Relativity
Atmospheric muons
Light clock

Speed of light is *constant*
Online course of the future

Student A

Student B
Light clock (student A homework)

tick,  
tick,  
tick,
Light clock (student B homework)

tick…
tick…
tick…
tick, tick, tick,
Takeaways

• Everyone see’s their clock (time) as normal

• Everyone else’s clock is running slow (if there is relative motion)

• They’re both right
Simultaneity
Simultaneity

- Different observers will disagree on which event happened first
- No such thing as absolute time everyone agrees on
Doppler shift
Looking back in time
Special relativity review

• Speed of light is constant… which means

• You see other’s clock as running slow

• Different observers disagree on which events happened first, so no absolute time

• Light color can doppler shift (blue coming towards you, red going away)

• We see distant objects as they appear in the past
Measuring distance with light