

Nov 12, 2025

- Topic Ideas
- Wormholes
- Black holes
- FTL travel
- something physics

Nov 15, 2025

Topic Idea: Why FTL is impossible

- look at Alcubierre drive ideas

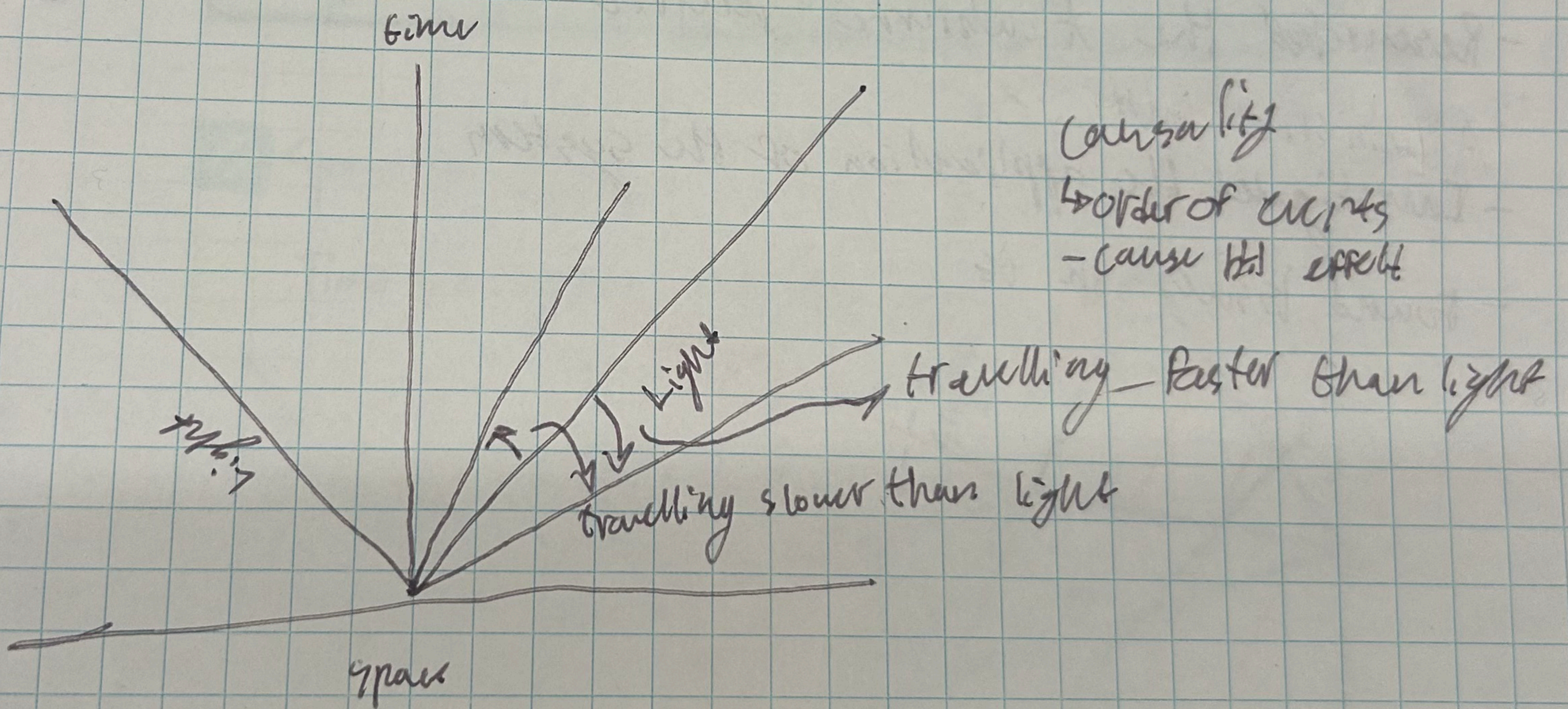
↳ Minkowski diagrams? ↳ Investigate

Nov 22, 2025

Minkowski diagrams

↳ used to represent inertial frames

- has a time and space axis




lines w/ \angle that is $<$ light flips axes, causing violation on causality

Nov 26 - Dec 1

Speed of light can't be exceeded
↳ Doesn't apply to expansion

Researched the Alcubierre Alcubierre Drive
Warp drive

- warps space around it
pressure differential



Dec 5 - 13

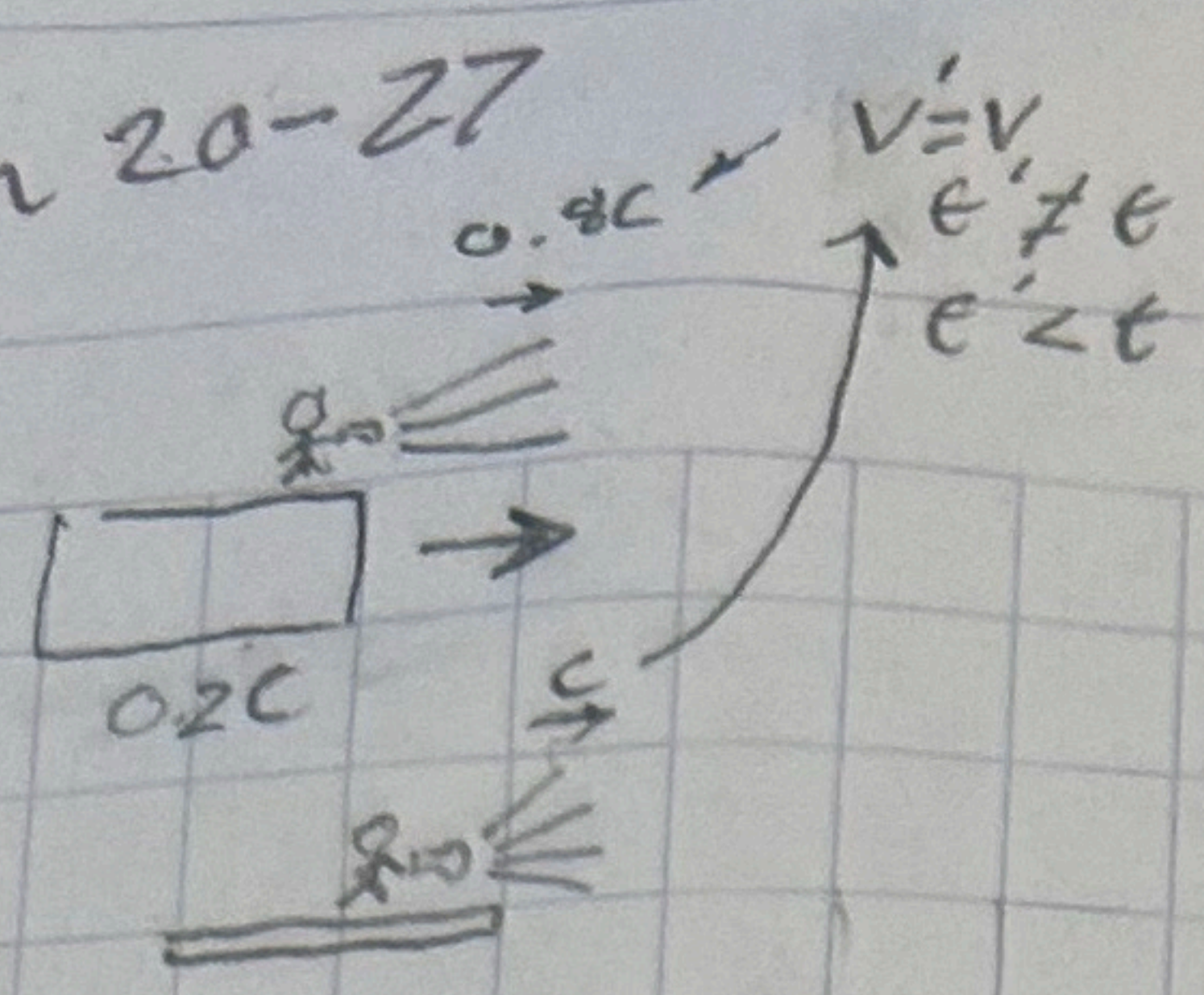
- Researched the Alcubierre metric

Alcubierre metric

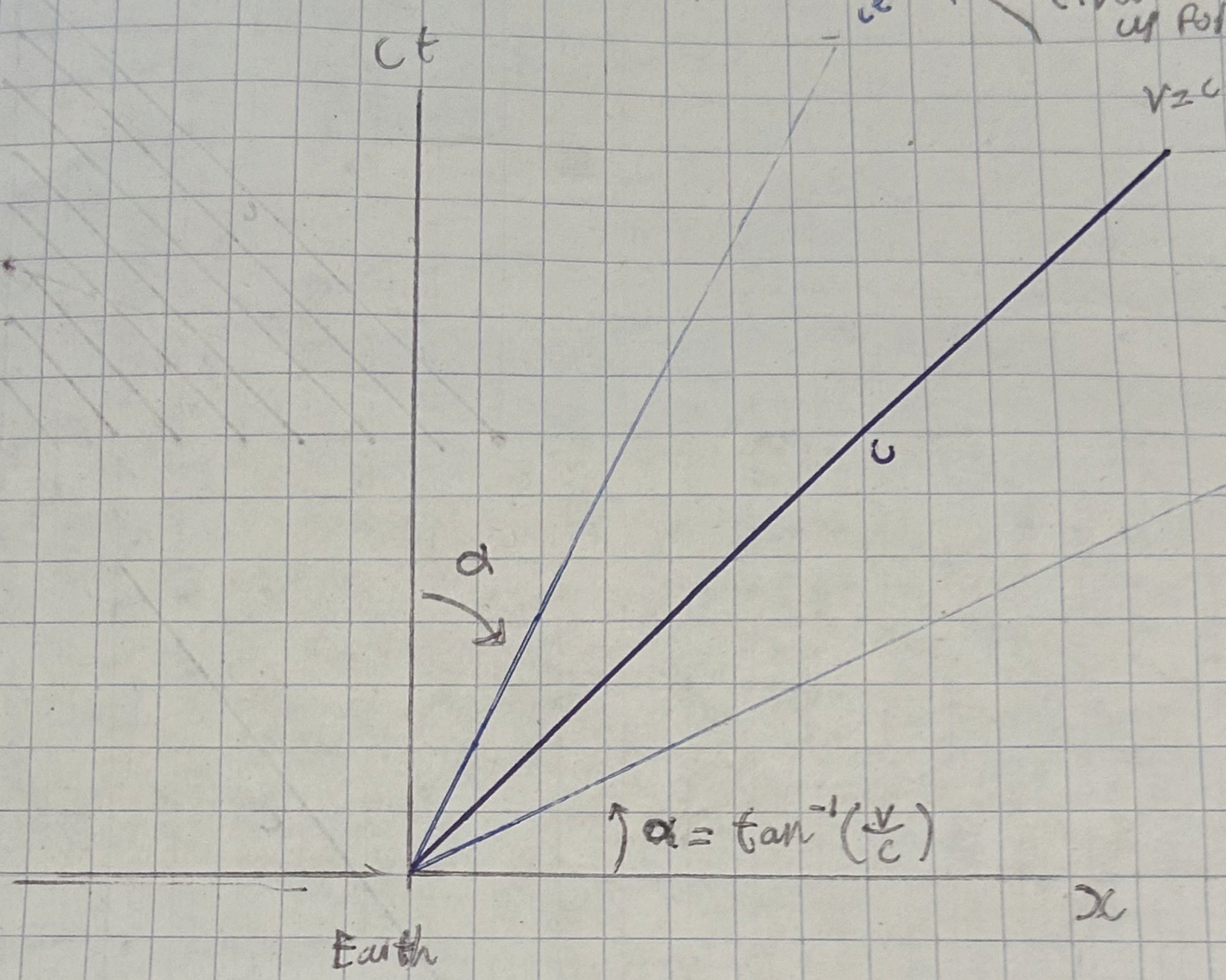
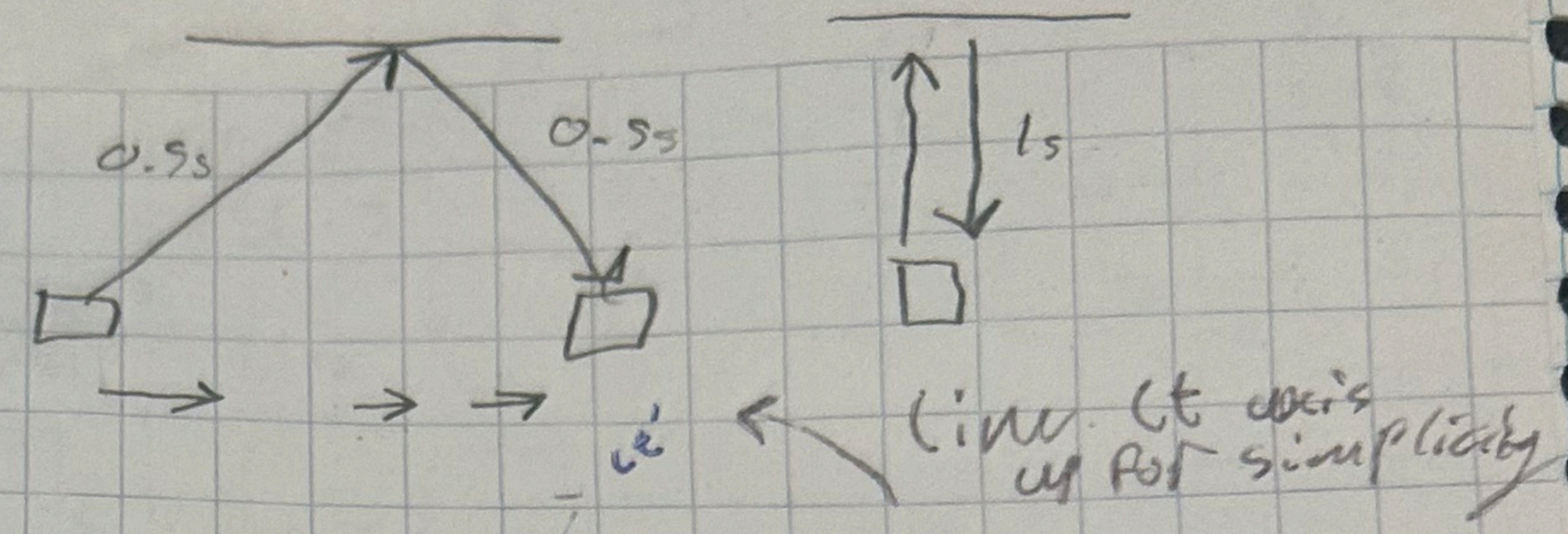
- Investigated the application of the system

- Found issues in it

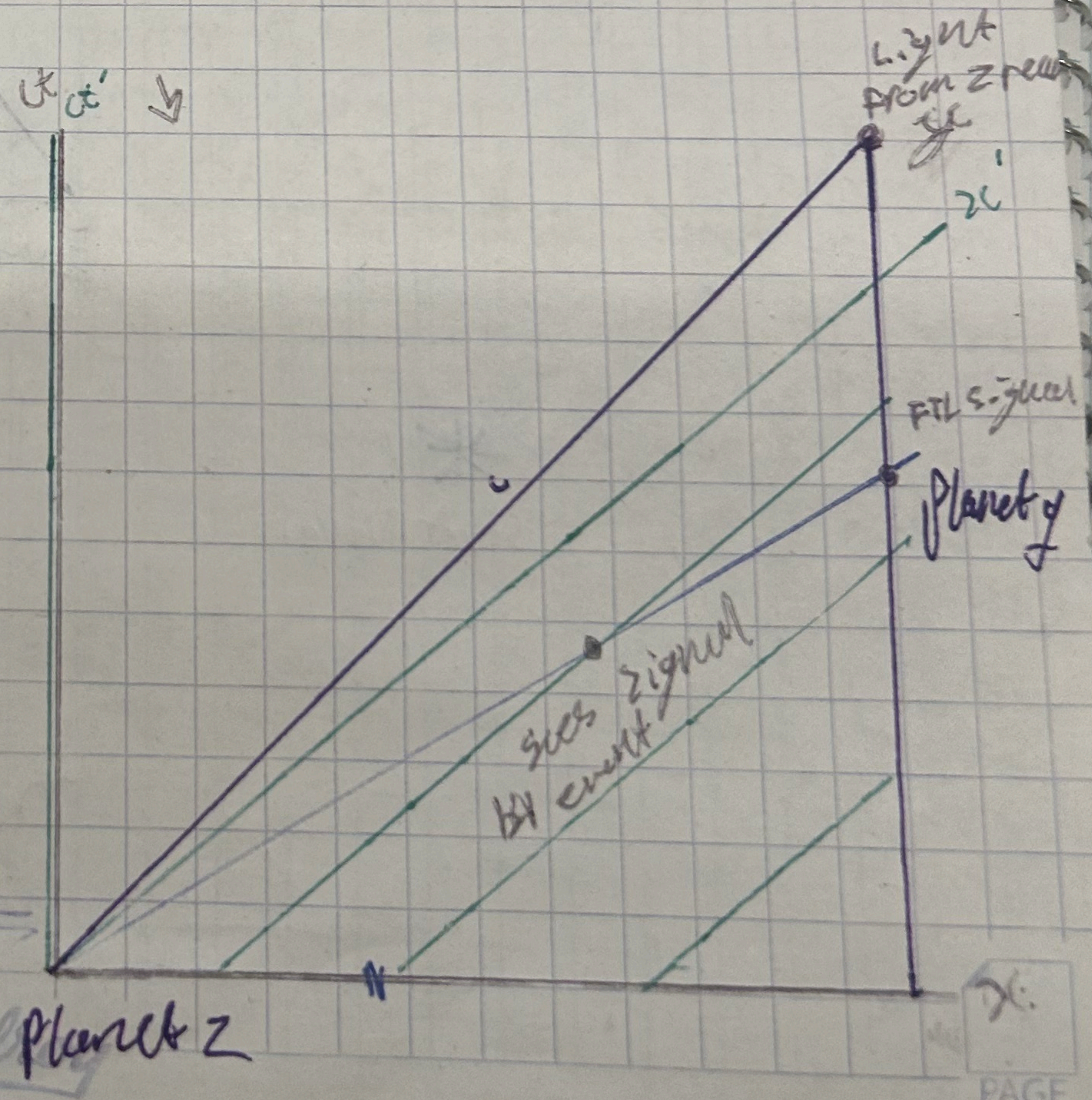
Jan 20-27



Feb 6, 2026



v : relative velocity between frames



Feb 1

- Researched wormholes
 - ↳ Einstein-Rosen Bridges
 - ↳ Morris-Thorne solution
- Investigated issues in worm holes

Feb 4

Negative energy densities
↳ Anti exotic matter

- Two multi-particle states or one $e^- p^+$ pair

Feb 7

Quantum fluctuations
↳ Casimir effect

Investigated validity/usability
of GR dark energy

Feb 8

Rewrote Universal Speed Limit section

Rewrote Time Dilation section

Feb 9-10

- Rewrote Alcubierre drive section
- Reduced the mathematical formulas

Feb 11

- Expanded Minkowski first explanation
- Light cones, time like vs. space like intervals

Feb 12

Rewrote wormholes section

^{added}
↳ comparison to warp drive

Feb 13

- Decided which concepts to disclose
- Finalized research question

Feb 14-16

Wrote the 1st analysis section

- Rephrased causality + space time
- Added Alcubierre metric + energy considerations

Feb 17

- wrote analysis section part 3
↳ normative causal violations

Feb 18

- wrote conclusion
↳ Restated hypothesis + outlined broader implications

Feb 19

- Integrated all sections + transitions

Feb 20

- Added Minkowski diagram

Feb 21

- Added warp bubble diagram

Feb 22

- Did a full read-through
- Grammatical fixes

Feb 24

- Added formal citations

Feb 25

- Added intere citations

Feb 26

- Did a grammar check + added clarity
- Simplified overly technical sections (causality violations)

Feb 29

- Proofread

March 1

- Final read through

March 3

- Added info to the CYSF site

March 4

- Finished log book
- Submitted