A background image of a starry night sky. The stars are small white and yellow dots scattered across a dark blue and black field. A bright, yellowish-white comet streaks diagonally from the upper left towards the lower right, leaving a long, glowing tail. The bottom right corner of the image has a reddish-brown gradient.

# **Asteroids, Comets, Meteoroids**

# Asteroids

- **A small, rocky object that orbits the sun.**
- **Most asteroids are located in the asteroid belt between Mars and Jupiter. (Never formed a planet!)**
- **> 50,000 have been discovered.**
- **Near-Earth asteroids (>1,000) are asteroids with a wide elliptical orbit that brings them close to Earth's orbit.**
- **Many people think the extinction of the dinosaurs was due to an asteroid hitting Earth.**

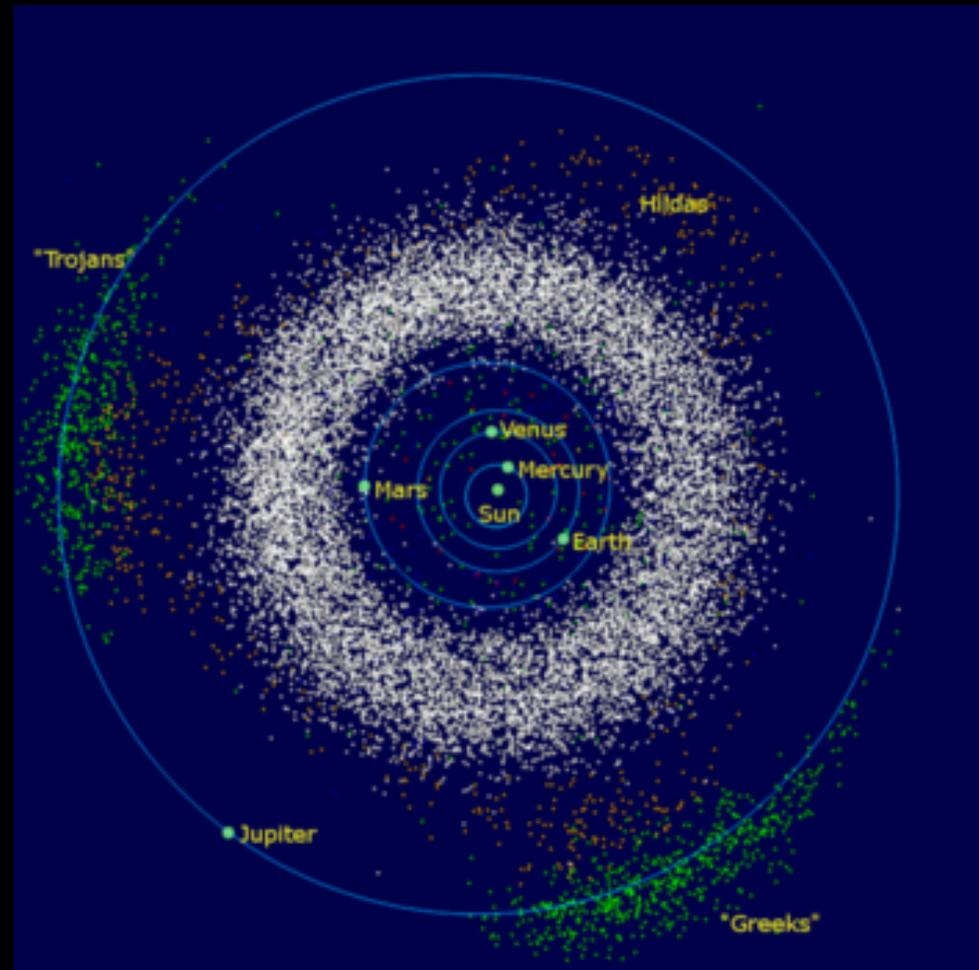
# Asteroids

- Smaller than a planet but larger than a meteoroid



# Asteroid Belt

- Lies between Mars and Jupiter
- Gravitational pull of the Sun and Jupiter did not allow them to form a planet



# Comets

- **A comet is a small body or rock, ice, and cosmic dust that follows an elliptical orbit around the sun and gives off gas and dust in the form of a tail as it passes close to the sun.**
- **The solar wind causes the ice to sublimate (turn into gas) and form a coma and tail. The tail always points away from the sun's solar wind.**
- **Comets originate in the Oort Cloud or Kuiper Belt.**
- **Halley's Comet goes by Earth every 76 years (last 1986, next 2061)**

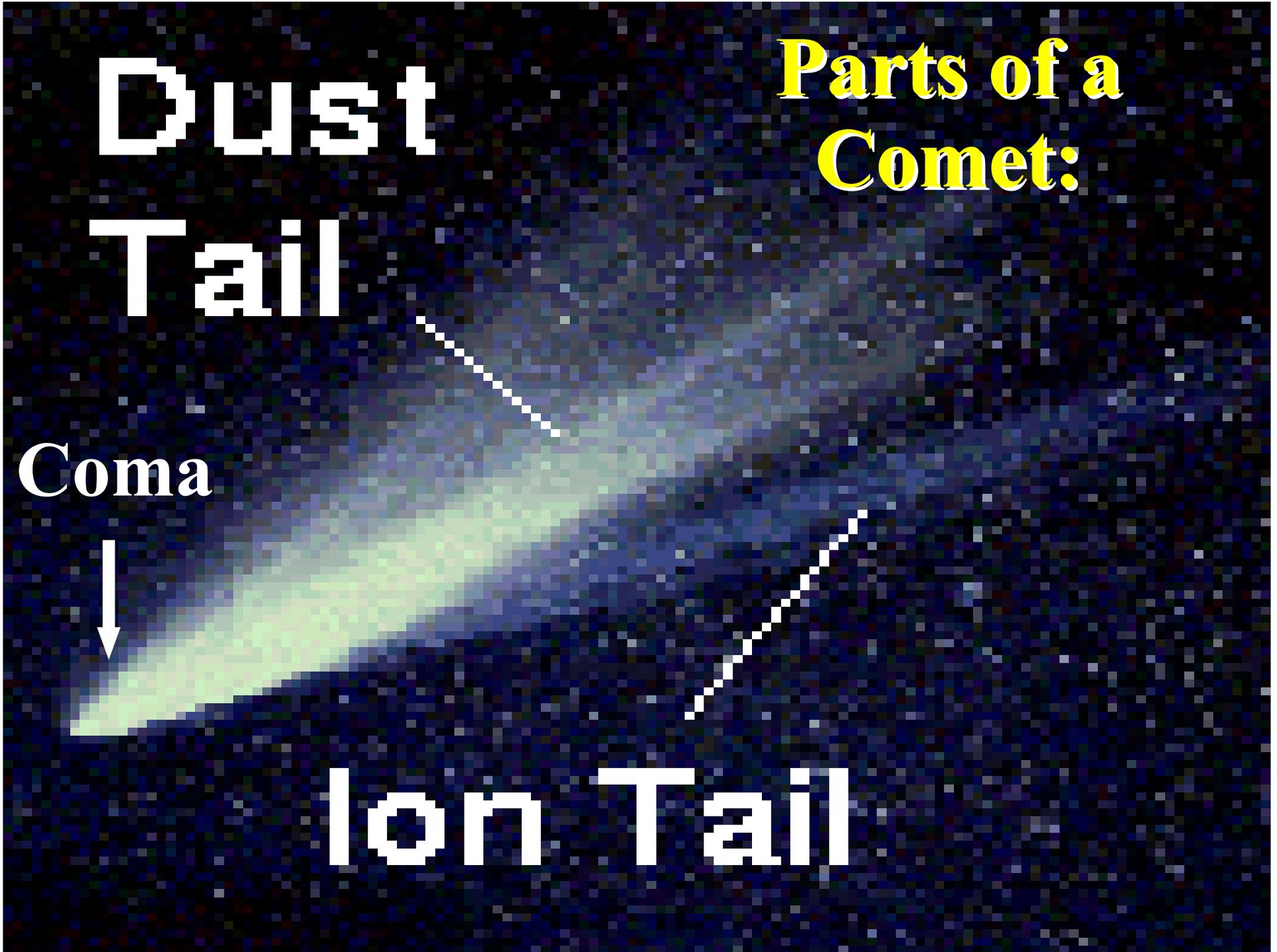
**Parts of a  
Comet:**

**Dust  
Tail**

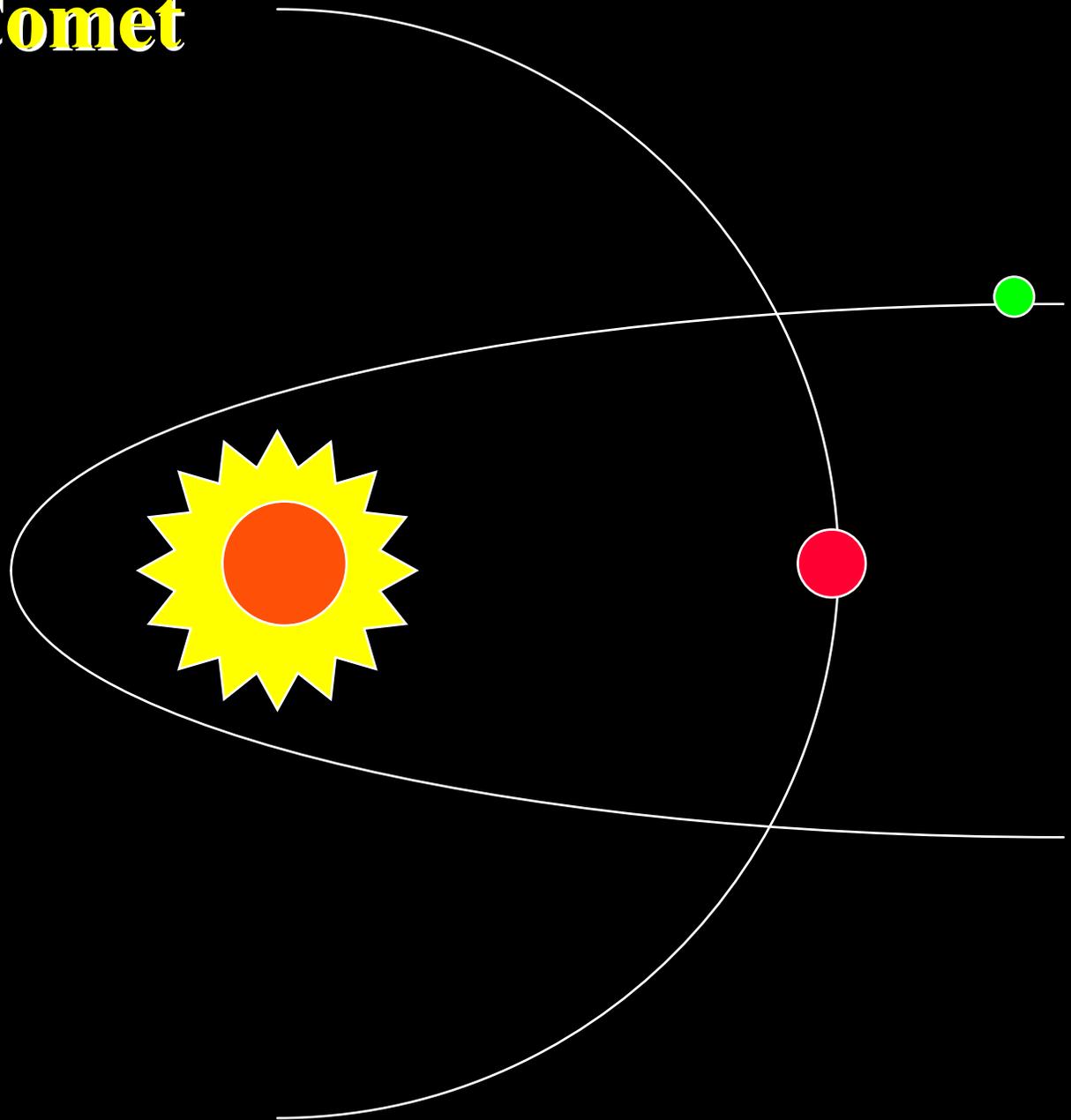
**Coma**



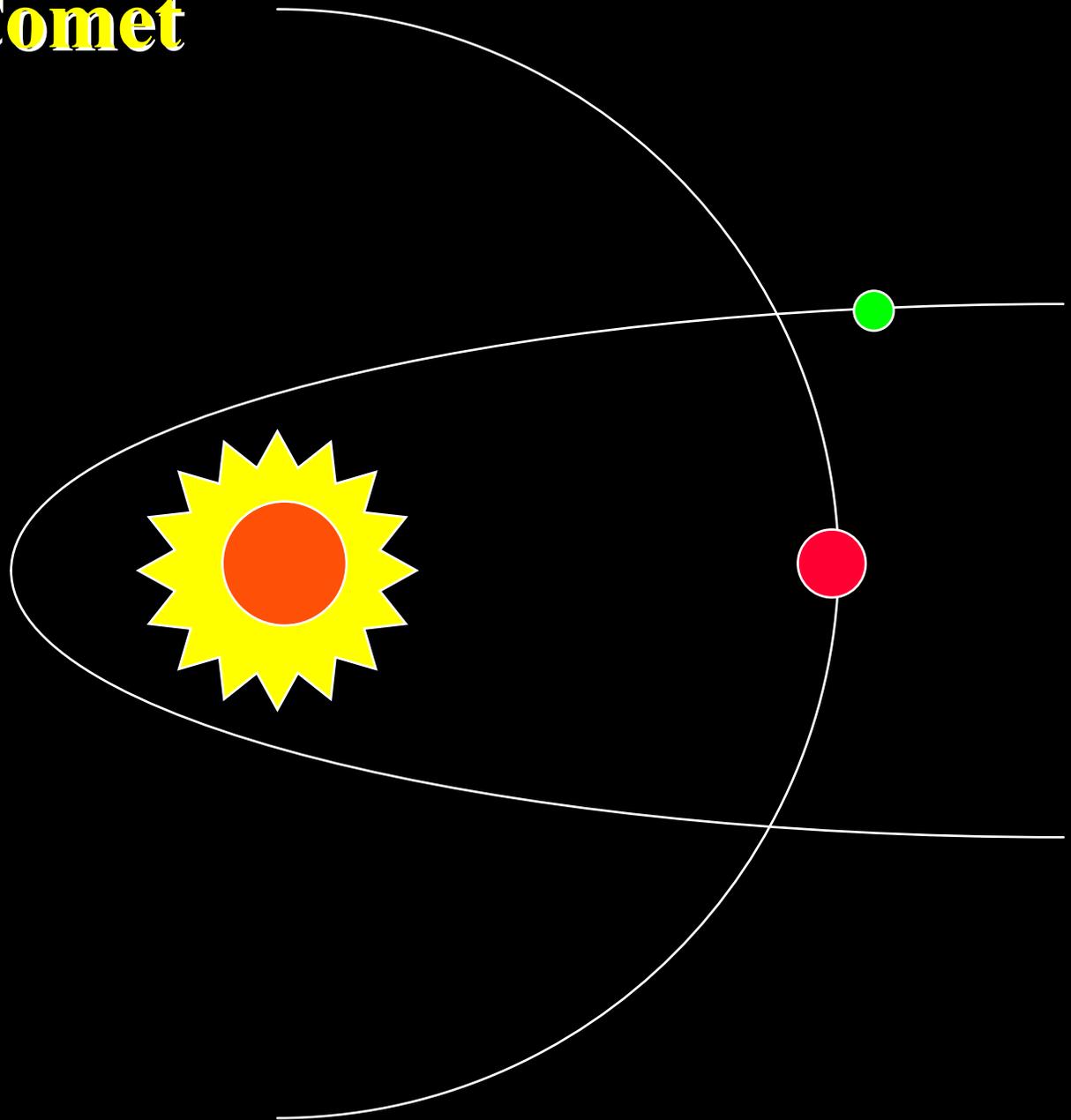
**Ion Tail**



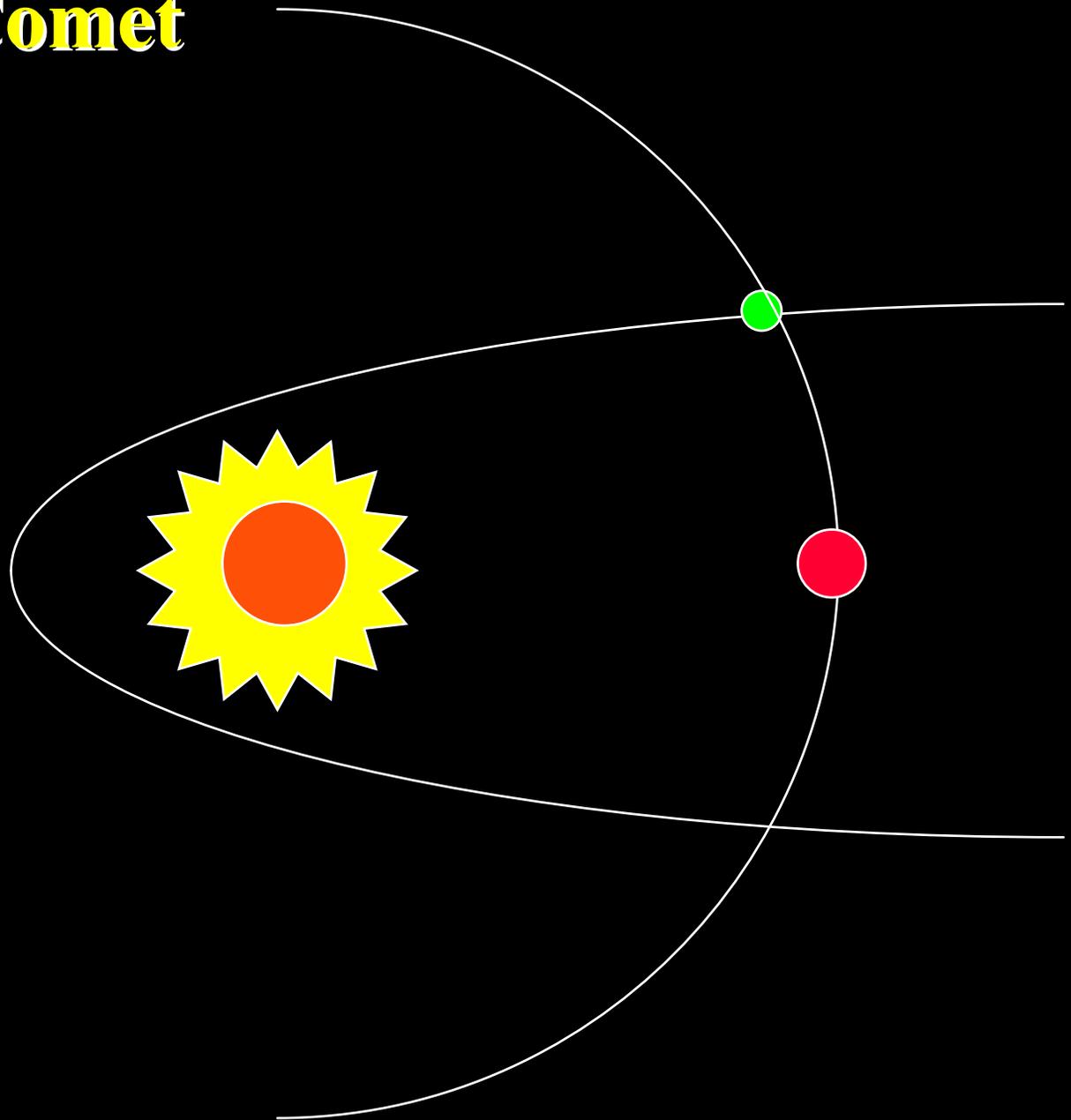
# Path of Comet



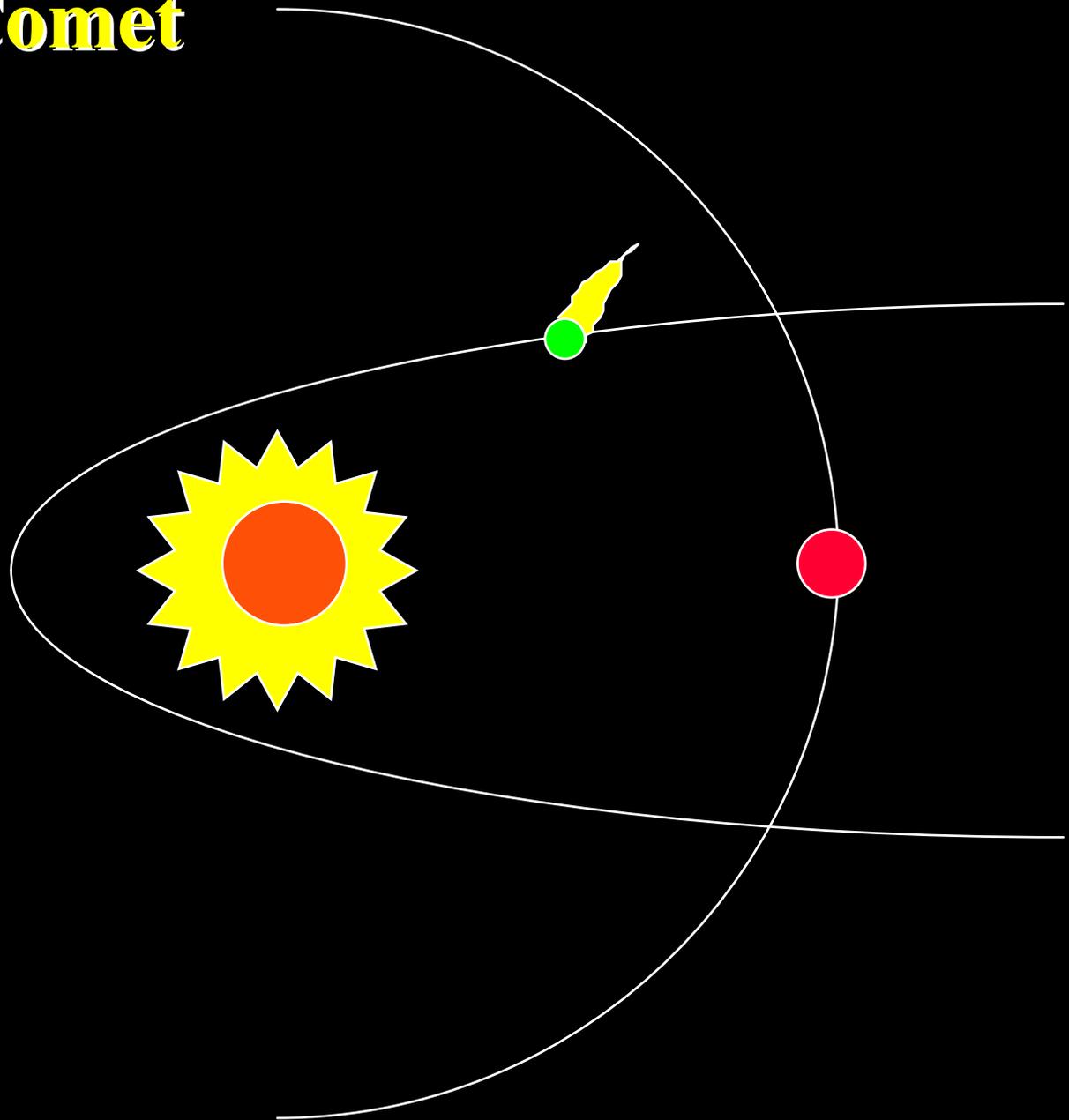
# Path of Comet



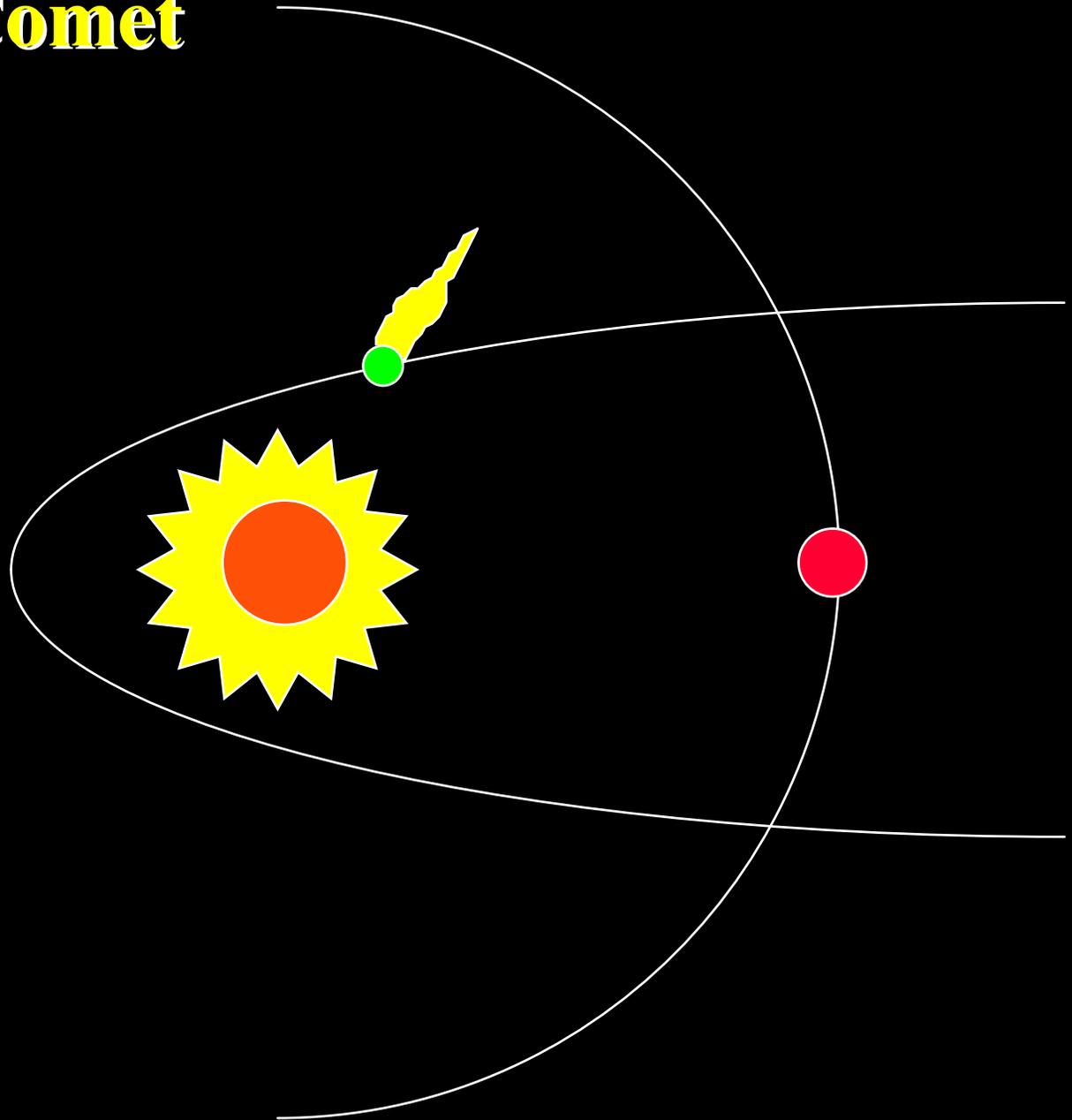
# Path of Comet



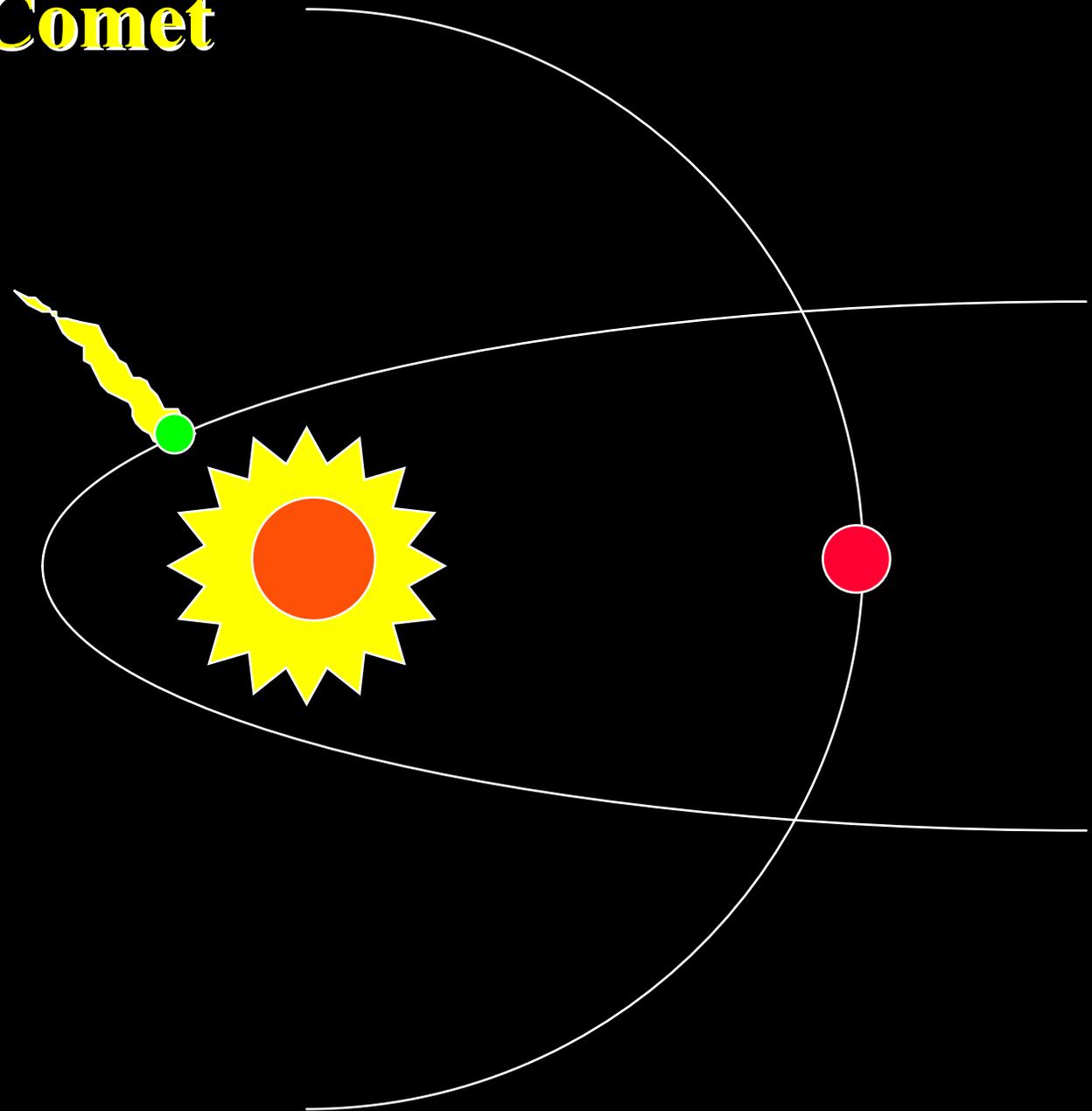
# Path of Comet



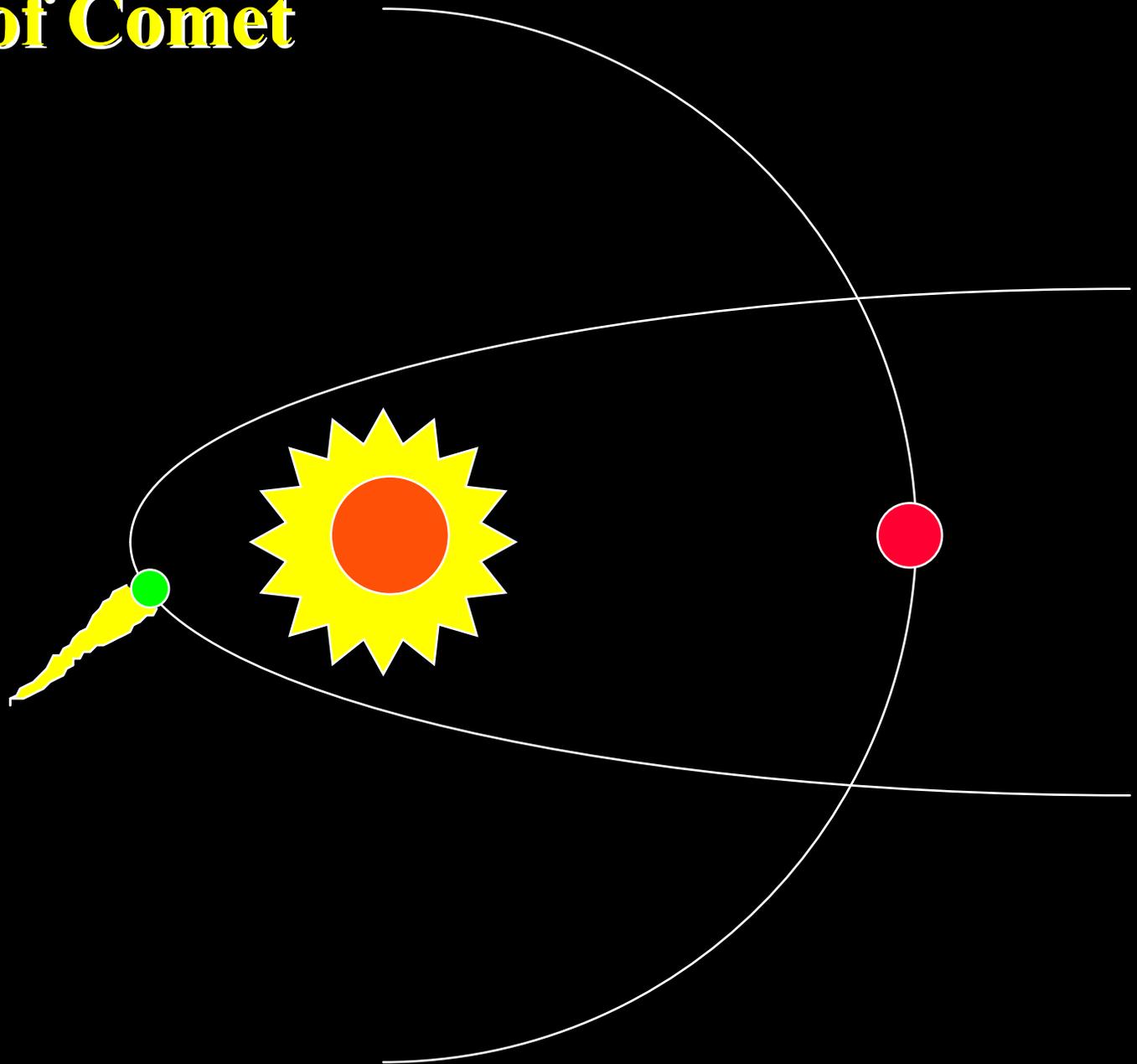
# Path of Comet



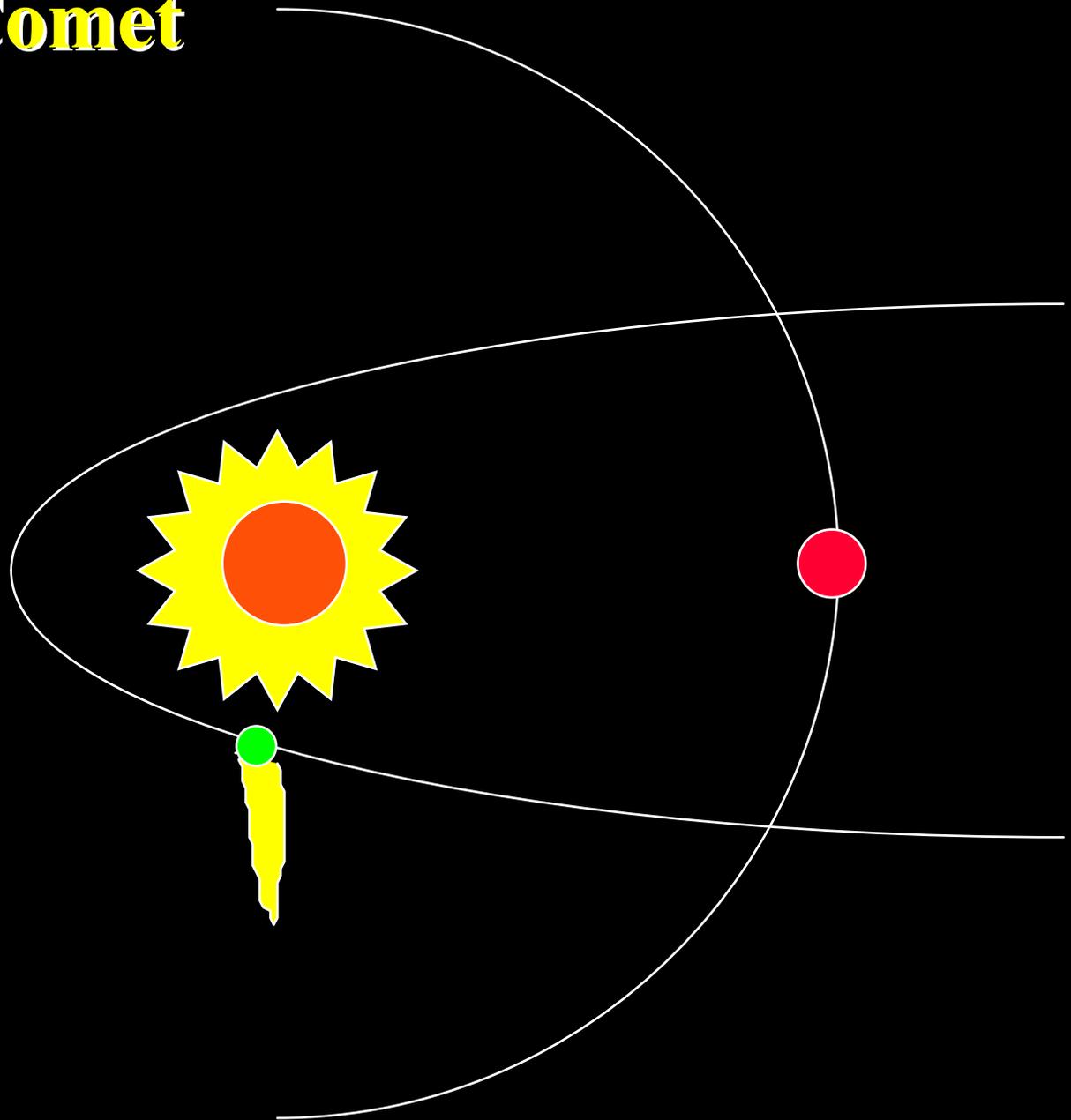
# Path of Comet



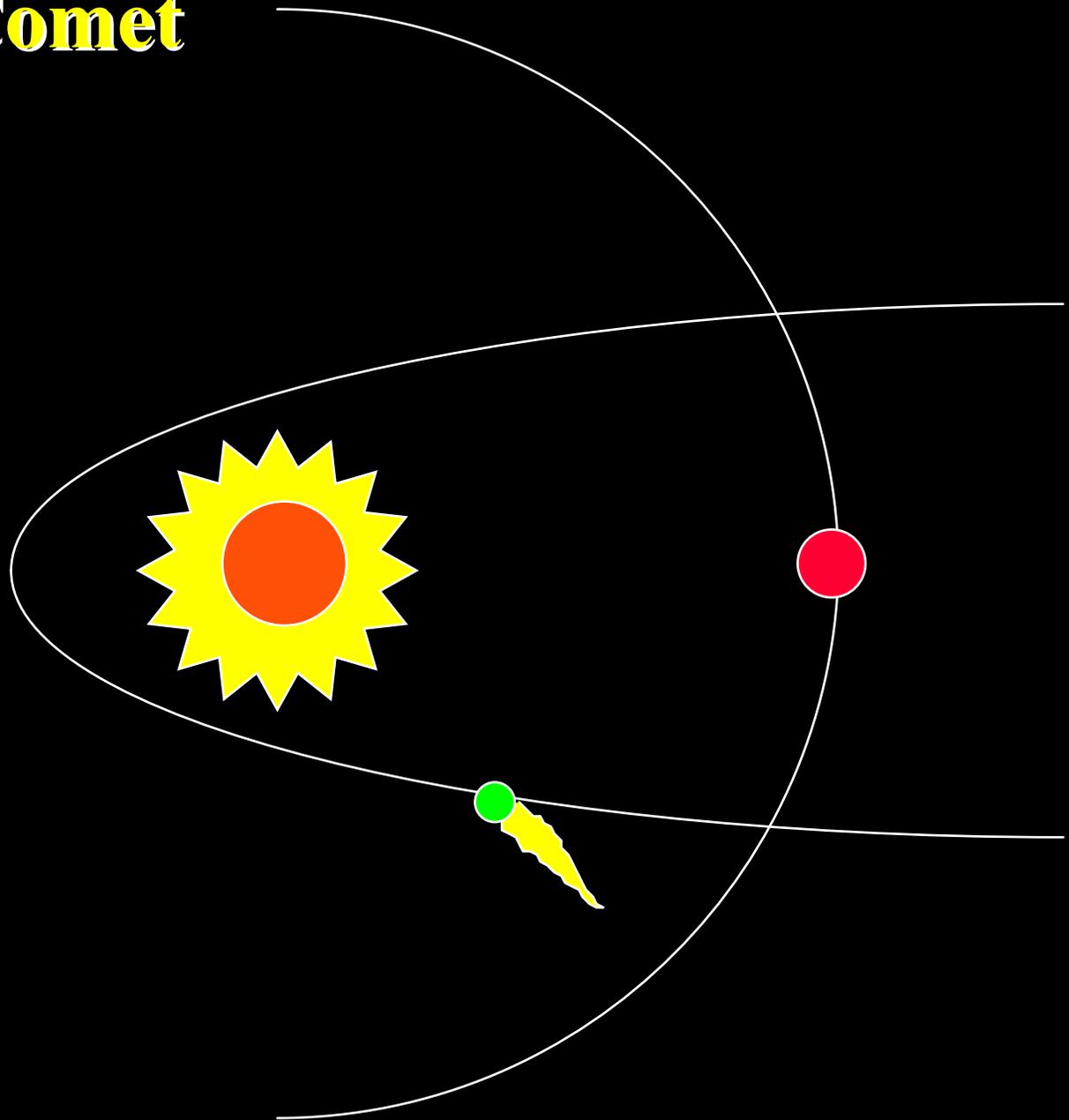
# Path of Comet



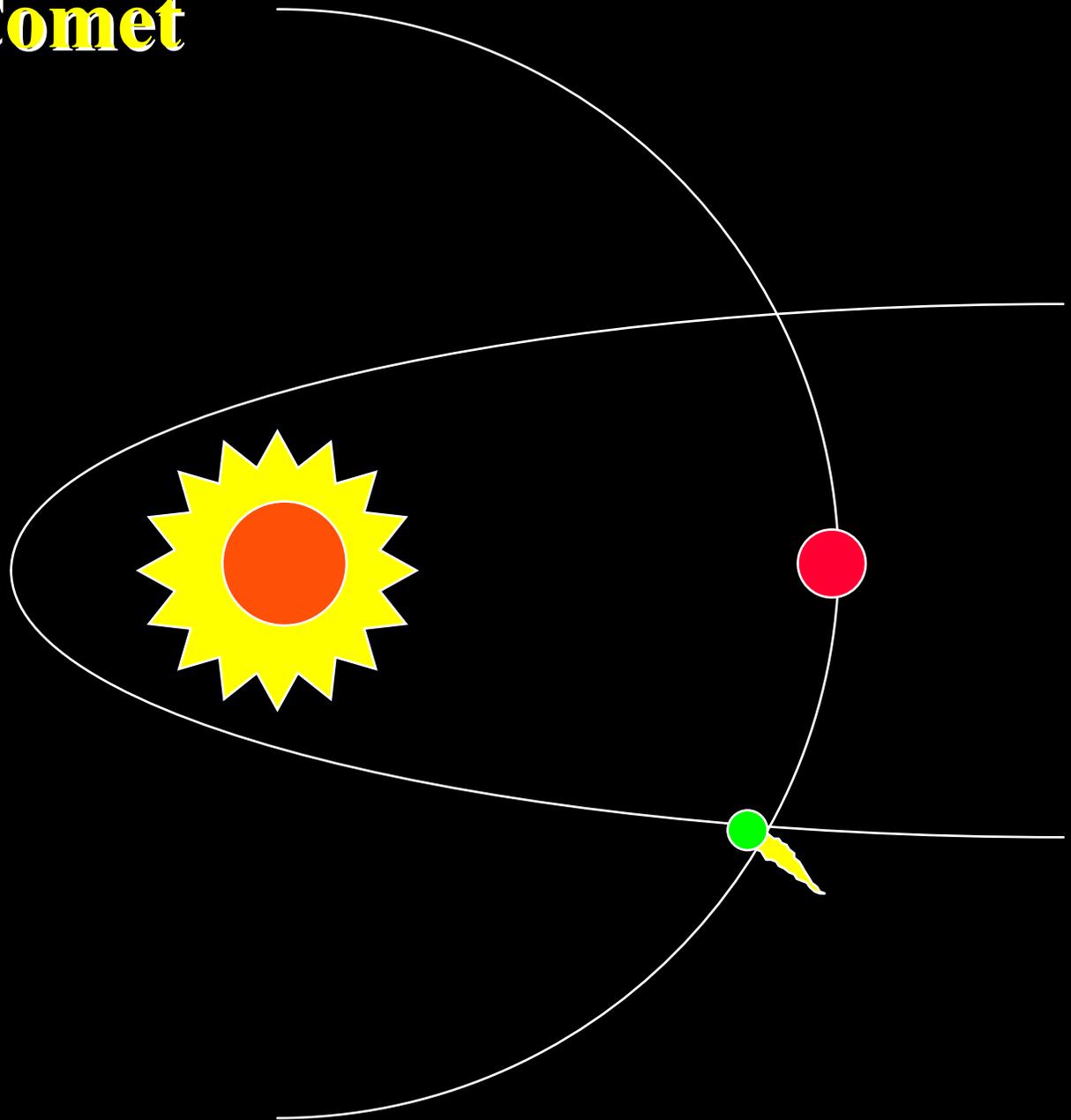
# Path of Comet



# Path of Comet

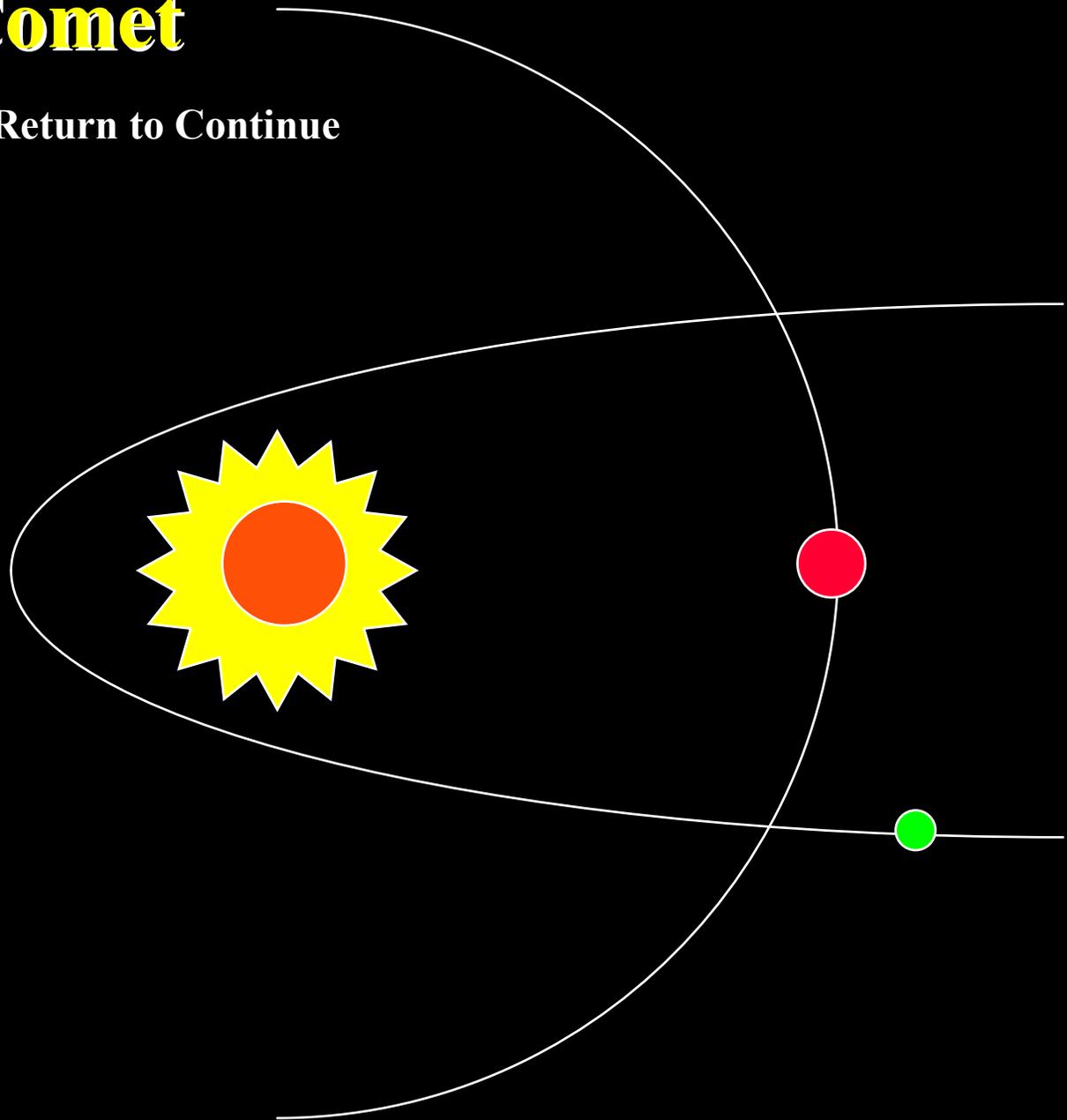


# Path of Comet



# Path of Comet

Hit the Mouse or Return to Continue



# Halley's Comet



# Halley's Comet



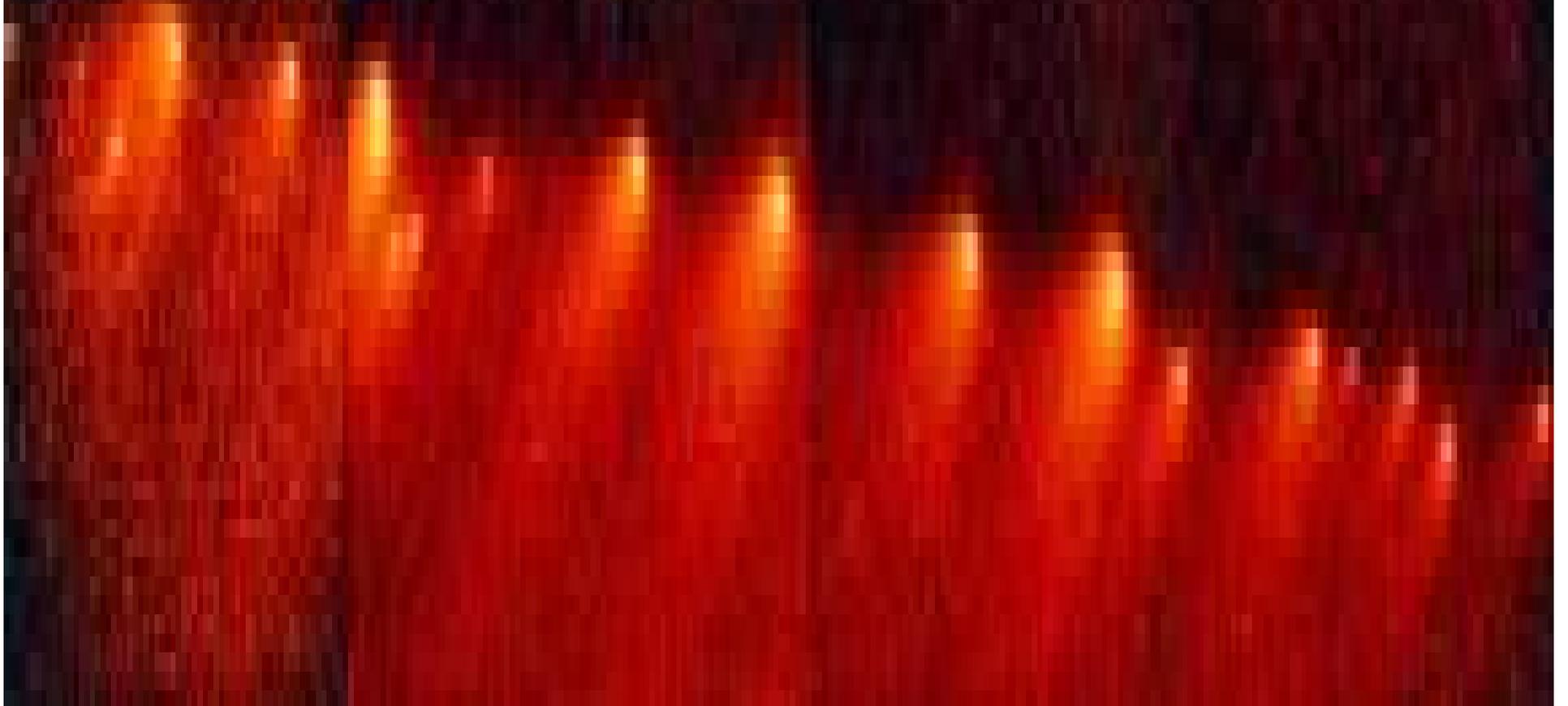
# Comet Hale Bopp



# Comet: Comethyatukate



# Comet: Shoemaker-Levy 9



# Jupiter Comet Impact

- Comet Shoemaker Levy 9 collided with Jupiter in 1994



# Meteoroids

- A meteoroid is a relatively small, rocky body that travels through space.
- A meteor “falling or shooting star” is a bright streak of light that results when a meteoroid burns up in Earth’s atmosphere.
- A meteorite is a meteoroid or any part of a meteoroid that is left when a meteoroid hits the Earth.

# Meteor Crater in Arizona

-Caused by a Meteorite 50 meters across!



# **Meteor Showers**

**Meteor showers do not originate from the asteroid belt.**

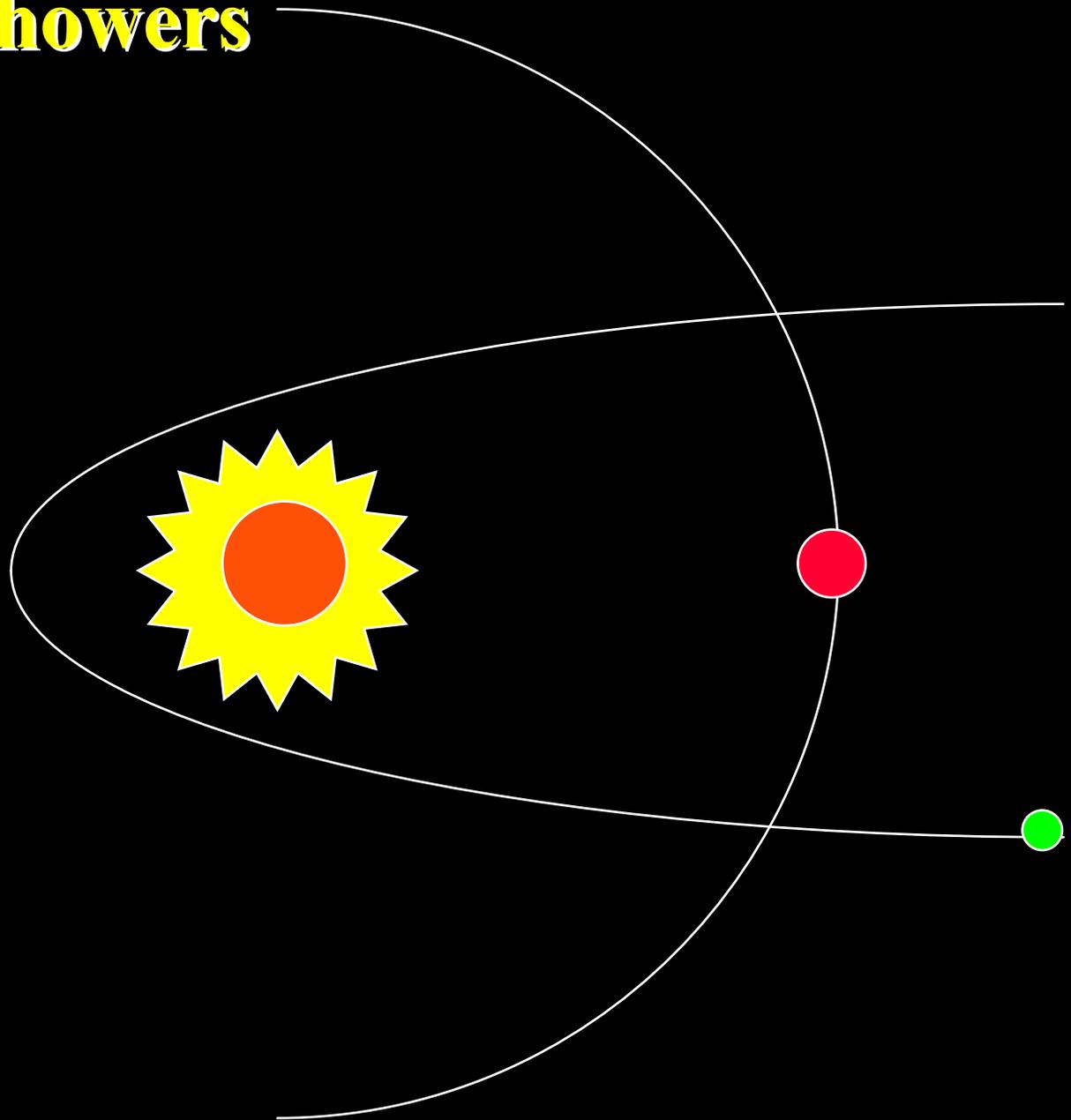
**Meteor showers occur when the Earth passes through the orbit of a present or old comet.**

**When this occurs, the Earth encounters an unusually large amount of particles entering the atmosphere.**

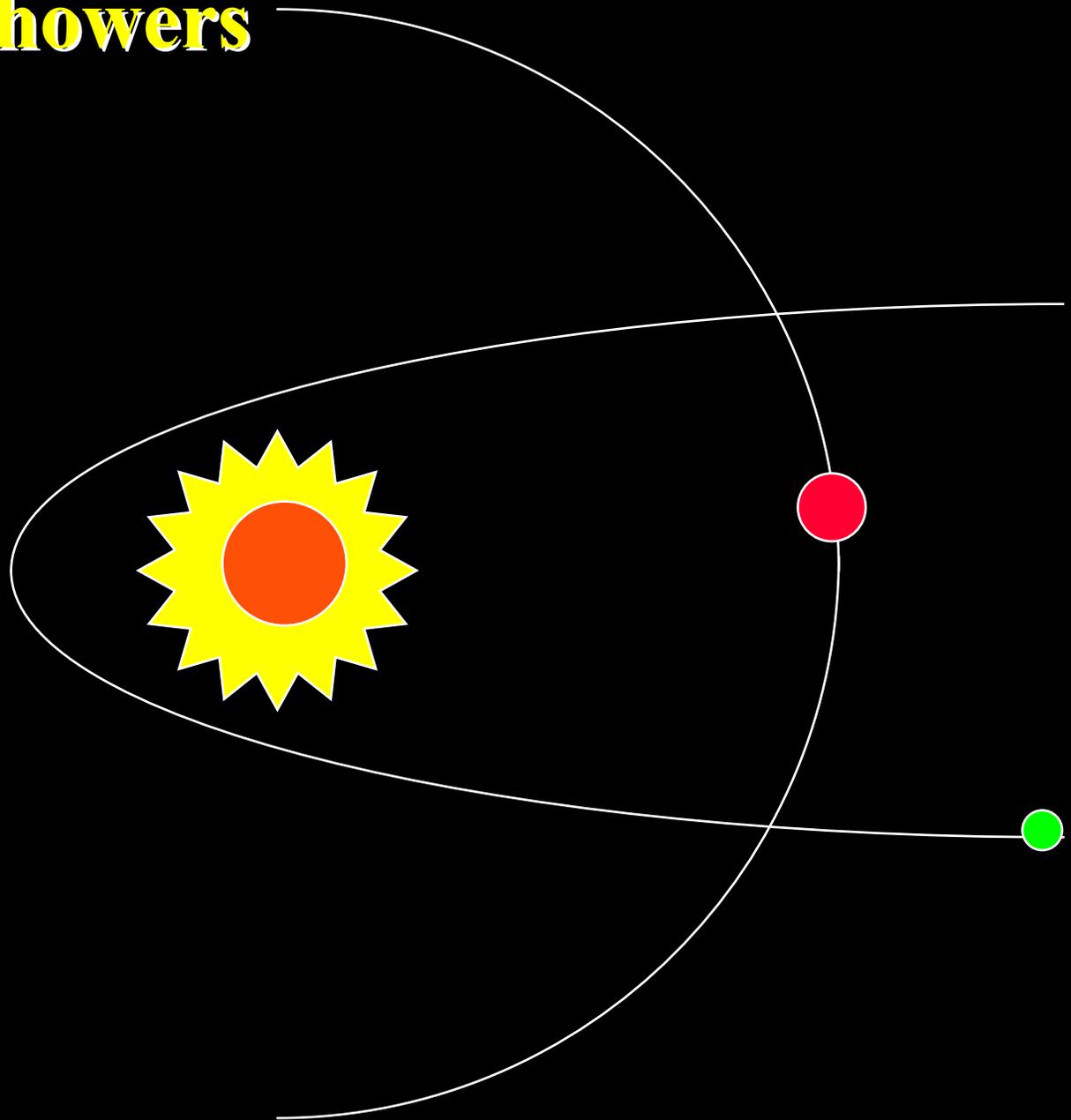
**The normal number of meteors is about 6 or 8 per hour, however during a meteor shower this number has reached as much as more than 100,000 per hour.**

**Lets observe the path of Earth as it passes through a comet orbit**

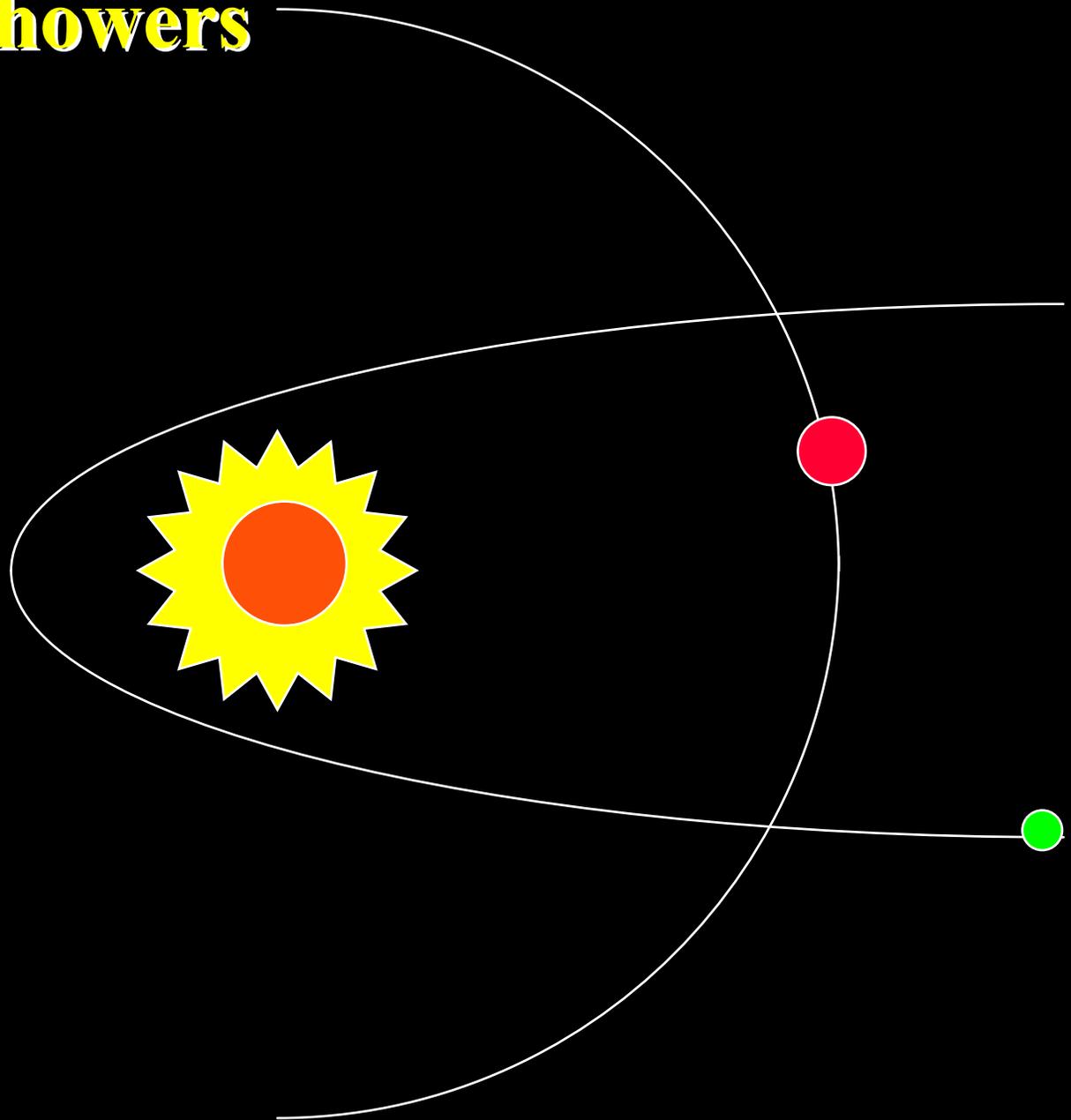
# Meteor Showers



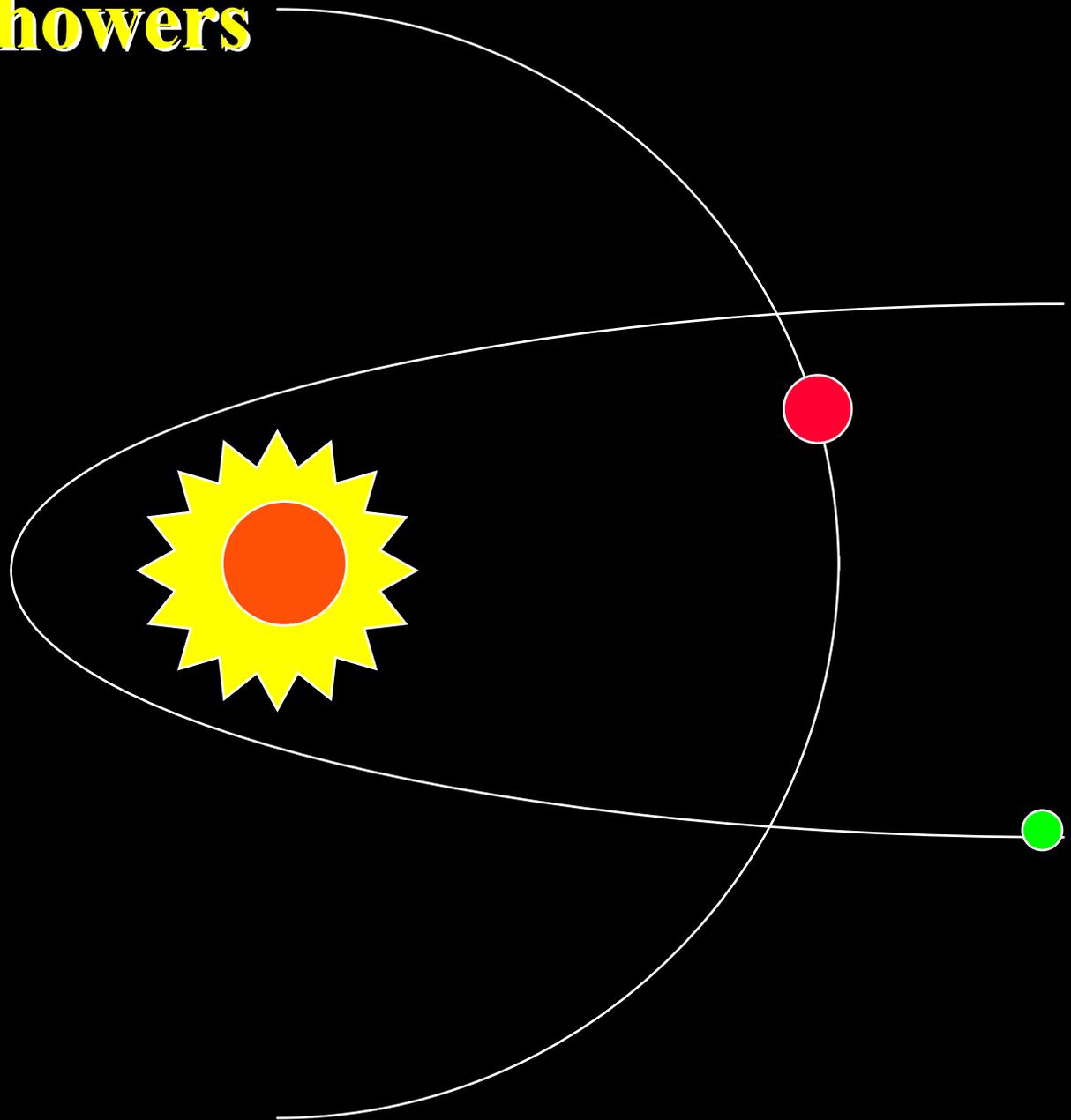
# Meteor Showers



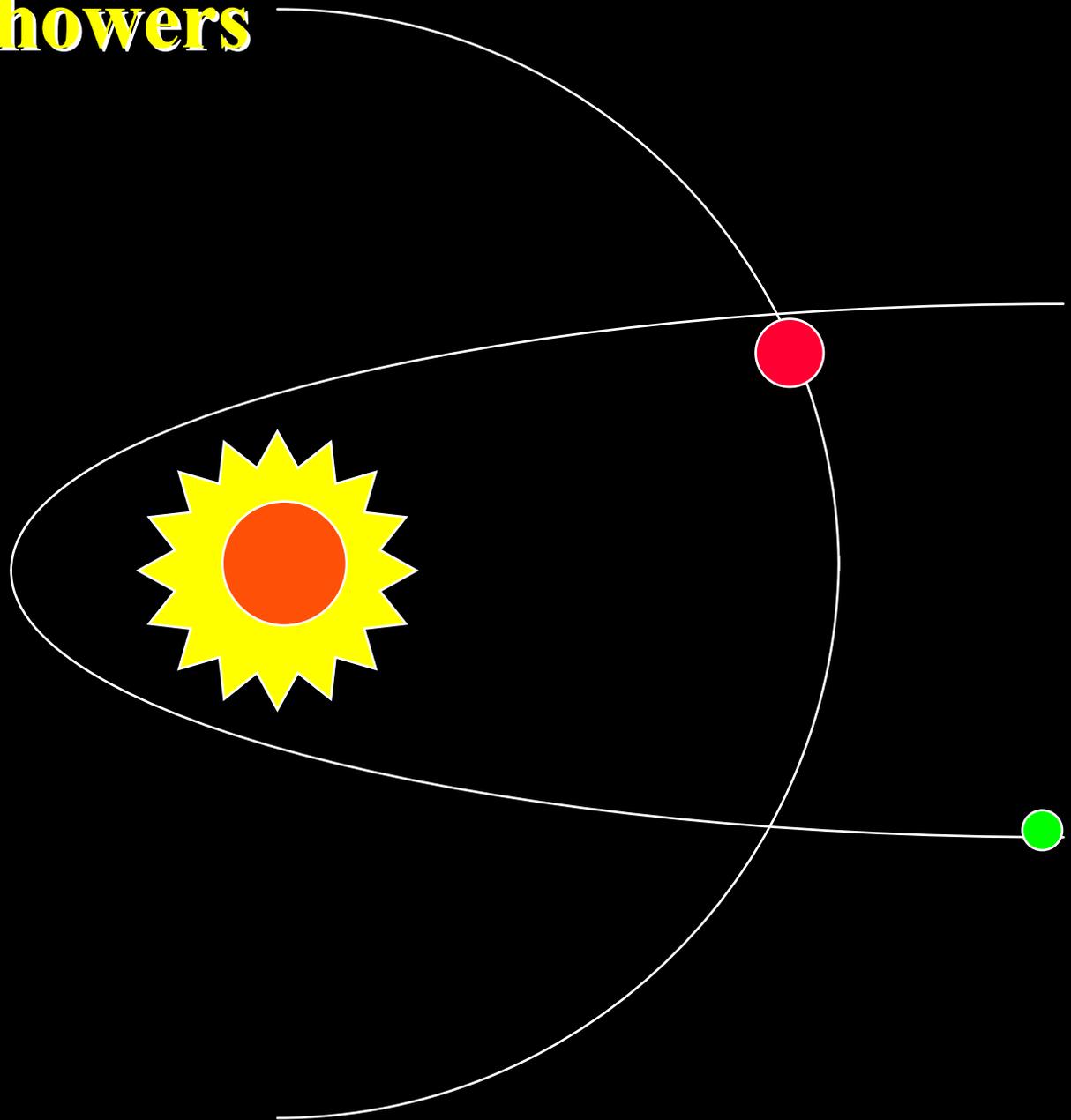
# Meteor Showers



# Meteor Showers



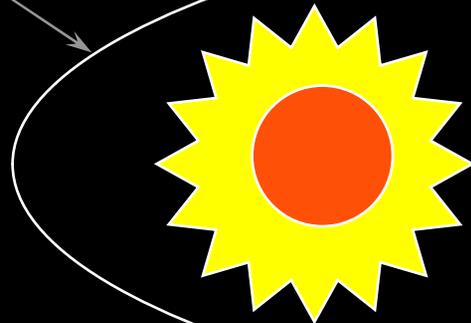
# Meteor Showers



# Meteor Showers

When the Earth passes through the Comet's Path - -  
there can be a meteor shower

Path of old comet



Meteor shower

Press the mouse or Return to Continue

Earth's Orbital

