AST 101: RA, Declination, and Time worksheet

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.

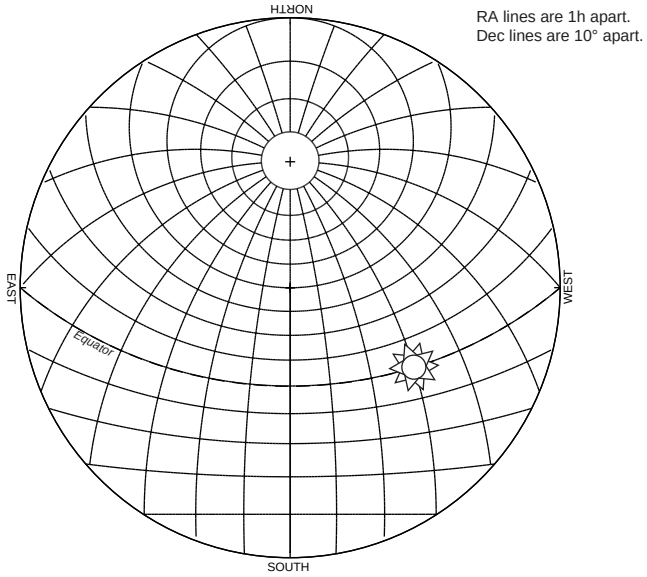
Sun's position at each season: **Spring:** RA=0h Dec=0°; **Summer:** RA=6h Dec=23.5°;
Autumn: RA=12h Dec=0°; **Winter:** RA=18h Dec=-23.5°.

a) What is the local apparent solar time for diagram at right?

b) The sidereal time for the diagram is 3h. What is the RA of the sun?

c) What is the Declination of the sun?

d) What is the approximate date?



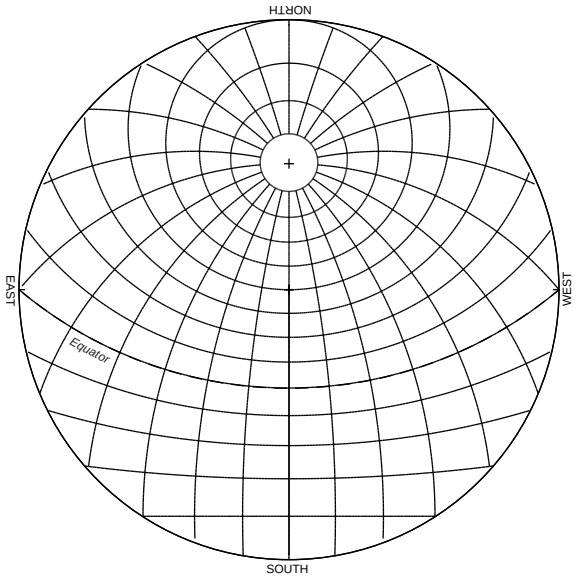
The local apparent solar time for the diagram at right is 5 pm. The declination is 23.5° N.

a) Plot an "X" on the diagram to mark the sun's location.

b) What is the approximate date?

c) What is the RA of the sun?

d) What is the sidereal time?

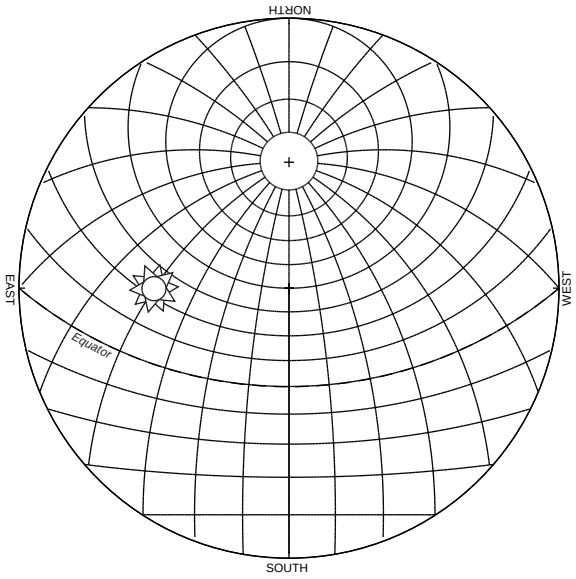


a) What is the local apparent solar time for the diagram at right?

b) The sidereal time for the diagram is 2h. What is the RA of the sun?

c) What is the Declination of the sun?

d) What is the approximate date?



The local apparent solar time for the diagram at right is 10 am. The sun's RA is 18h.

a) What is the sidereal time?

b) What is the approximate date?

c) What is the Declination of the sun?

d) Plot an "X" on the diagram to mark the sun's location.