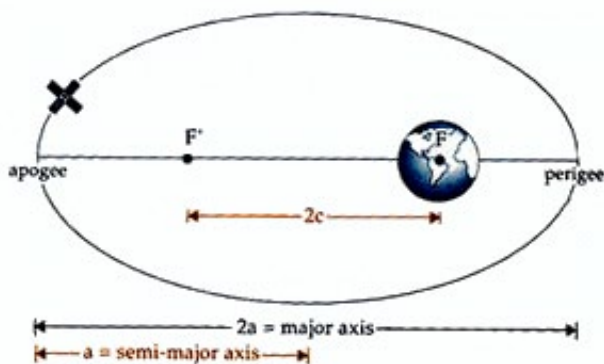## How to Describe an Orbit

There are six Classical Orbital Elements (see *Defining Classical Orbital Elements*) that are necessary for us to know about an orbit and a satellite's place in that orbit. These elements help us describe:

> orbit size

> orbit shape

> orbit orientation

> orbit location

Elliptical geometry

> An ellipse looks like an oval or squashed circle.

> The longest line drawn from one end of the ellipse (through the center) to the other side is called the **major axis** (2a).

> Every ellipse has two **foci** (F and F'). The distances between each of the foci and the center of the ellipse are equal (c). In a circle, the two foci lie on top of each other.

> The point on the semi-major axis closest to the Earth is called the **perigee**. The point on this axis farthest from the Earth is called the **apogee**.