12.109 Lab 6  Fun with Stereonets

This lab is designed to get you comfortable with using stereonets. Make sure to read each question before you start.

1)  A) Draw the crystallographic axis for the following crystal systems: Orthorhombic, isometric and hexagonal.
    B) On one stereonet, plot and label the axes for the orthorhombic and hexagonal systems.

2) On the same stereonet, plot planes in the following orientations (make sure to label them):
    A) Parallel to the B axis of the orthorhombic crystal
    B) Parallel to the A3 axis of the hexagonal crystal
    C) Perpendicular to the C axis of the orthorhombic crystal and containing the other two axes.
    D) A plane at 45 degrees to all three of the orthorhombic axes.
    E) A plane at 45 degrees to the negative A and B orthorhombic axis but parallel to the C axis.

3) Draw a tetrahedron, give its crystal class and put all the symmetry elements on a new stereonet.

4) On a new stereonet, plot the vectors from a cube center to each apex. Also, plot vectors to the middle of each side of the upper face.

5) On the same stereonet as in 4, plot the poles to the [111] faces. What is the angle between the poles and the vectors you plotted to the midpoints of the cube sides?