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If the Sun suddenly became a black hole, what would happen to the Earth's orbit?

- A). The Earth would start a spiral into the Sun
- B). The Earth would fly off out of the solar system
- C). Depending of the mass of the Sun, the Earth's orbit would approximately double or be approximately half of what it is now
- D). The Earth would join all the other planets at the same radius from the black hole
- E). **Nothing**



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Which of the following is **not** evidence for the existence of Black Holes?

- A). The rotation speed of material around a central object
- B). Emission of large amounts of energy
- C). Radio lobes of active galaxies
- D). **A blackbody spectrum of photons**



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What causes QUASARS, which are very bright (a 100 times the energy output of a normal large galaxy) observed far from Earth?

- A). **Black holes**
- B). ISP209
- C). The Big Bang
- D). We don't know



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What does entropy have to do with time?

A). We think conservation of entropy explains time

B). It is possible that early in the big bang inflation created a universe with too little entropy. Hence, all process tend toward increasing entropy and give time a direction.

C). It explains why quasars cause time to increase.

D). We know of no connection whatsoever.

E). The second law says time must always decrease.



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What is our best guess on the current age of the Universe, and when will all the stars have burned out?

- A). **13.7 billion years, 10^{100} billion years**
- B). 137 billion years, 10^{10} billion years
- C). 13.7 billion years, 10^{10} billion years
- D). 1370 billion years, 10^{1000} billion years,
- E). 1.37 billion years, 10^{10} billion years