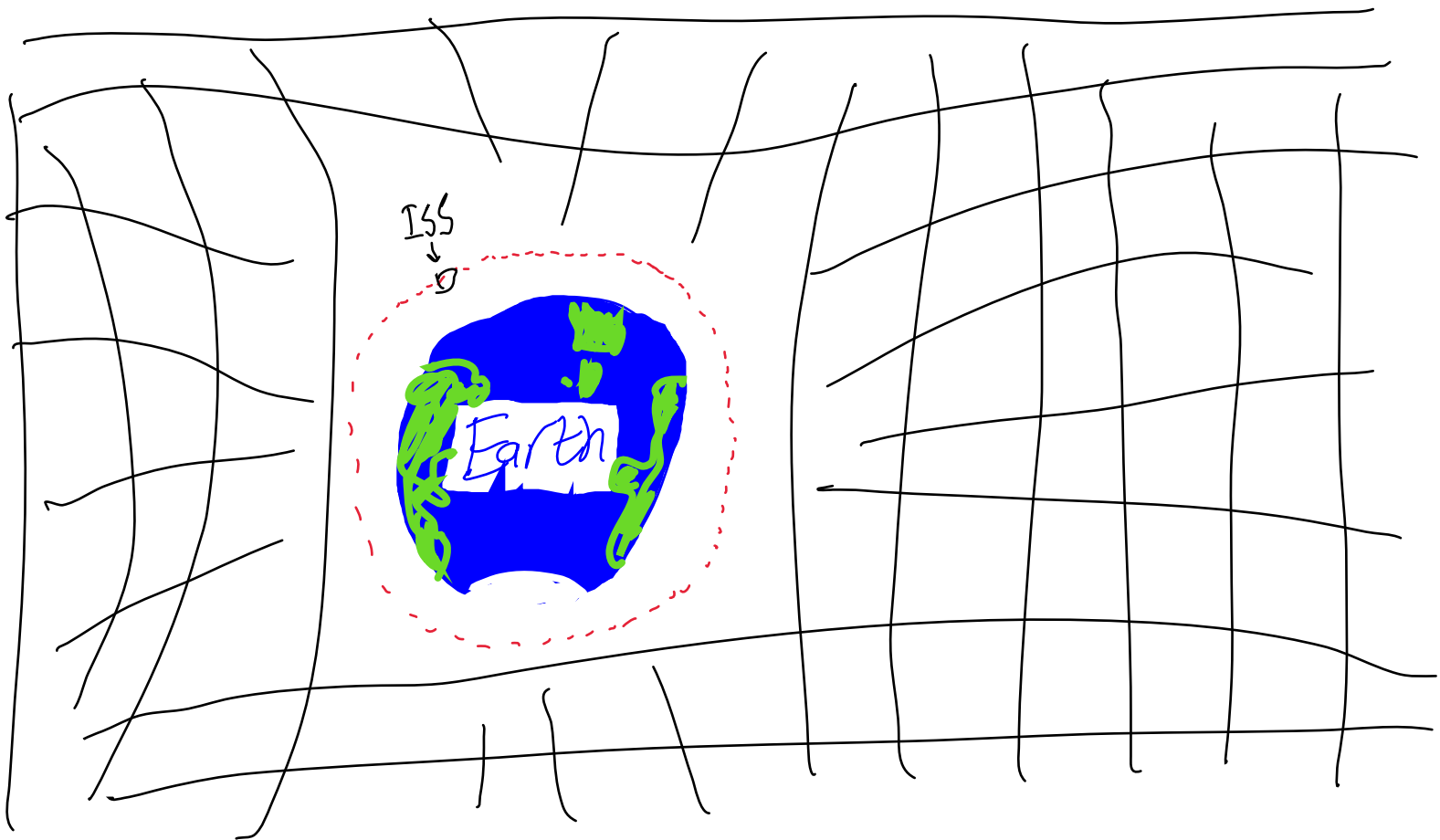


Spacetime curves in the presence of mass and is how gravity is propagated throughout space



Time dilation is the phenomenon where time ticks slower as the curvature of spacetime increases and time ticks at different rates for observers depending on their speed relative to each other.

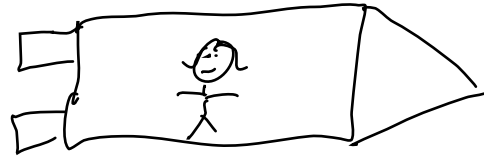
Intense spacetime
curvature b/c
of the Black Hole



time ticks
slower

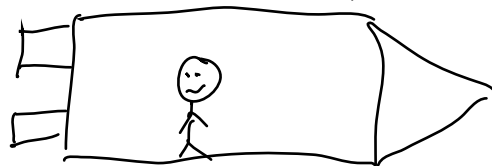


Going FAST



time
ticks
slower

NOT moving

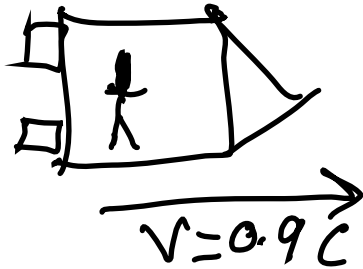
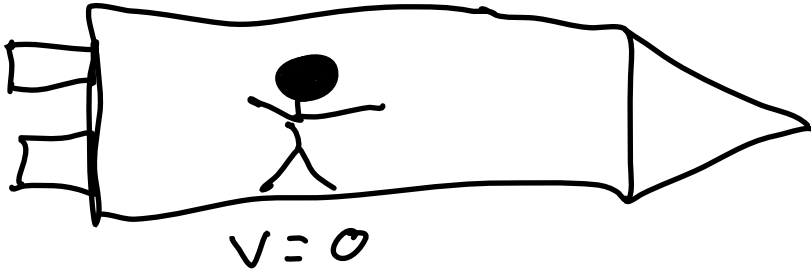


time ticks
faster

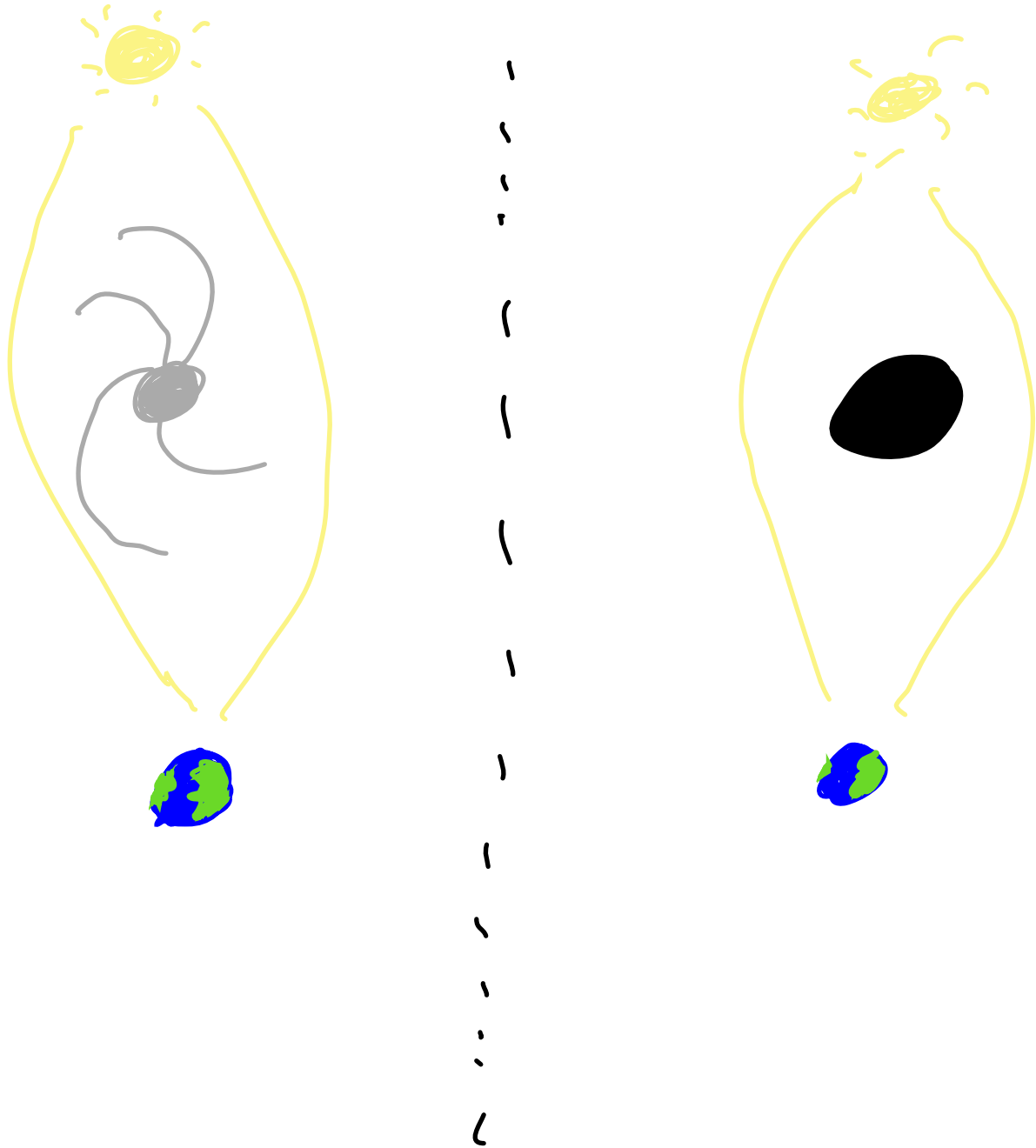


time ticks
faster

Length Contraction is the phenomenon where the apparent length of distances and objects significantly shrinks as they approach near the speed of light



Gravitational Lensing is the phenomenon where light bends around a massive object like a galaxy cluster or a black hole



The singularity is what lies at the center of a black hole and is the point where all the matter that enters the black hole will inevitably end up.

The Accretion Disk is a disk of super-hot gas and dust swirling around the black hole at a significant fraction of the speed of light.

The Photon Sphere is the region around a black hole where light can orbit , albeit unstably, around the black hole

The Schwarzschild Radius is the radius an object needs to be compressed into to form a black hole

The Event Horizon is the region of space where no light can escape due to the immense curvature of spacetime