What is the sidereal time?

2. What is the sun's RA?

3. What is the sun's Declination (remem ber + or -)?

4. What is the local apparent solar time (remember am or pm)?

5. In what direction will the sun rise (to the *nearest* 16th of the compass: NE, NNE, NE, ENE, and so forth)?

6. If the sidereal time is 6h and the sun's RA is 10h, what is the local apparent solar time (remember am or pm)? Blank grid on back for scratch use.

Right Ascension (RA): The east-west coordinate of the celestial sphere, measured in "hours." RA is 0h at the Vernal Equinox and increases eastward. RA is somewhat analogous to longitude on the Earth.

Declination (Dec): The north-south coordinate of the celestial sphere, measured in degrees. Dec is 0 at the celestial equator and 90 at the north and south celestial poles.

Local Solar Time (LT): The Sun's position relative to the meridian, PM to the west of the meridian, AM to the east. Sometimes referred to as the Hour Angle (HA) of the Sun.

Local Sidereal Time (LST): The Right Ascension on the meridian.

Sun's position at each season: **Spring:** RA=0h Dec=0; **Summer:** RA=6h Dec=23.5;
Autumn: RA=12h Dec=0; **Winter:** RA=18h Dec=-23.5.