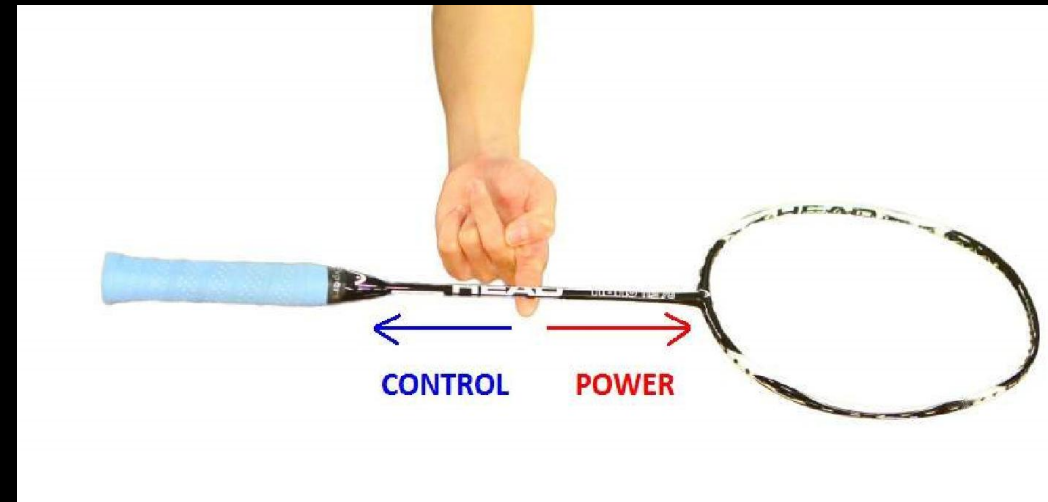




EARTH'S MOVEMENT

BARYCENTER

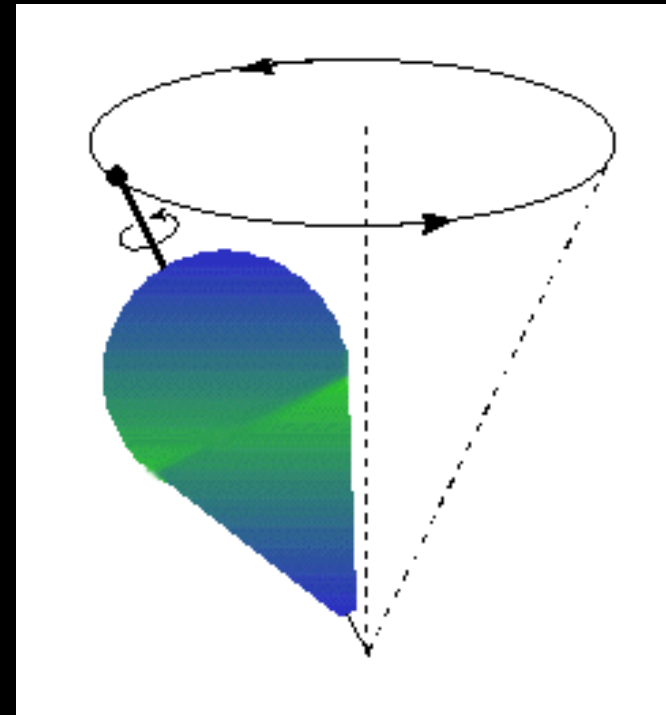
- The point between two objects where they balance each other
 - The center of mass where two or more celestial bodies orbit each other.
 - When a moon orbits a planet, or a planet orbits a star, both bodies are actually orbiting around a point that lies outside the center of the larger body. (1,710 km)



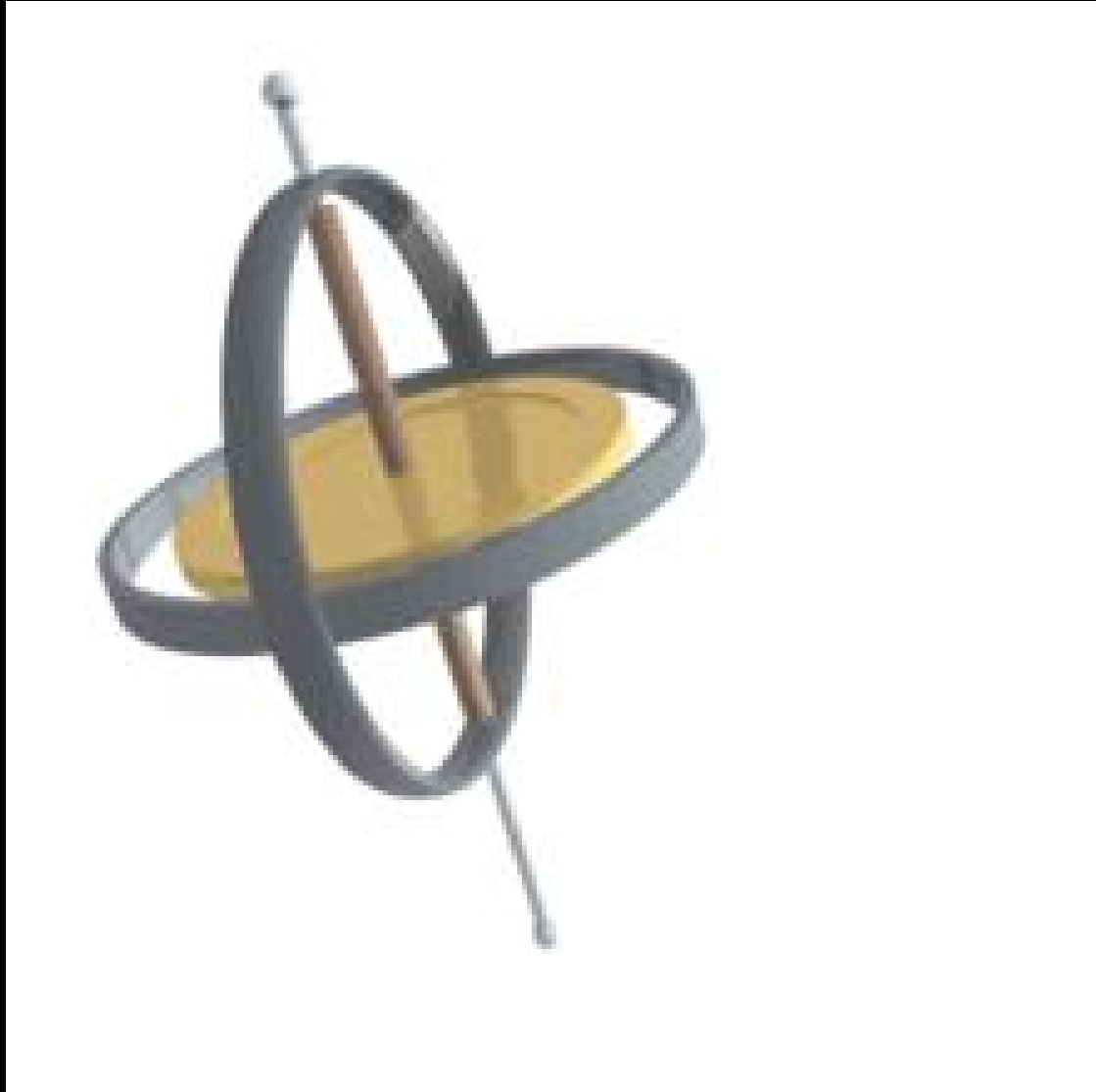
- 
- The Sun is not stationary in our solar system.
 - It actually moves as the planets tug on it, causing it to orbit the solar system's barycenter.
 - The sun never strays too far from the solar system barycenter.
 - <http://www.youtube.com/watch?v=1iSR3Yw6FXo>

PRECESSION

- Change in the direction of the axis of the Earth, but without any change in tilt
- This changes the stars near (or not near) the Pole, but does not affect the seasons
- The Earth's axis currently points at Polaris as the "Northern Star", but it won't always be..



Each gyration around the cone takes 26,000 years



NUTATION

- Wobbling around the precessional axis
- Change in the angle: $\frac{1}{2}$ degree one way or the other
- Occurs over an 18 year period and is due to the Moon
- Very slightly increases or decreases seasonal effects

