

Instruction Handout

1. Open Scratch (or program of your choice)
2. Load the star map and horizon graphic (Scratch: Add sprite)
3. Overlay the horizon on the star map. Arrange the locations and sizes of the graphics until you have a perfect alignment of the circular edge of the horizon graphic with the edge of the star map graphic. The date and time tick marks need to be visible just beyond the edge of the horizon graphic.
4. Create controls to rotate the star map:
 - i. Add the ability to set the star map to any angle between 0° and 360°
 - ii. Create an animation that rotates the map through 360° automatically.
 - iii. Daily motion: Add ability to rotate by a selected number of hours (from any starting position of your choice). Hint: You need to figure out how many degrees per hour the night sky rotates by first.
 - iv. Annual motion: Add ability to rotate by a selected number of days. Again, you will need to figure out by how many degrees the night sky rotates from one day to the next.
 - v. Finally, add ability for user to set any real date and time, leading to the star map automatically rotating the right amount. Hint: Rather than having the user enter an actual date and time, it's fine if they enter number of days and number of hours from a chosen starting point (e.g. Midnight on January 1st).