skipped nucleosynthesis in detail due to snow.

contrary with relatively as it is needed for understanding

g of large scale universe.

"Einstein's system" = freely falling

as a consequence

⇒ time elapsed at different rates at different

heights.

\[ g \approx \frac{10^{-16}}{m} \]

light leaving surface will be

red shifted.

Earth

clocks on satellites of 100 km will be an order of

more times faster than clocks on the ground

relativistic difference of 22 km will be an order of

2.16


\[ R_s = \frac{2GM}{c^2} = 3 \text{ km} \]

\[ \Delta t_{\text{local}} = \sqrt{1 - \frac{R_s}{r}} \Delta t_{\text{far}} \]

L Event Horizon

we "see" objects falling through event horizon "frozen

on the surface of horizon".

an observer falling through the horizon does not perceive

anything special.
Bending of Light back to the elevator

observer inside elevator see straight path

\[ \Delta t = \frac{w}{c} \]

observe external see light at the same point so the light must have fallen as well following a curved path.

\[ w = R \cos(\theta) - 1 \]

approx. \( = -1/2 R \theta^2 \)

\[ w \approx R \theta \Rightarrow \theta = \frac{g}{c^2} w \]