AST 250 – Spring 2019
Homework Due: Wednesday January 16

2. Use geometry to calculate the elevation of the North Celestial Pole (NCP) above the horizon for an observer at latitude ϕ.
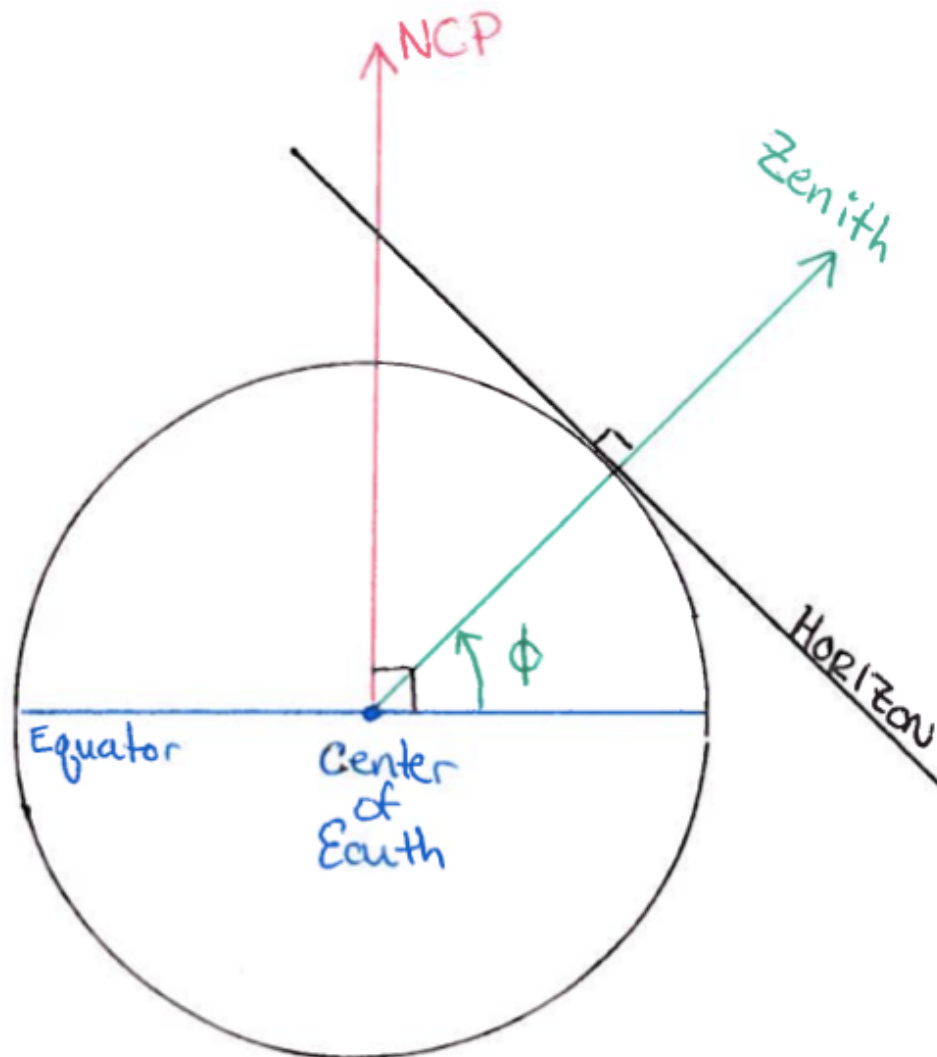

Figure 1: Starting point for the geometry for problem 2. The large circle represents the Earth. You will want to recopy this Figure.

3. Imagine you want to observe a source simultaneously at Arecibo Observatory in Puerto Rico (longitude, latitude = 66º 42' 56.63", +18º, 28', 20.8") and at Kitt Peak Observatory (111º 35' 59", +31º 57' 50") in Arizona. What is the *difference* in LST (h m s) at any given instant between these two observatories?

Figure 2: The telescope in the first part of the movie Contact is the Arecibo Radio Telescope. It has a diameter of 305m and was the largest radio dish in the world for more than 50 years until China completed the FAST radio telescope (500m) in 2016.