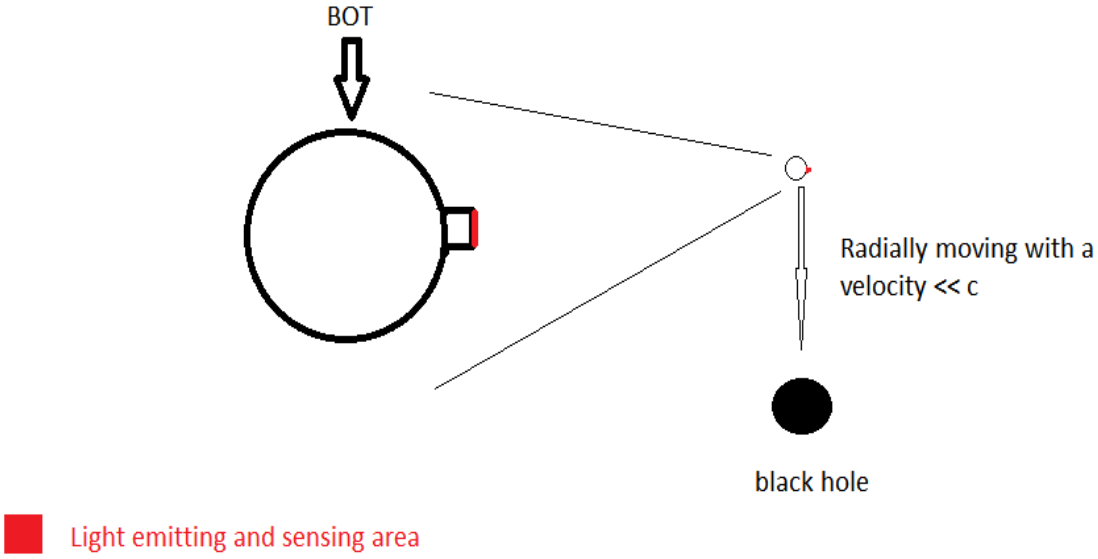
# *CELESTIAL INQUISITION 3*

An alien civilization has sent a small Spherical bot, made of Sterling Silver, fitted with a light emitter and sensor as depicted below, towards a black hole to explore the region around it. The bot moves slowly towards the black hole, radially into it. The light source emits light in such a way that it is tangential (at the pt. of emission) to a circle with 'centre of black hole' as its centre, and the distance between the black hole and the centre of the bot as its radius. The region around the black hole is free of dust or any other obstacle, and there are no other light sources anywhere nearby which can be perceived by the sensor.
Due to some malfunction, the sensor of the bot receives only those signals, which fall onto it radially.
What will be the last thing that the sensor records before it perceives the blackness of the black hole?
NOTE : The effect of gravity of any other bodies other than the black hole on the bot is negligible




---

→This question carries 15 marks.

→Please mail you solutions to:

ee09b009@iith.ac.in or Cephied.iith@gmail.com

Note: This is the last question of phase -1 of celestial inquisition. Phase 1 will end at 18 mid night