General Relativity

1) Accelerations distort spacetime.

2) Accelerations cause:

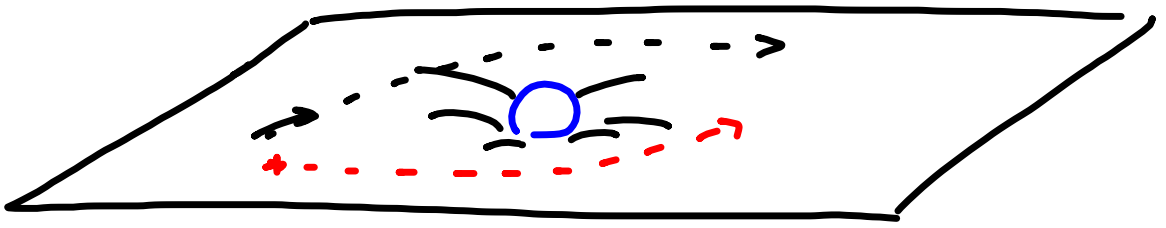
- Time to tick more slowly.
- Space to be contracted.
- Mass to increase.

3) Gravity is an acceleration.

Of everything you're seeing in the film, this part is the most well-confirmed by direct evidence.

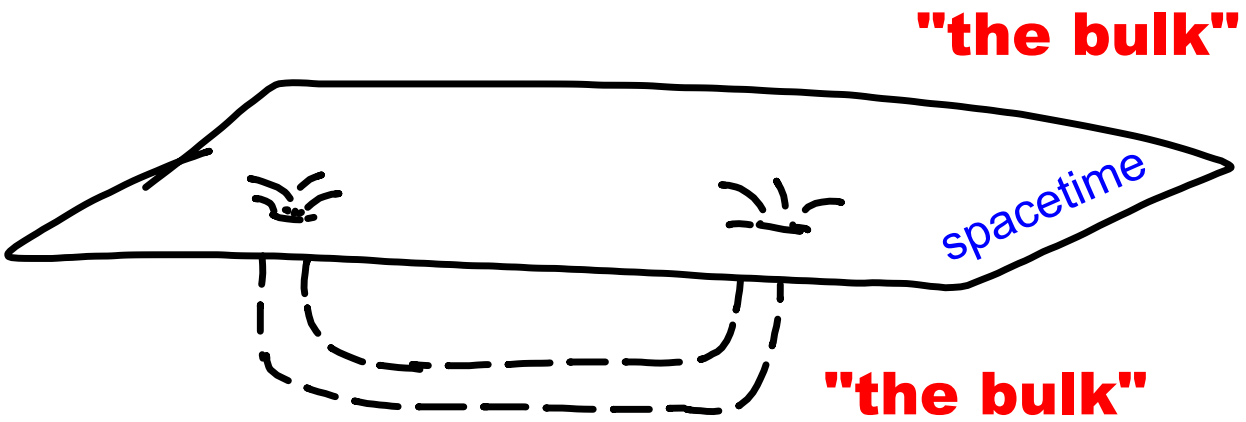
Gravity bends spacetime

The path of light and moving objects are bent by it

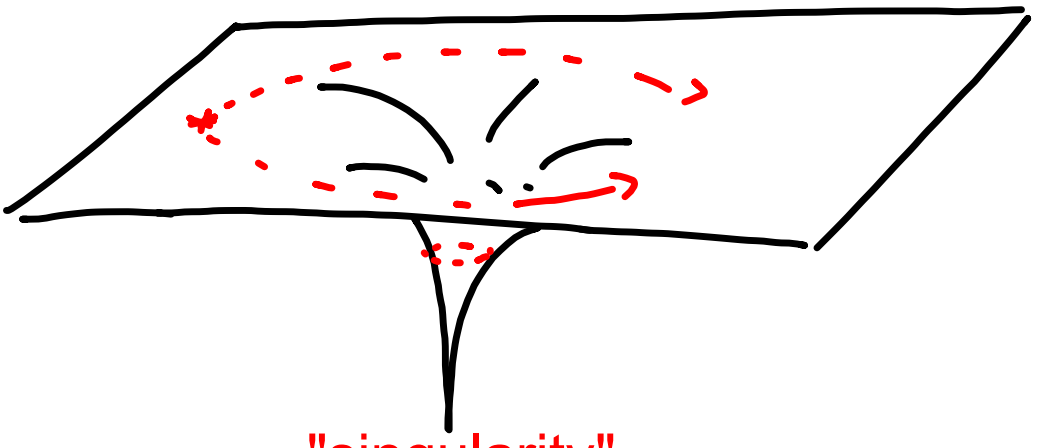


What is a Wormhole?

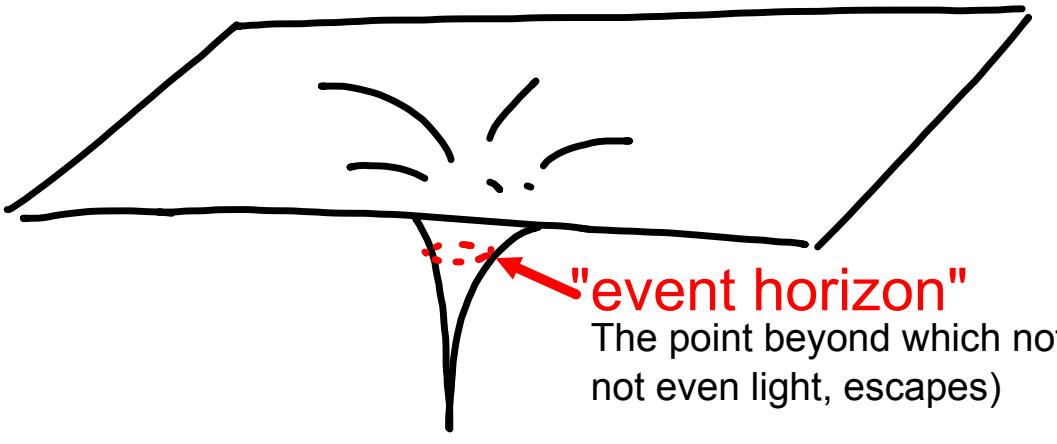
A shortcut outside of spacetime.



Black Hole



Black Hole



"event horizon"

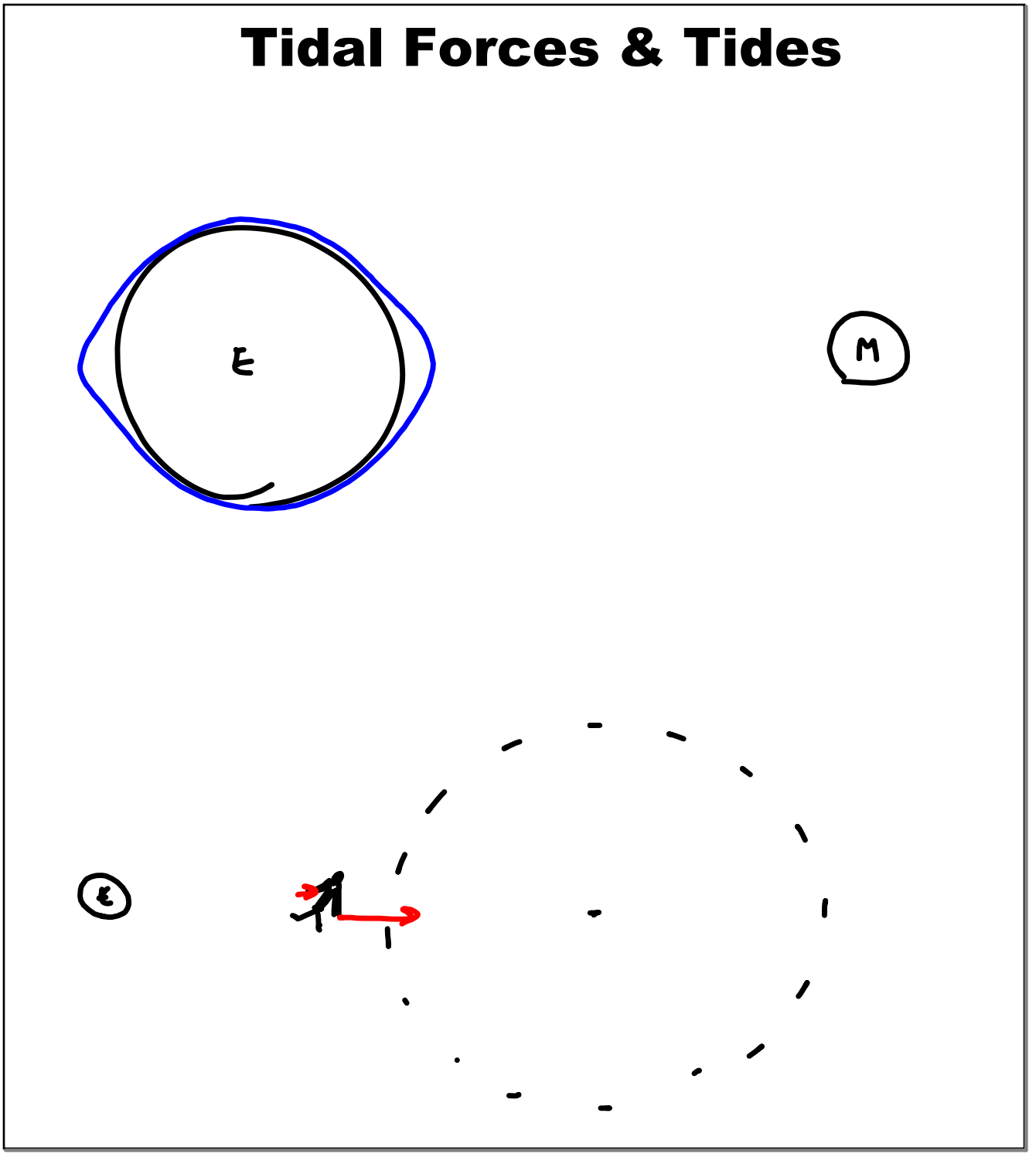
The point beyond which nothing, not even light, escapes)

"singularity"

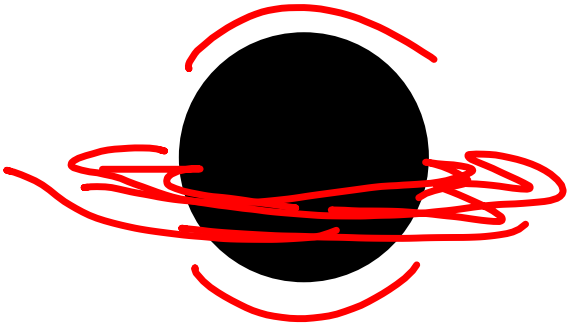
The original star collapsed down to... no one knows how small.

What would happen to you if you fell into a Black Hole?

Tidal Forces & Tides



As things fall into the black hole, they also speed up and get hot.



RELATIVITY

gravity, spacetime, and the very large

QUANTUM MECHANICS

atoms, orbitals and the very small

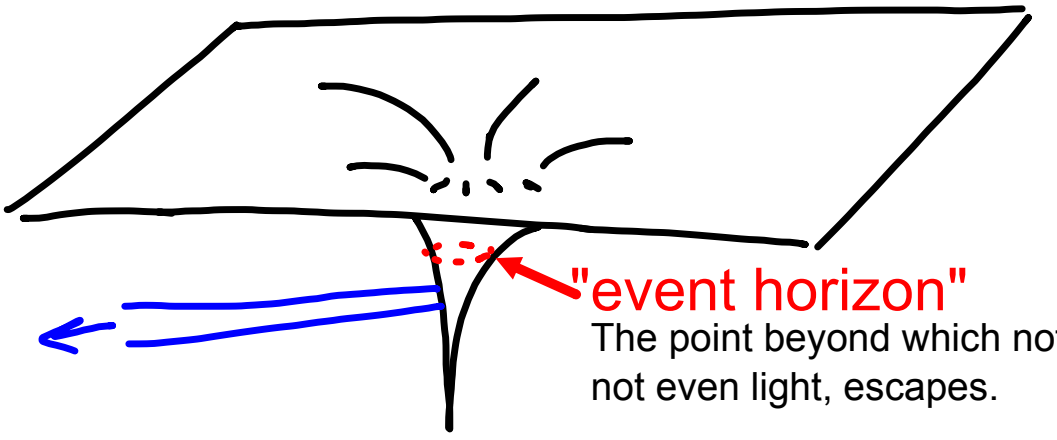
Both work, but they don't work together.

Either one is right and the other wrong, or there is a greater theory that overrides both.

One way to know would be to investigate a place with very strong gravity, but very very small.

Like the Singularity of a Black Hole.

Black Hole



"event horizon"

The point beyond which nothing, not even light, escapes.

"singularity"

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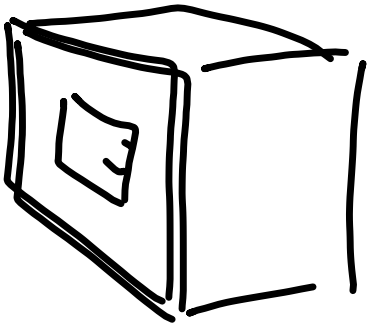
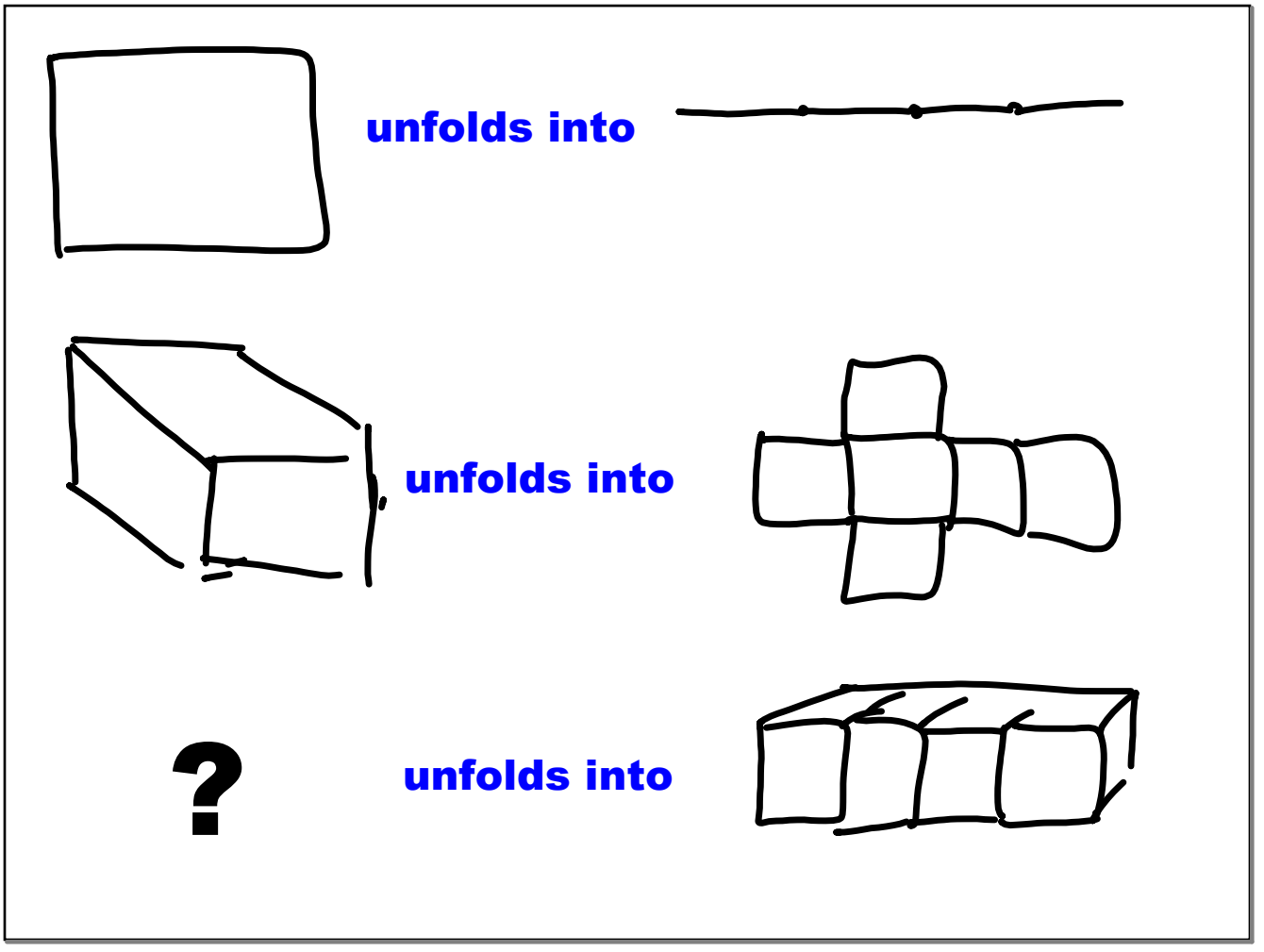
What if you wanted to show Arthur Square the 3D universe?



You would have to unfold it for him.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