Week 6 Report

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- Week 5 implemented ‘hllc’ solver due to relative stability. Tested ‘roe’ solver (Linearized Roe Riemann solver).
  - In running a simulation from t = (0,2 s) (B-field commented out), saw no noticeable difference in pressure/density out to ~0.2 s.
    - At ~0.2 s the simulation developed NaNs and computation halted.
    - There’s a Google Group dedicated to researchers implementing the PLUTO Code, and some have reported that ‘roe’ is not well suited to astrophysical systems. This further supports the notion that solvers have various strengths and weaknesses, and that not all will simulate a system with precisely the same results. The issue I see is that it seems a bit “guess and check” to determine which methods give me result I would expect, which is certainly not the most scientifically robust practice.

- With the hllc solver in place, uncommenting the poloidal B-field and running the simulation quickly leads to NaNs during computation.
- Coded Toroidal field to complete magnetic field structure, re-running the simulation still leads to NaNs.

- Nvidia drivers updated for ‘research-computer-1’ to “nvidia-driver-396”.
    - Seems to be working well, no screen flashing anymore.