## Central Forces <br> Visualizing Spherical Harmonics

Each group will be assigned a specific spherical harmonic, $Y_{\ell}^{m}(\theta, \phi)$. On your balloon, mark:

- $\theta=0$
- $\phi=0$
- The value of your $Y_{\ell}^{m}$ (using an Argand-like diagram) at several values of $\theta$ and $\phi$.

Answer the following questions:

1. What happens at the poles?
2. How many times does the phase complete a full rotation around the equator?
3. Compare with a group with a different spherical harmonic. How do they compare? What would happen if you add them together?
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