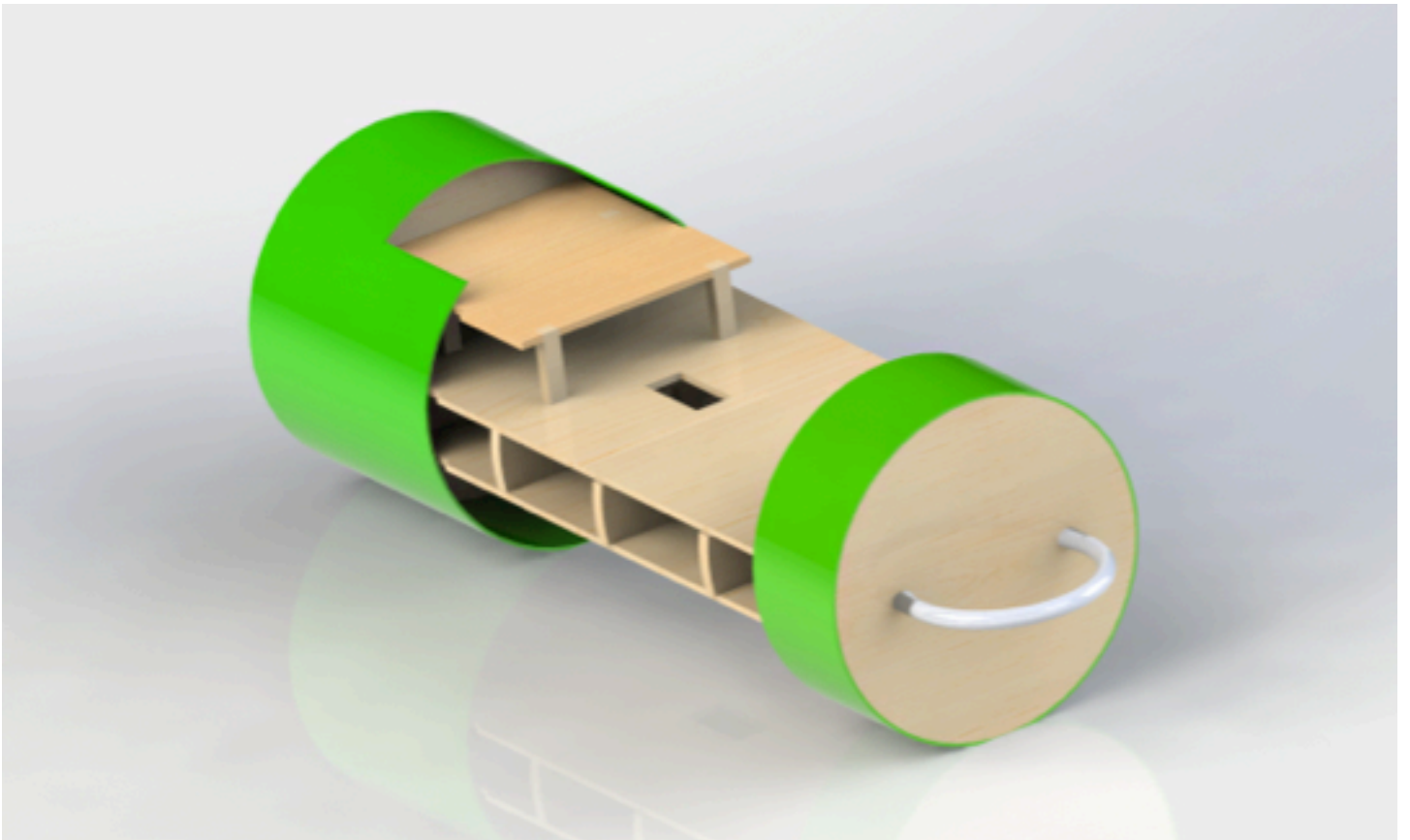


Top left: Schematic of the nose cone, complete with 5/16"-18 threaded rod core and several sealed bulkheads. The space is filled with 5:1 expanding foam for rigidity. **Top Right:** The alignment plate just below the nose cone coupler mount; epoxy joins the coupler to the nose cone. **Below:** Aft of the nose cone prior to eyebolt installation.

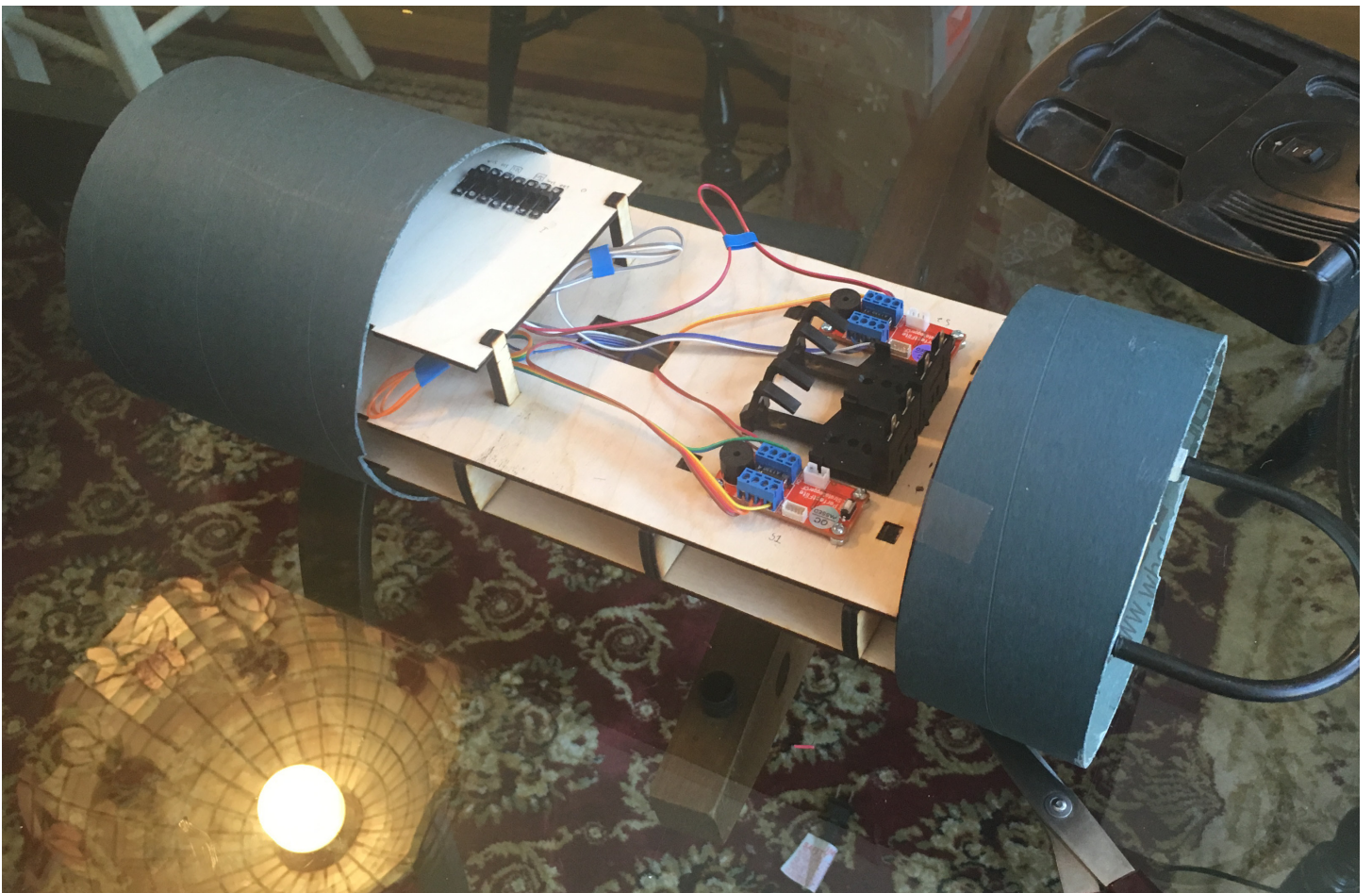




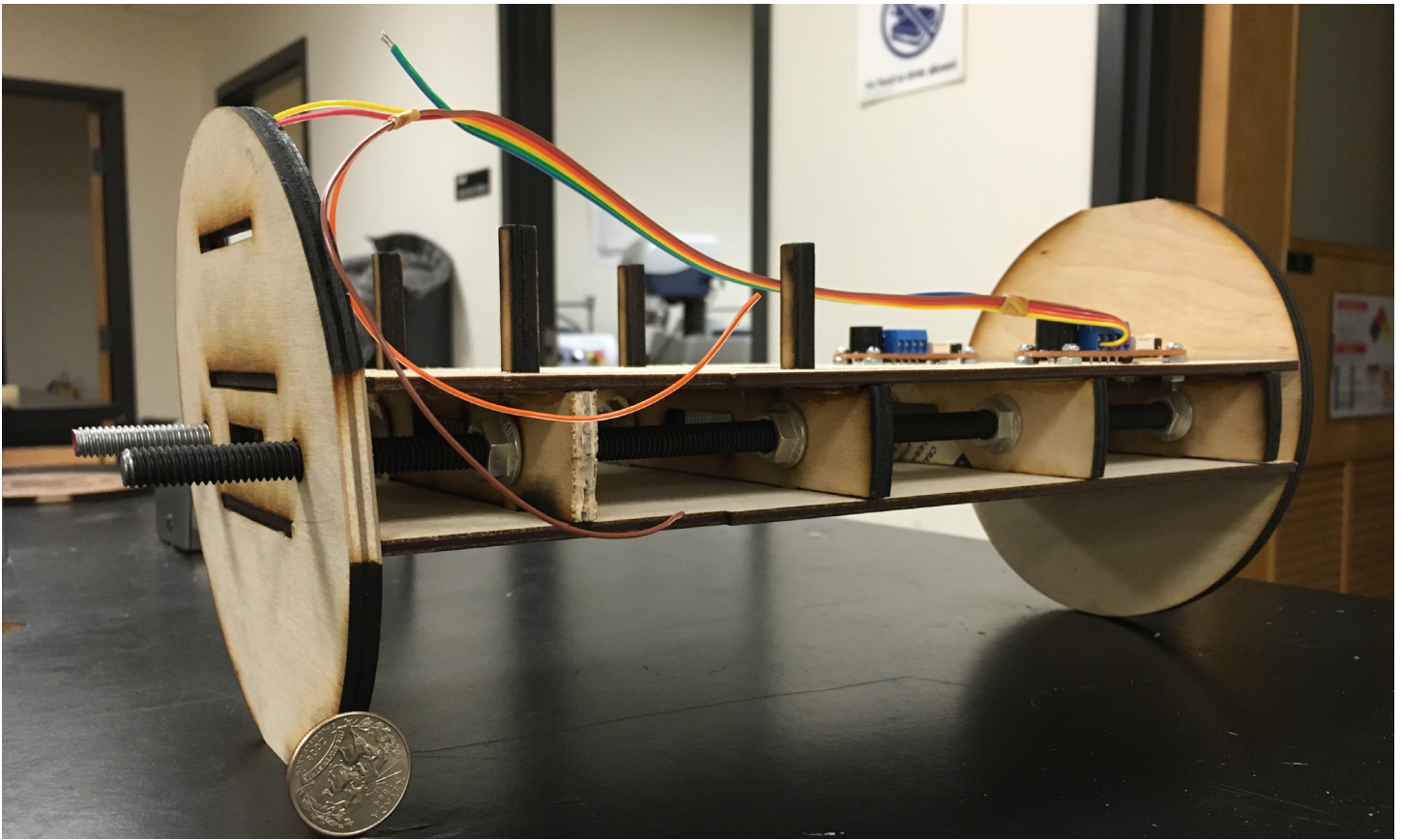
Left: Attachment point of the nose cone. A 5/16"-18 coupler joins the threaded rod and the eyebolt; heat locking threadlock is used to ensure a tight fit that will not unscrew due to vibrations (a swivel will also be used to prevent unscrewing the eyebolt).



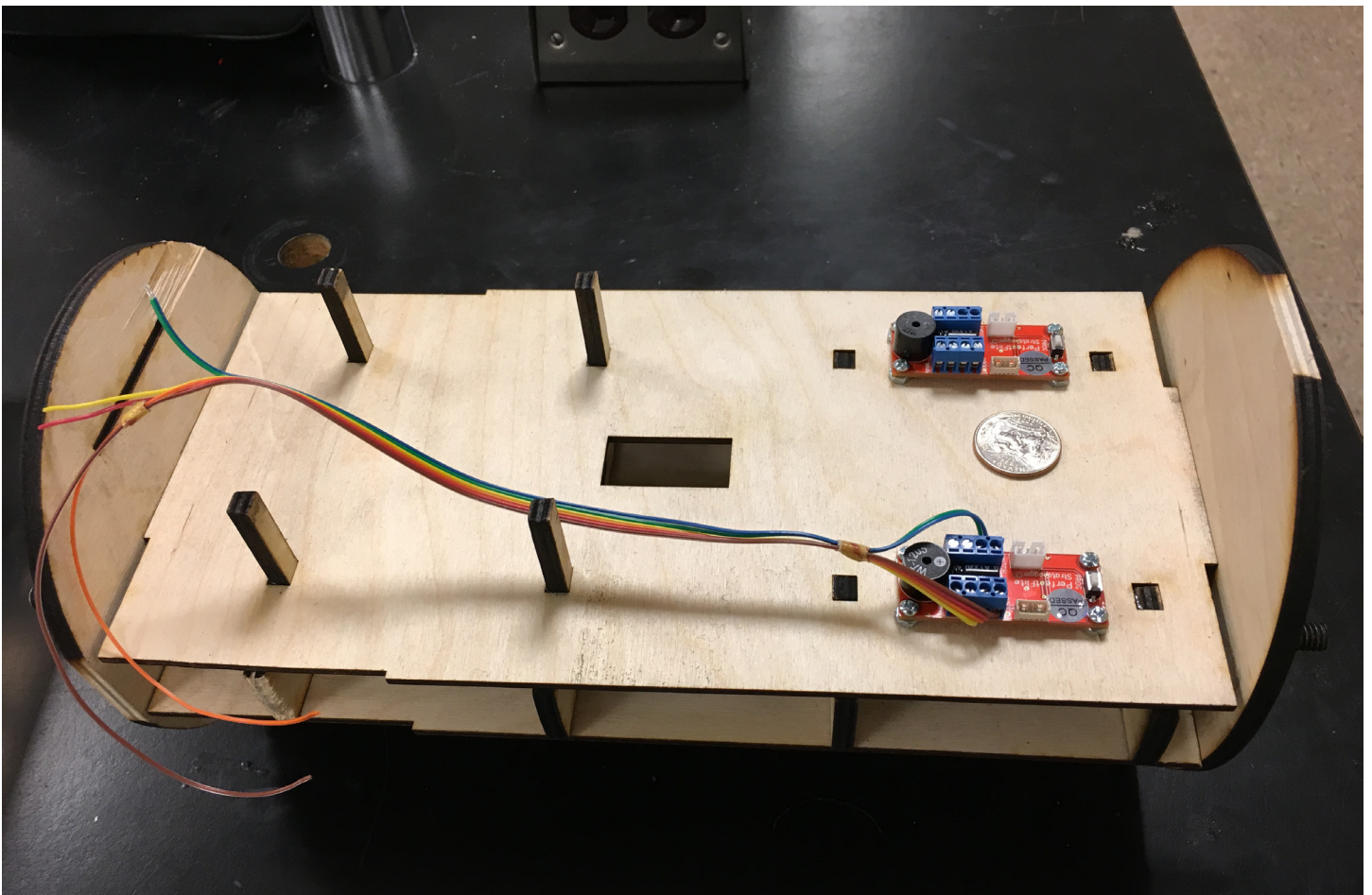
Avionics bay mock up in SOLIDWORKS: files used for laser cutting



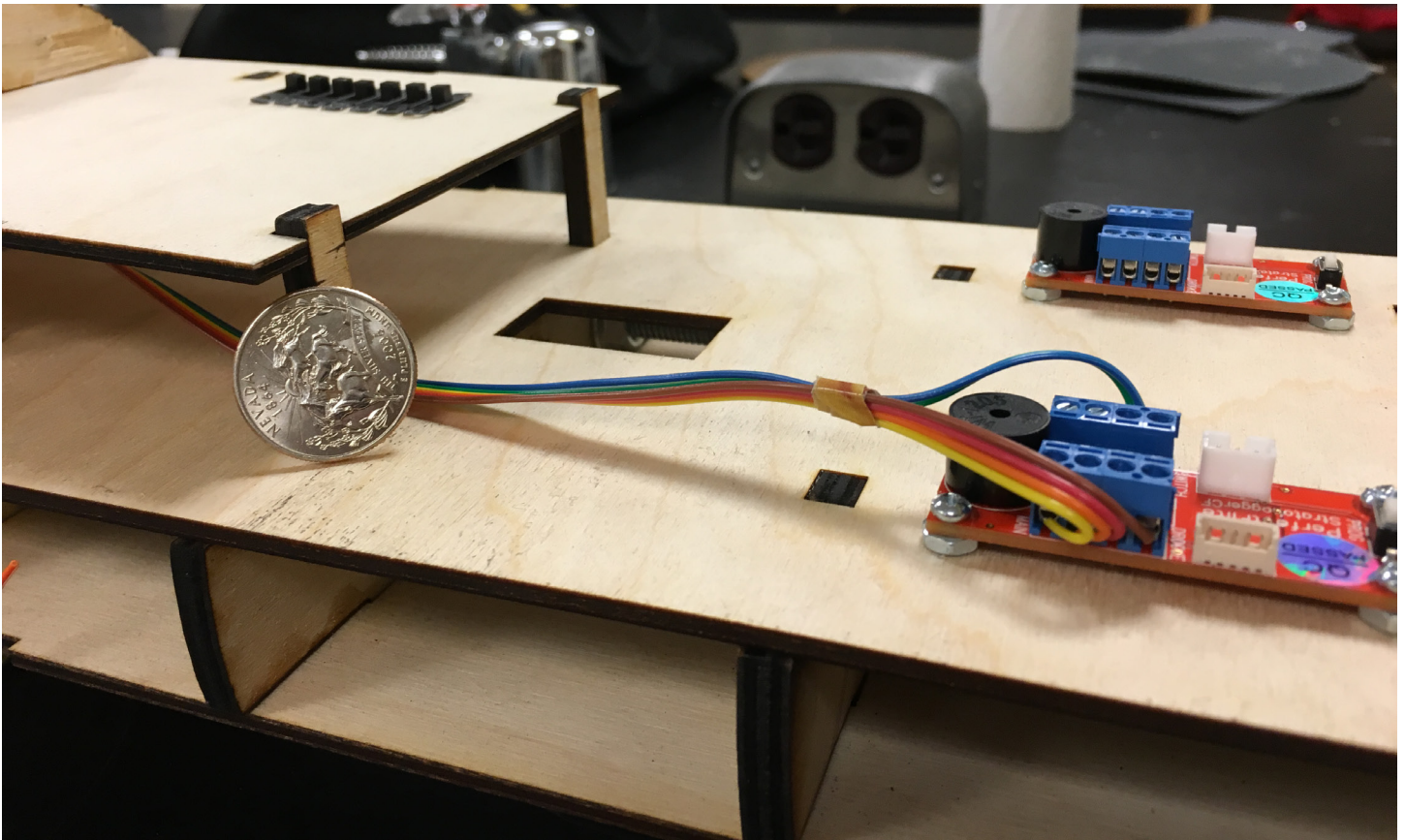
Finished avionics bay



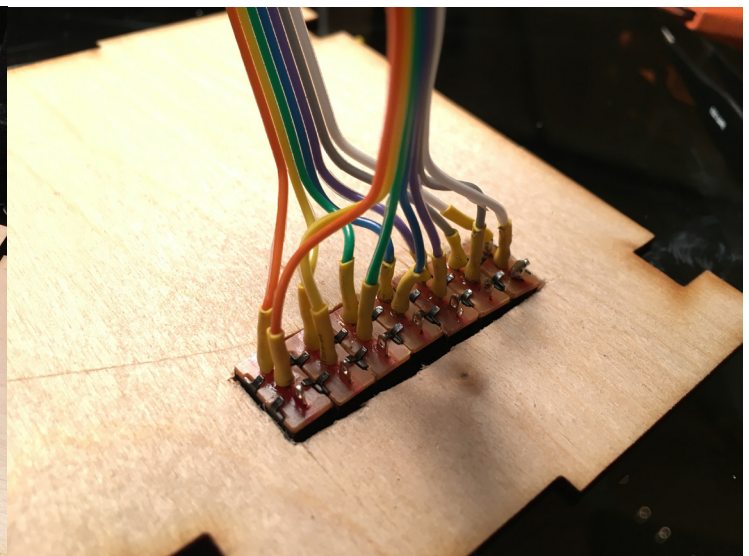
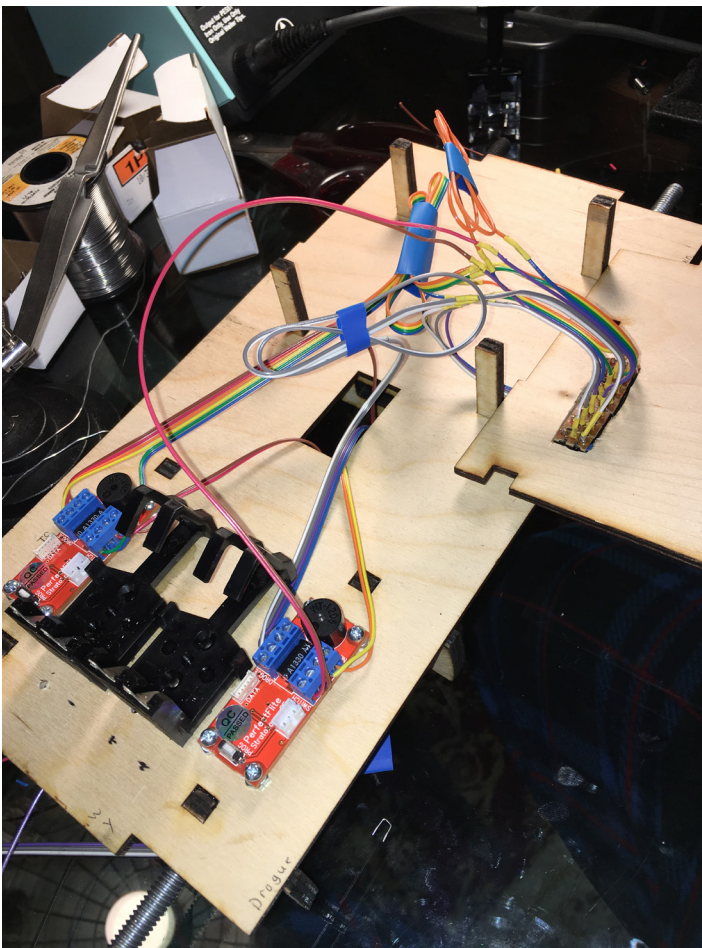
Side view of bare electronics bay, threaded rods visible running through the middle



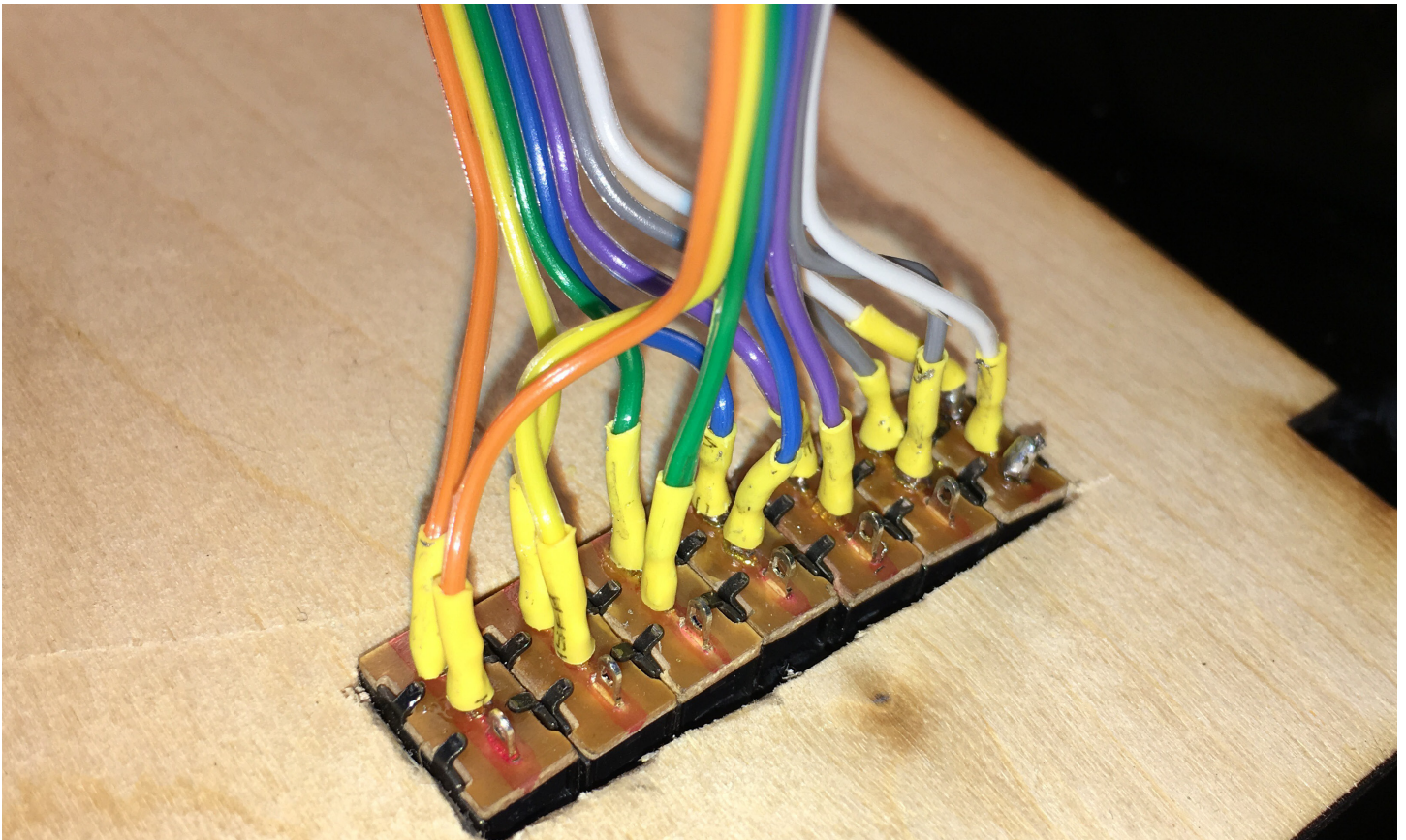
Stratologgers attached



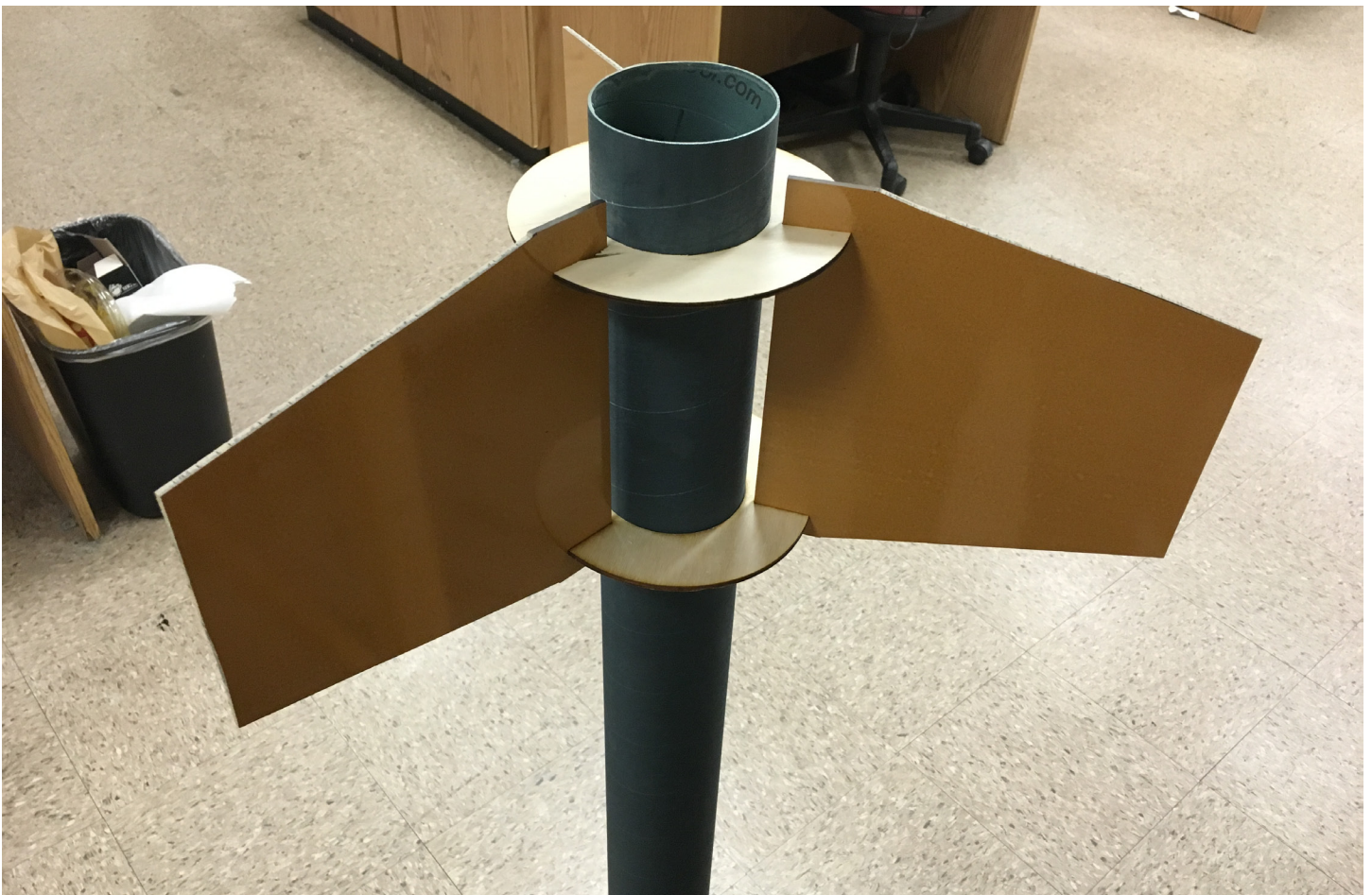
Switch platform mounted and first set of wires running to them



Left: Wiring of Stratologger before wire management.
Top: Wiring of the switch assembly. Nine color ribbon cable was used to keep things organized, and made keeping track of wires easy. There is plenty of space on each platform for the addition of extra sensors or electronics later.

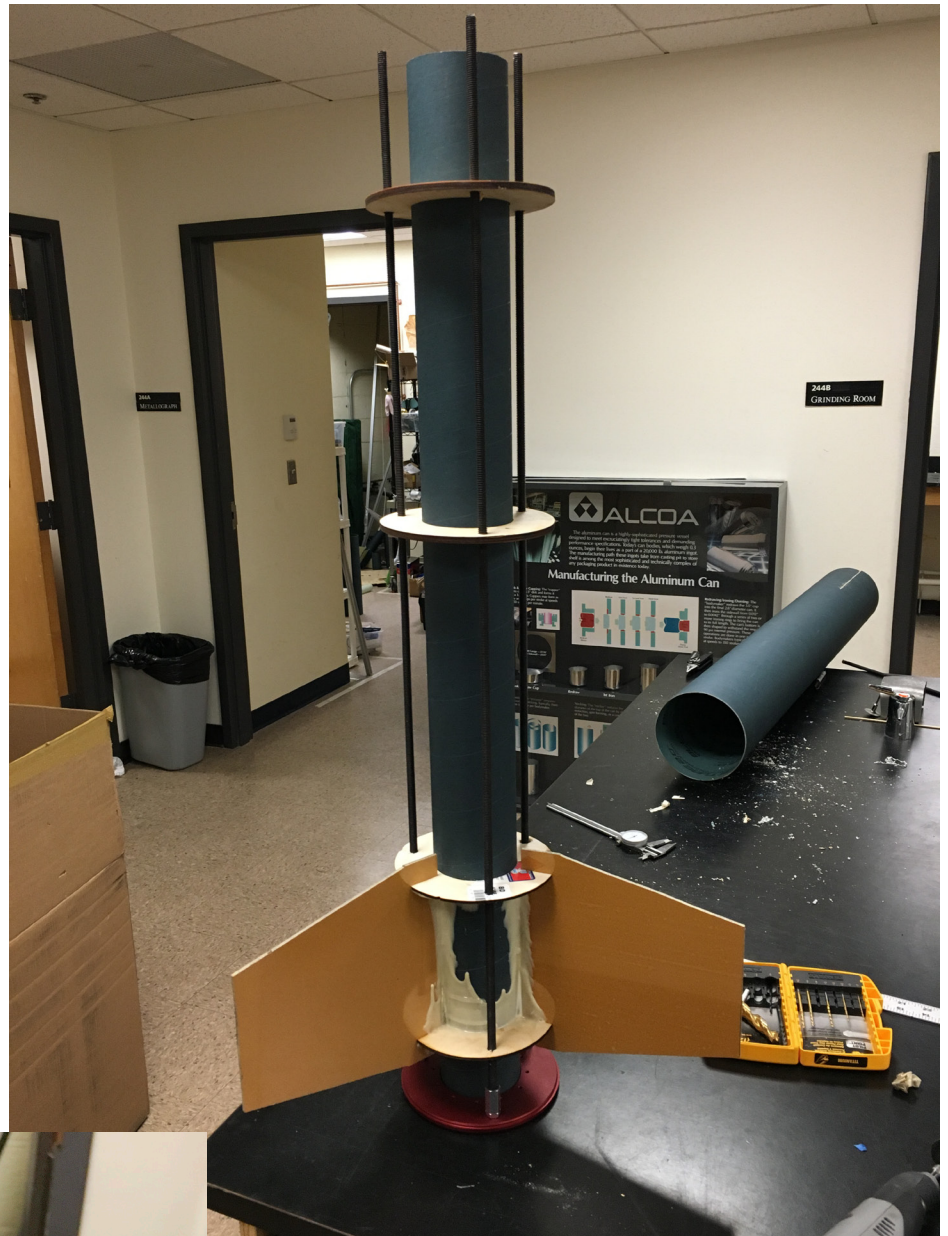


Close up view of the underside of the switch assembly.

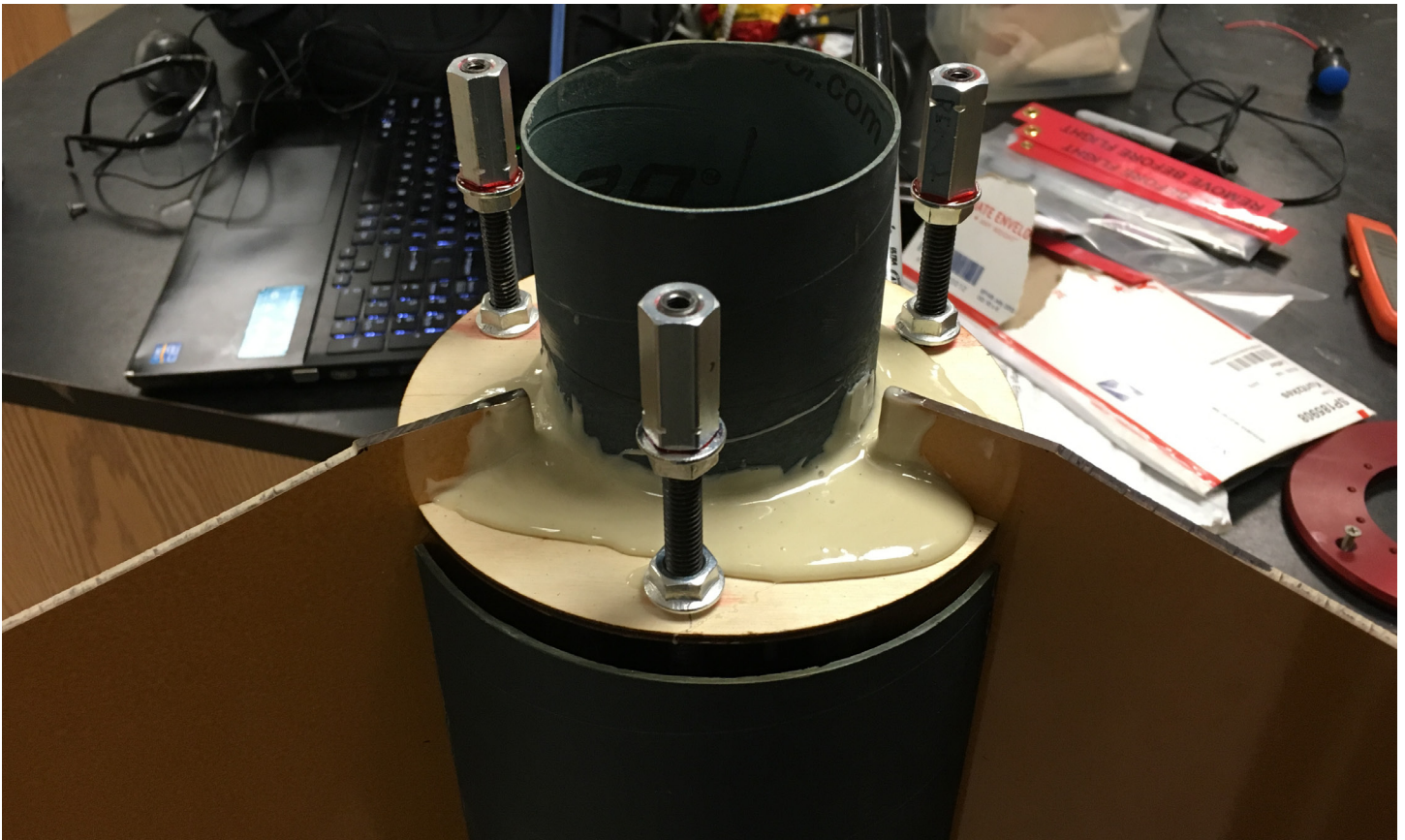


75mm motor mount tube with fins dry fit into into the centering rings

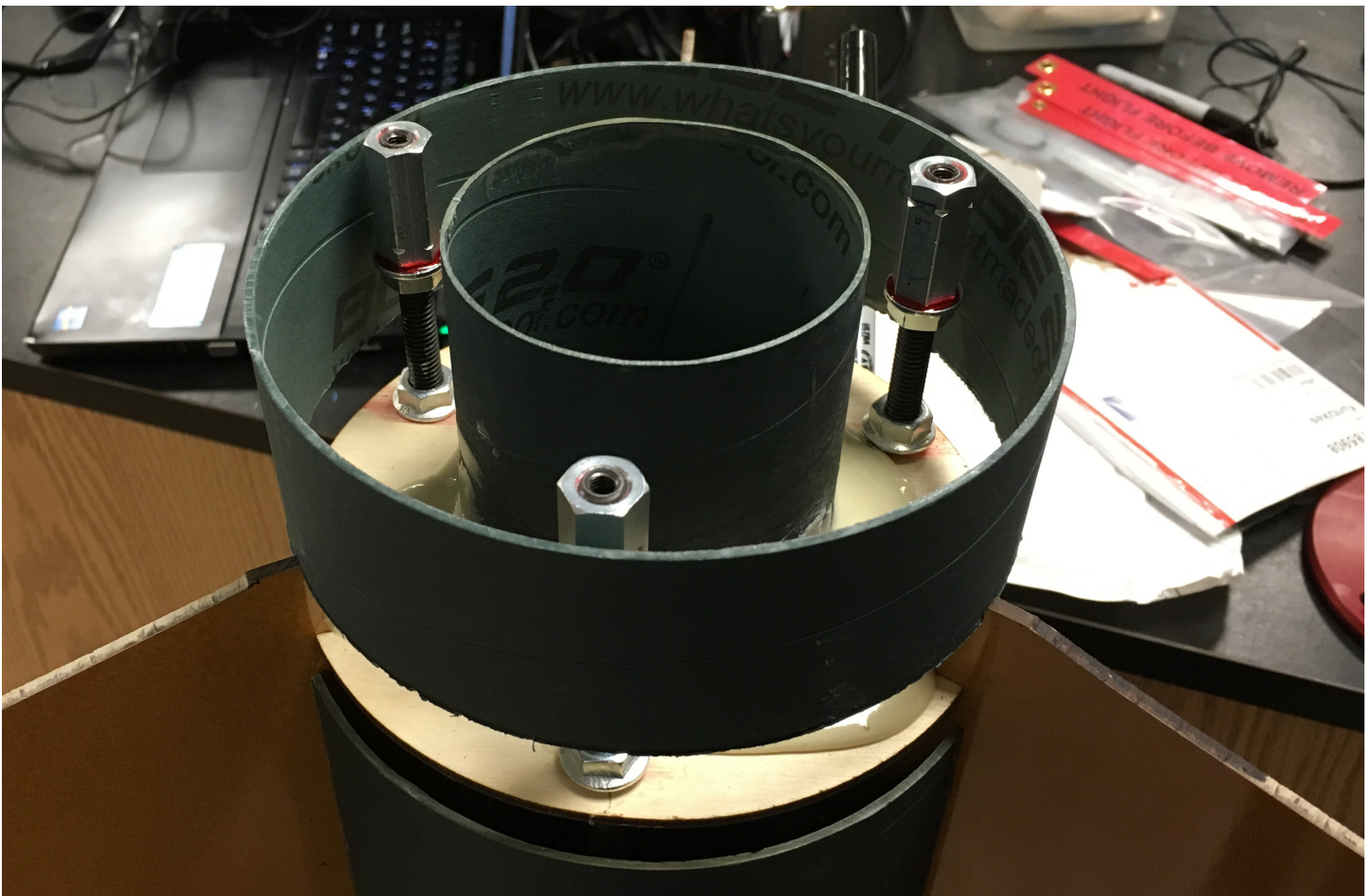
Motor assembly fully assembled. The fins and aft centering rings have been secured with epoxy to the motor mount tube. The laser cut centering rings provide perfect 120 degree alignment and rigidity. Three threaded rods run the length of the motor mount tube and connect to the aft thrust plate. The threaded rods are have flanged nuts on them that align and secure the centering rings. The picture on the right shows the centering dry fit onto the motor mount tube. Actual instillation involved inserting the assembly from the aft of the rocket, and then putting the threaded rod centering rings in from the top; this procedure allowed for each centering ring to be epoxied to the inside of the rocket body.



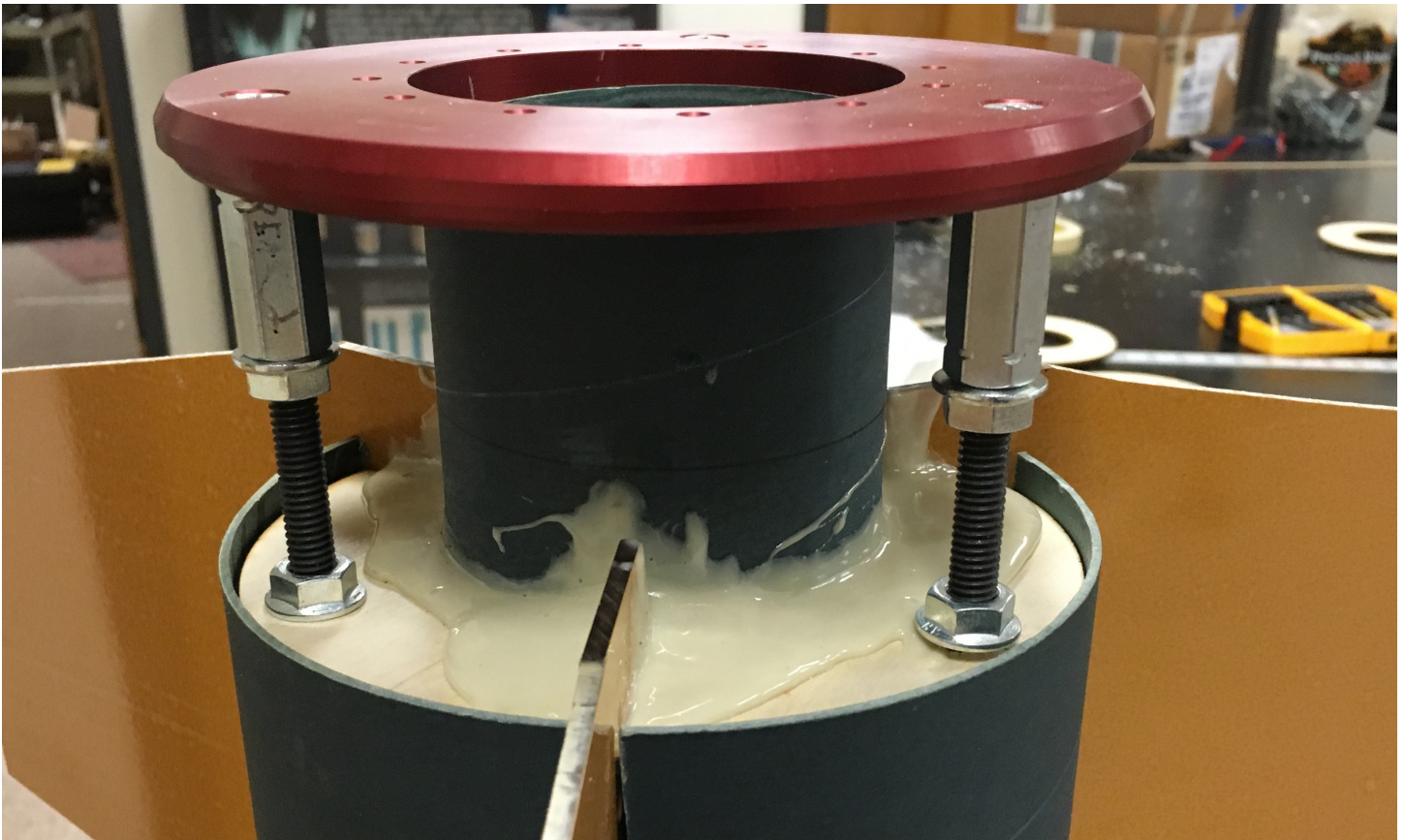
The fins were secured onto the motor mount tube and centering rings with epoxy prior to insertion in the rocket. This method allowed for the fins to be secured with ample amounts of epoxy. The top and bottom of each plate was filled thick epoxy fillets. The left image is prior to drilling the holes for the threaded rods. The threaded rod holes were drilled rather than laser cut because I did not have the exact dimensions of the holes in the thrust plate.



Aft section of the rocket, threaded couplers attached to the end of the rods for the thrust plate



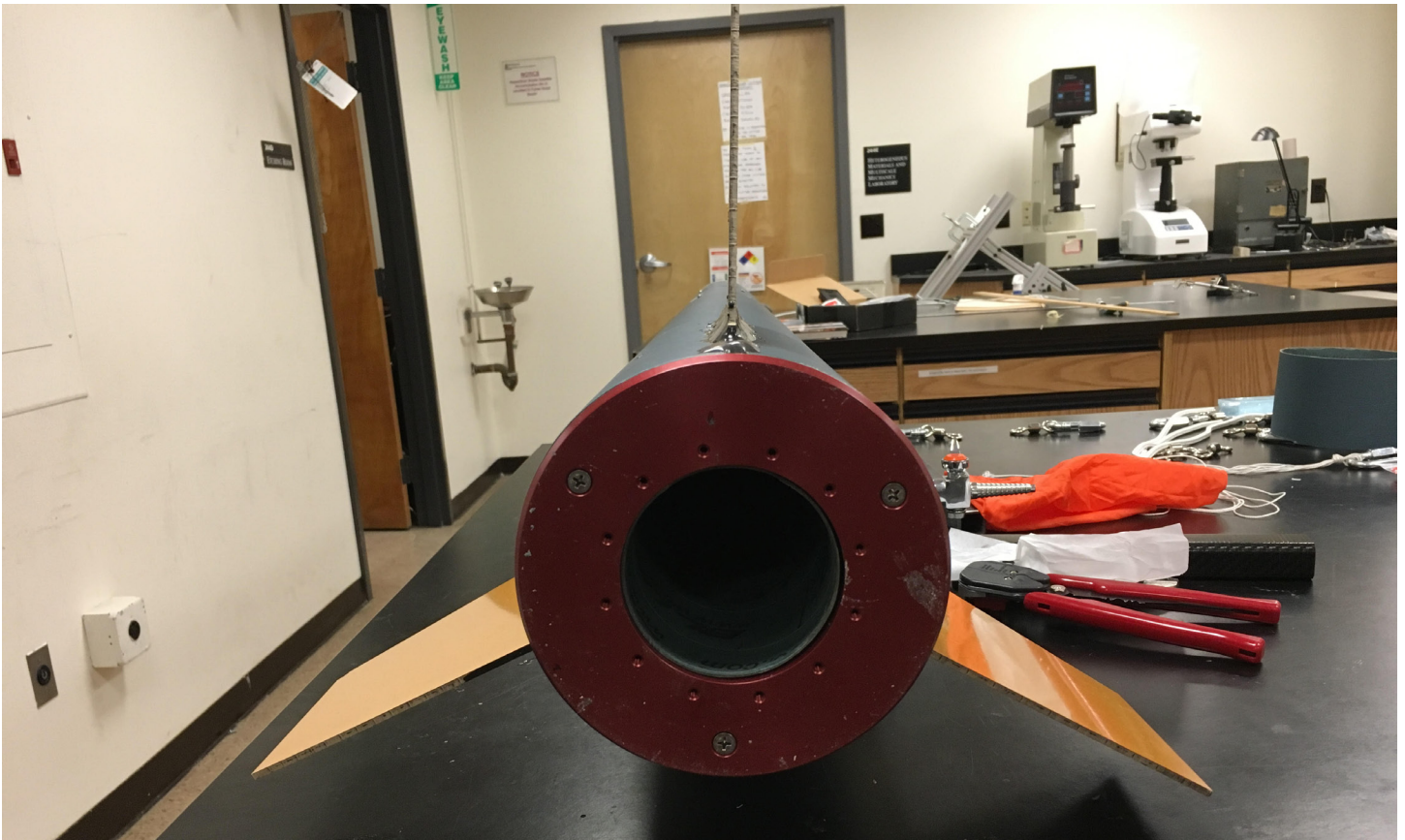
A piece of coupler is used to provide an epoxy and clamping surface



Thrust plate connected to the threaded rods, all hardware affixed into place with thread-lock



The motor section slid into place and filled with epoxy to secure the motor mount tube to the rocket.



Finished aft section (without flanged motor retainer attached)



Finished rocket