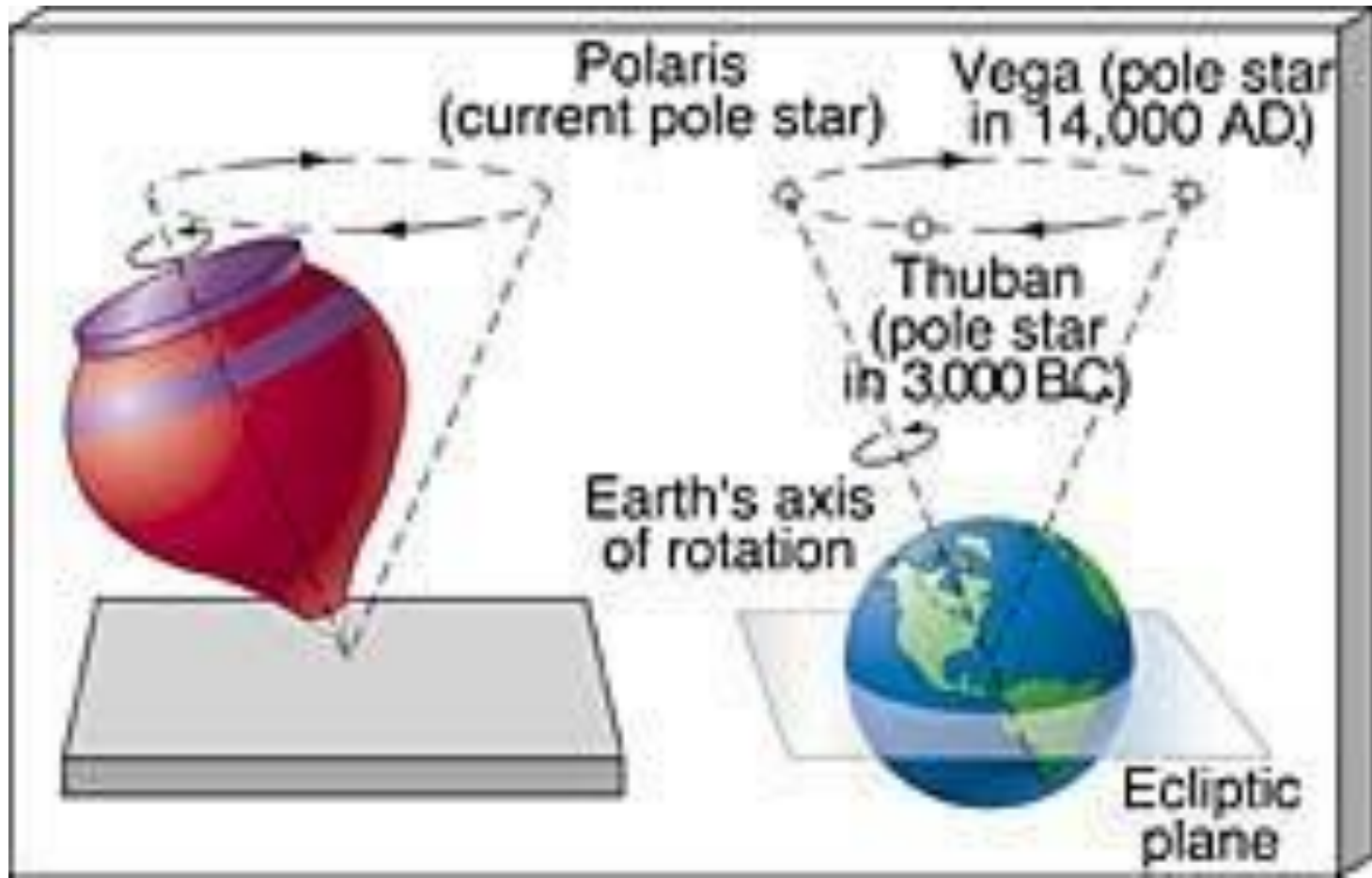


Earth's other movements

Precession is:

- the gravitational pull of the moon that causes Earth's axis to wobble and spin like a top
- Earth makes 1 full turn every 26,000 years
- North Star will NOT always be where North Pole points

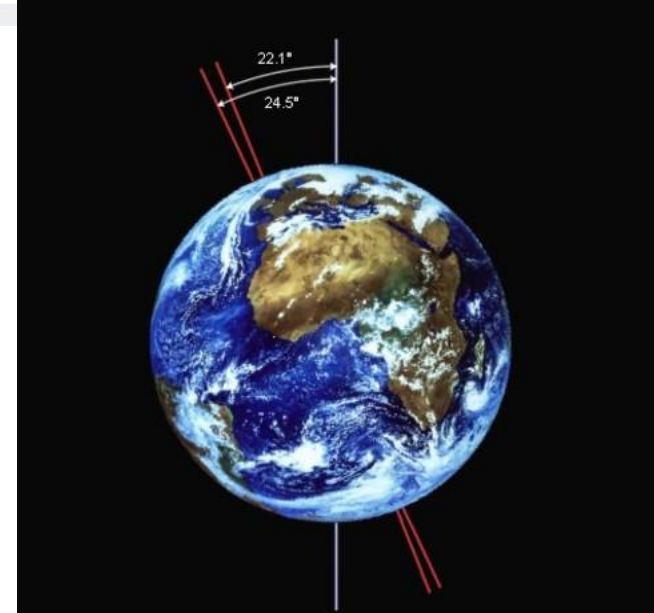
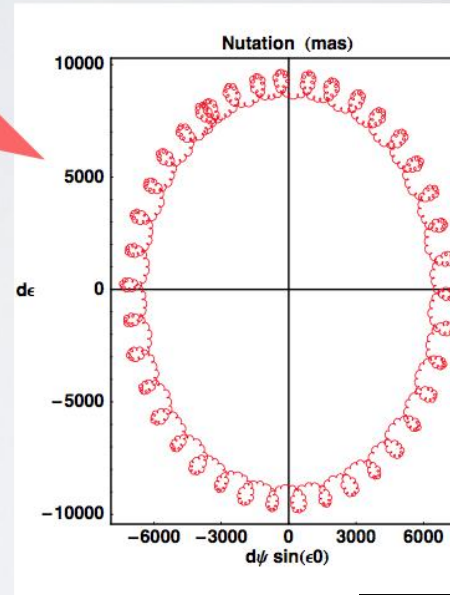
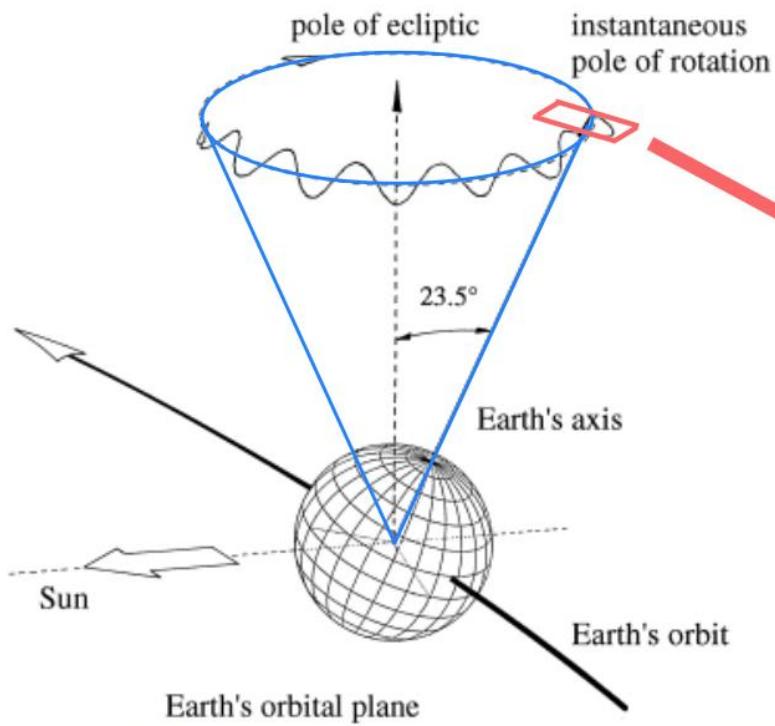
Precession: The axis points in different directions!



Nutation

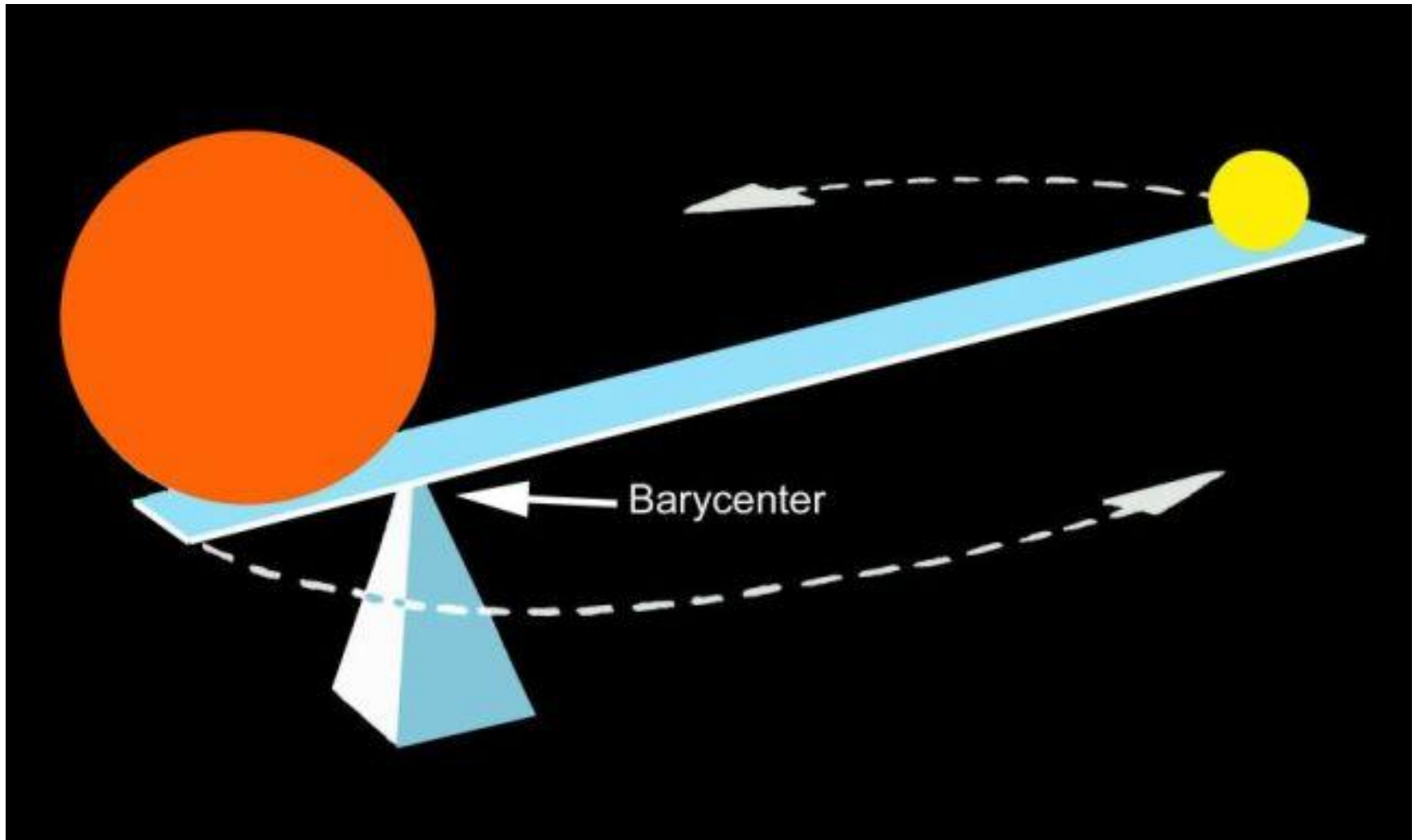
- the rocking or wiggling motion on the axis of rotation
- Earth's nutation period is 18.6 years
- The effect is a small change in Earth's tilt towards the sun
- Result is a slight shift in location of:
Tropic of Cancer, Tropic of Capricorn,
Arctic Circle and Antarctic Circle

Main cause: gravitational torque from the Moon, the Sun and the planets

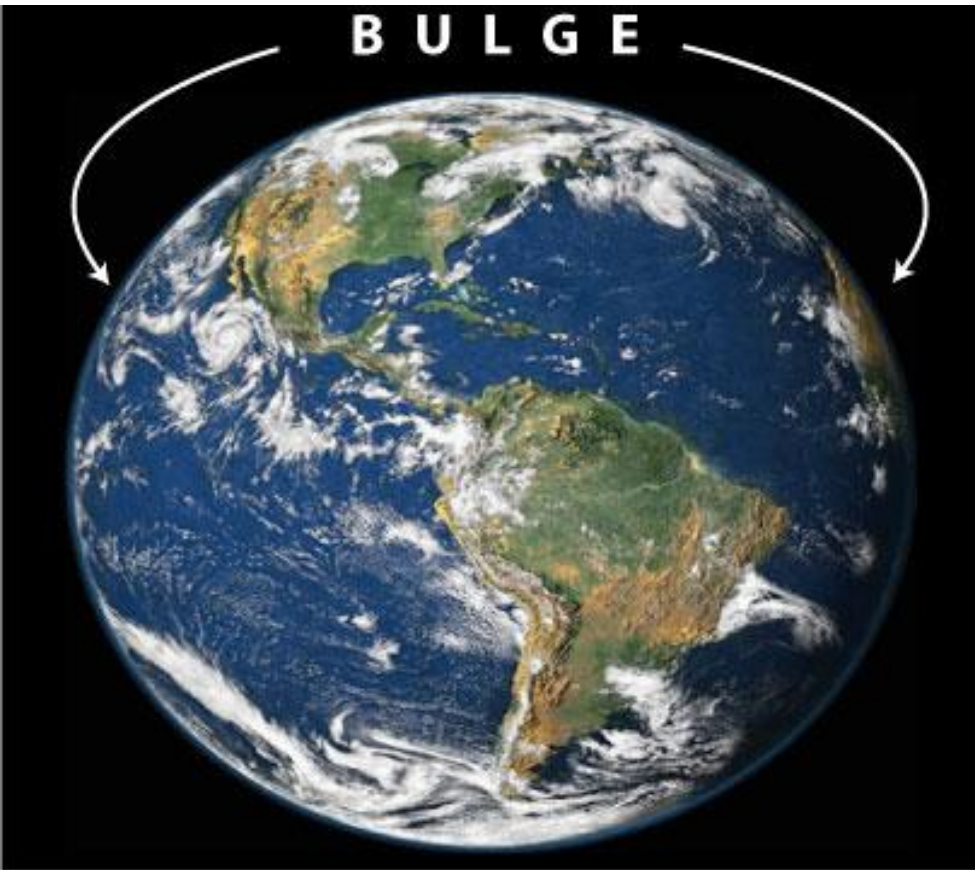


Barycenter

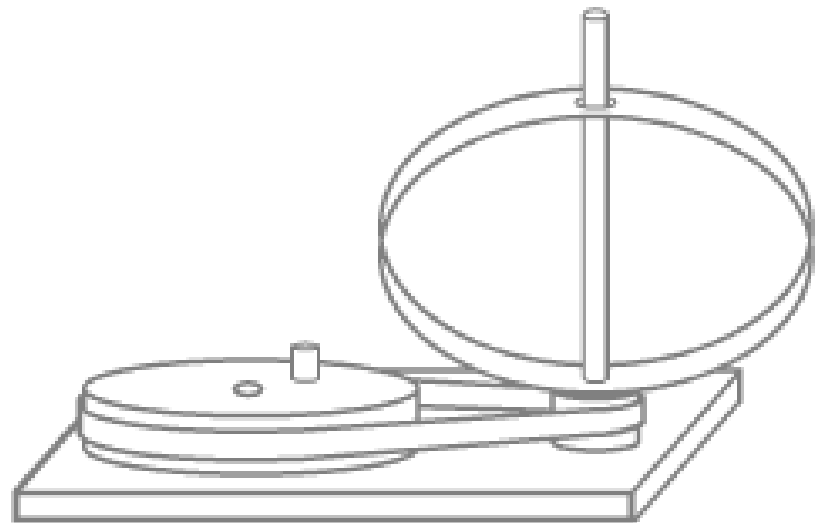
- the point between 2 objects where they balance each other
- The center of mass between 2 or more celestial bodies that orbit each other
- Both bodies orbit around a point that is NOT the center of the larger body



<http://www.youtube.com/watch?v=1iSR3Yw6FXo>



Earth's Circumference



[Video: Shape of Earth](#)

[Earth's circumference](#)

[Video: Earth's Equatorial Bulge](#)