

$\frac{1}{2}$ ~~Not so~~

in the engine, that is the AGN, according to the model in book 3. It is also true that the upper limit on the size of the emitting region is proportional to the period of variations from that region. Hence if the period of variations is longer we would expect that the emitting region is probably larger. Yes but this is the observation See attached sheet

d) The radius of the event horizon is given by $r = \frac{2MG}{c^2}$

$$M = \frac{c^2 r}{2G}$$

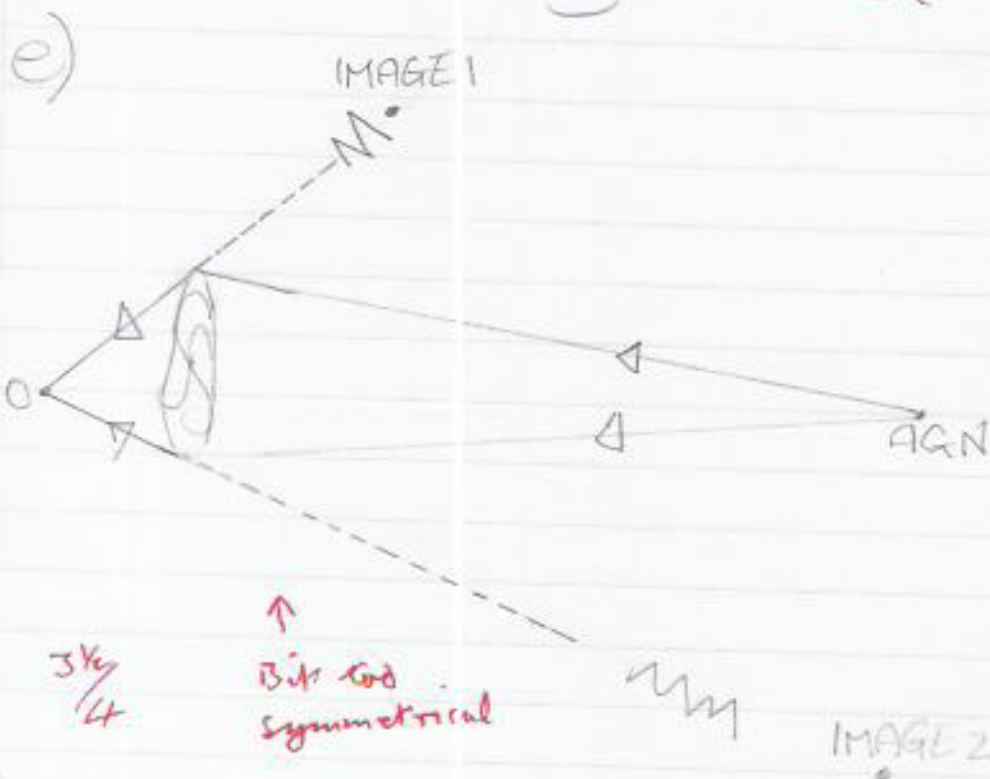
Since $r < (3.6 \text{E} 11 \text{m})/2 = 1.8 \text{E} 11 \text{m}$

$$M < \frac{c^2 \times 1.8 \text{E} 11 \text{m}}{2G}$$

$$= \frac{(3 \text{E} 8 \text{m/s})^2 \times 1.8 \text{E} 11 \text{m}}{2 \times 6.7 \text{E} -11 \text{m}^3 \text{kg}^{-1} \text{s}^{-2}}$$

$$= 1.204 \text{E} 38 \text{kg}$$

10^{38}kg (NOT 4 s.t.)



$\frac{3}{4}$