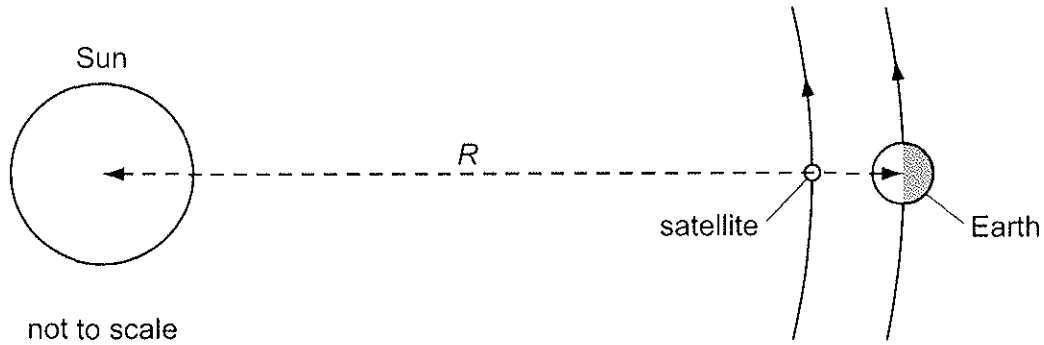


- 14 An unpowered artificial satellite called SOHO has been placed in a stable orbit around the Sun at a distance of  $0.99R$  from the Sun, where  $R$  is the orbital radius of the Earth. The satellite is always on the radial line from the Sun to the Earth so that it has a period of 1.0 year, the same as the Earth.



Which statement relating to the satellite helps to explain how it is possible for its period to be 1.0 year?

- A The gravitational field of the Sun at the satellite is reduced by the presence of the Earth.
- B The gravitational force of the Earth on the satellite balances the gravitational force of the Sun on the satellite.
- C The mass of the satellite is much less than the mass of the Earth.
- D The resultant gravitational force on the satellite is less than the gravitational force the Sun exerts on it.