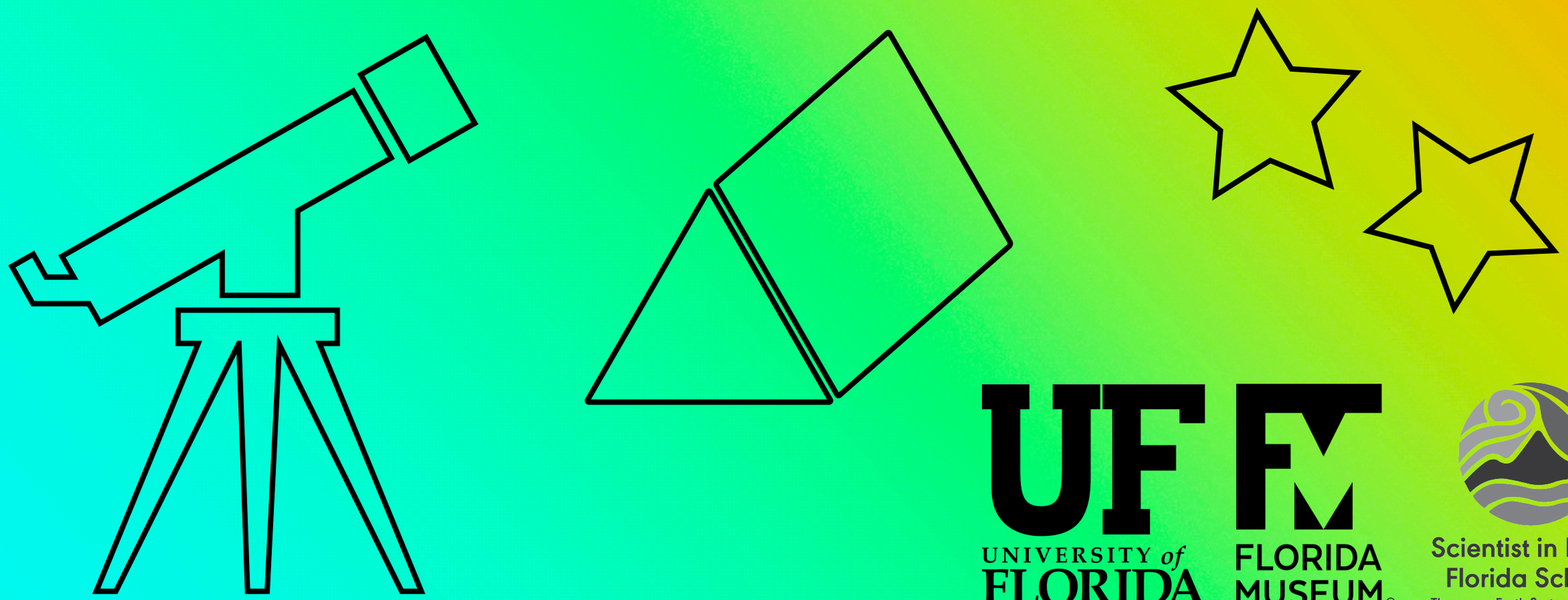
LIGHT AND COLOR

an astronomer's perspective



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University of Florida

December 27, 2022
GEMS Light Up the Night

Astronomy is all about light!

- Astronomy is the study of objects in space
- We study objects in space through the light they give off...
  - Stars, galaxies, quasars
- ... or the light they block
  - Dust, black holes, exoplanets
- *Example: the color of a star tells you how hot the star is*

Stars can be red, blue, white, or yellow!

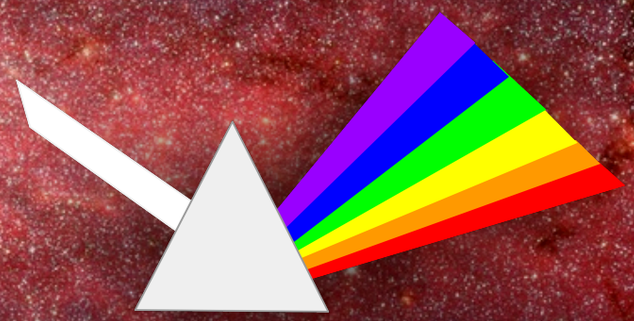
My research

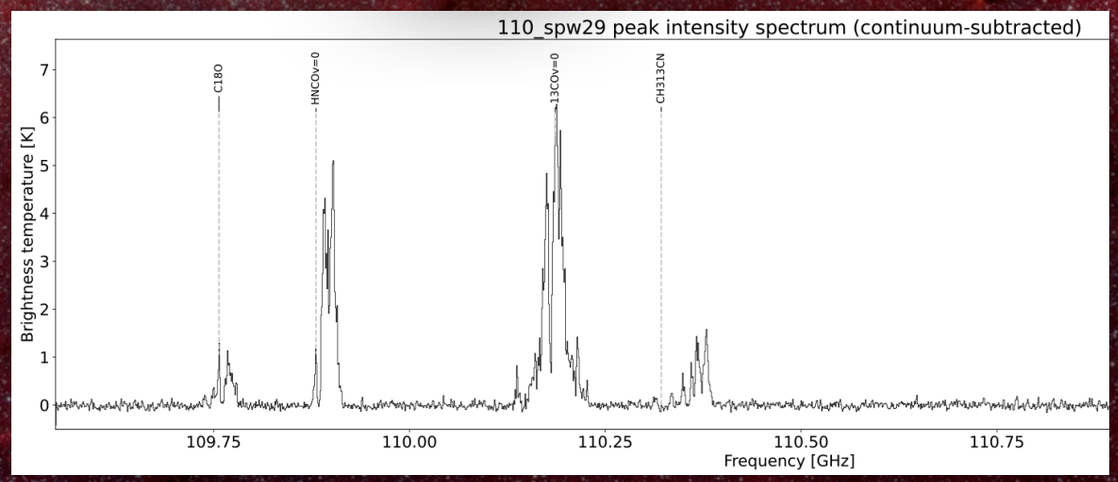
- I study light that's emitted by warm gas around a forming star near the center of the Milky Way!

- By splitting this light up into different color components, we can infer what the gas is made of

- I'm hoping to find molecules that trace different parts of the young star's anatomy

This is one antenna in the ALMA telescope





This is some of my data showing molecules I detected!

Astronomy at the University of Florida

- Department is made up of 16 professors (6 are women), 34 graduate students (11 are women), and many other researchers

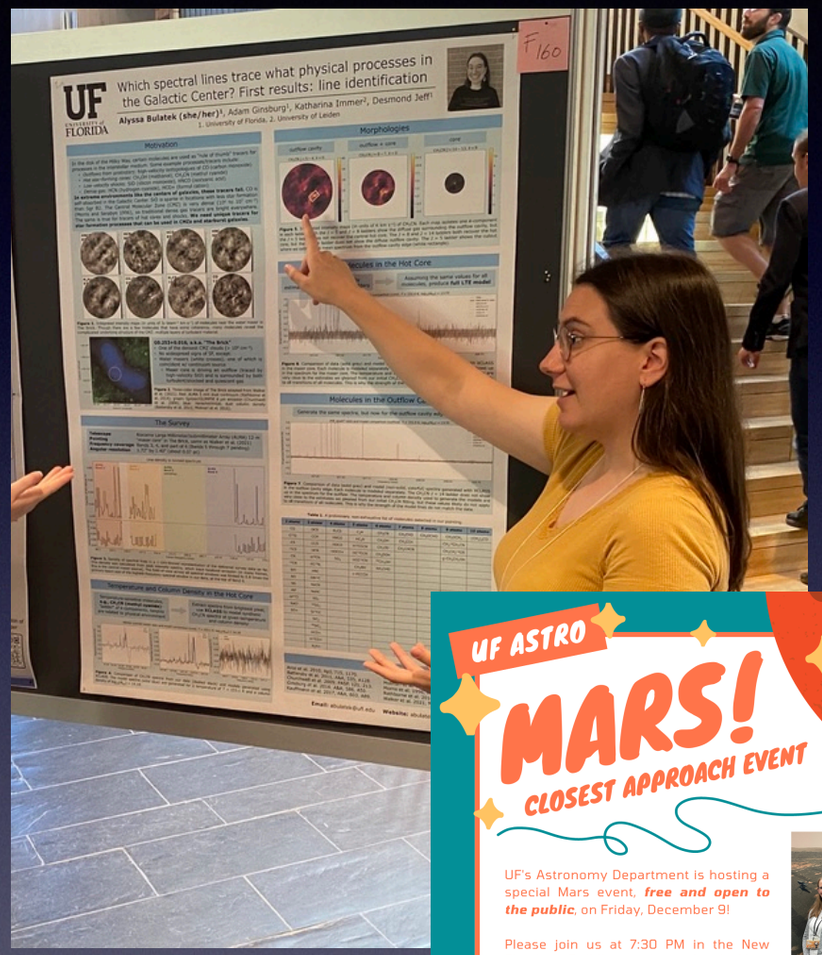
- I'm in my third year of my program on the way to getting a Ph.D.

- *Many grad students did other things before starting grad school!*

This is me and my research group!

What is a graduate student?

- Graduate school is "more school after college"
- As a graduate student, I:
  - take advanced classes on astronomy
  - work on my own research, collaborating with scientists all over the world
  - help teach courses
  - do outreach events to help teach the public about astronomy



This is me at a conference in Sweden

I designed this poster for a department event

A day in my life

- No dress code!
- I can either work from home or from my office, which I share with 3 other awesome women
- I have a few hours of meetings each day (either science-based or department-based)
- For the rest of the work day, I work on research

This is my desk
(I decorated it after I took this photo)

ZOOM

My hobbies

- I'm really into stationery! I have a huge sticker collection, and a pen collection too
- I LOVE cats, but I'm allergic :-(
- I love movies!! Right now I'm writing a short film
- I also like hanging out with my friends, either playing video games (Animal Crossing or Splatoon 3) or getting bubble tea
- I still keep in touch with my friends from college through Discord

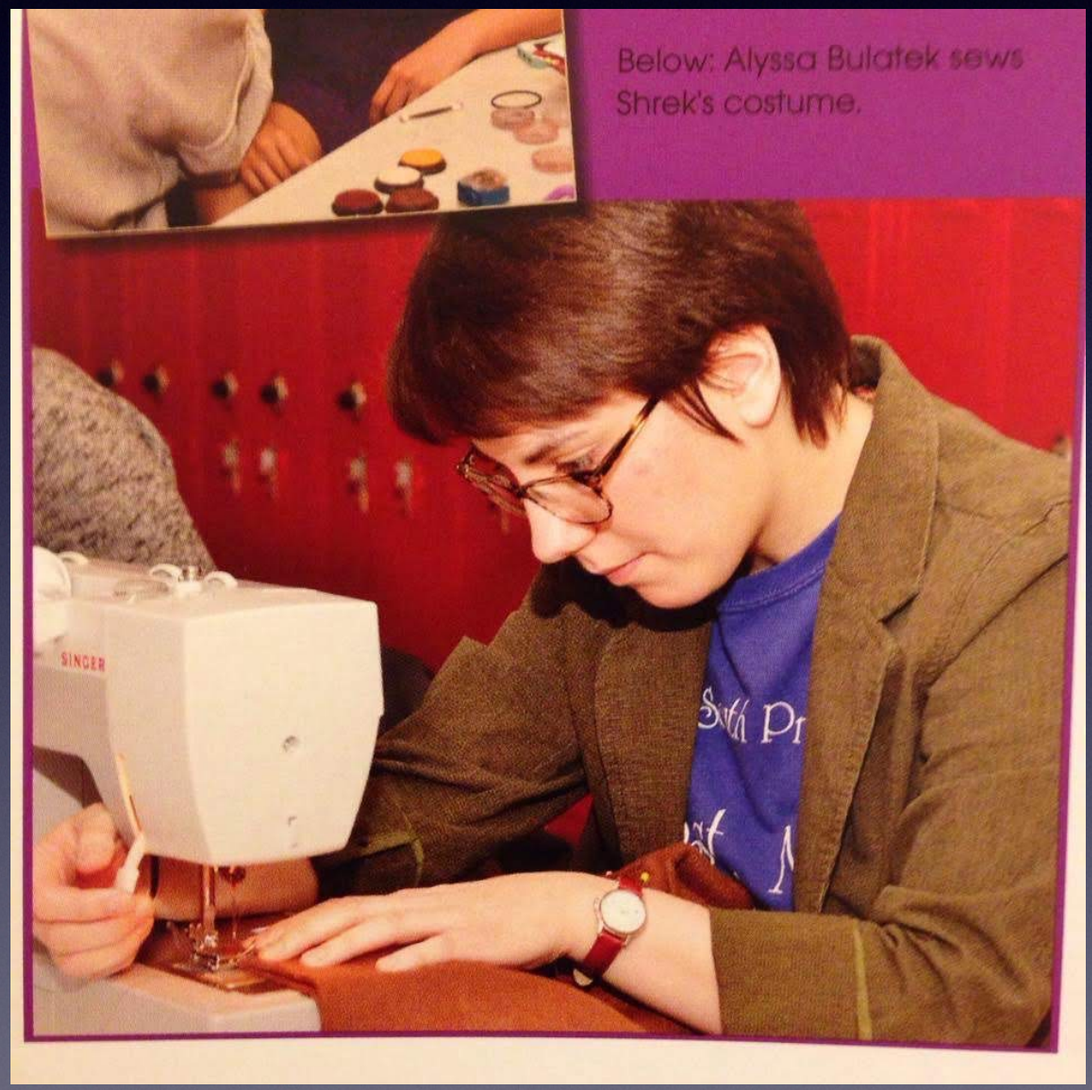
How did I get here?

- I was born in the 90s (old)
- I grew up in Illinois in a suburb of Chicago called Park Ridge (cold)
- I don't have siblings; family is me, my mom, and my dad
- As I kid, I always liked creativity, but I liked "structured/organized creativity" (science experiments)
    - One of my early scientific interests was nuclear reactors
- I was a Girl Scout!

My dad, my mom, and me!

Alyssa in high school (2012 – 2016)

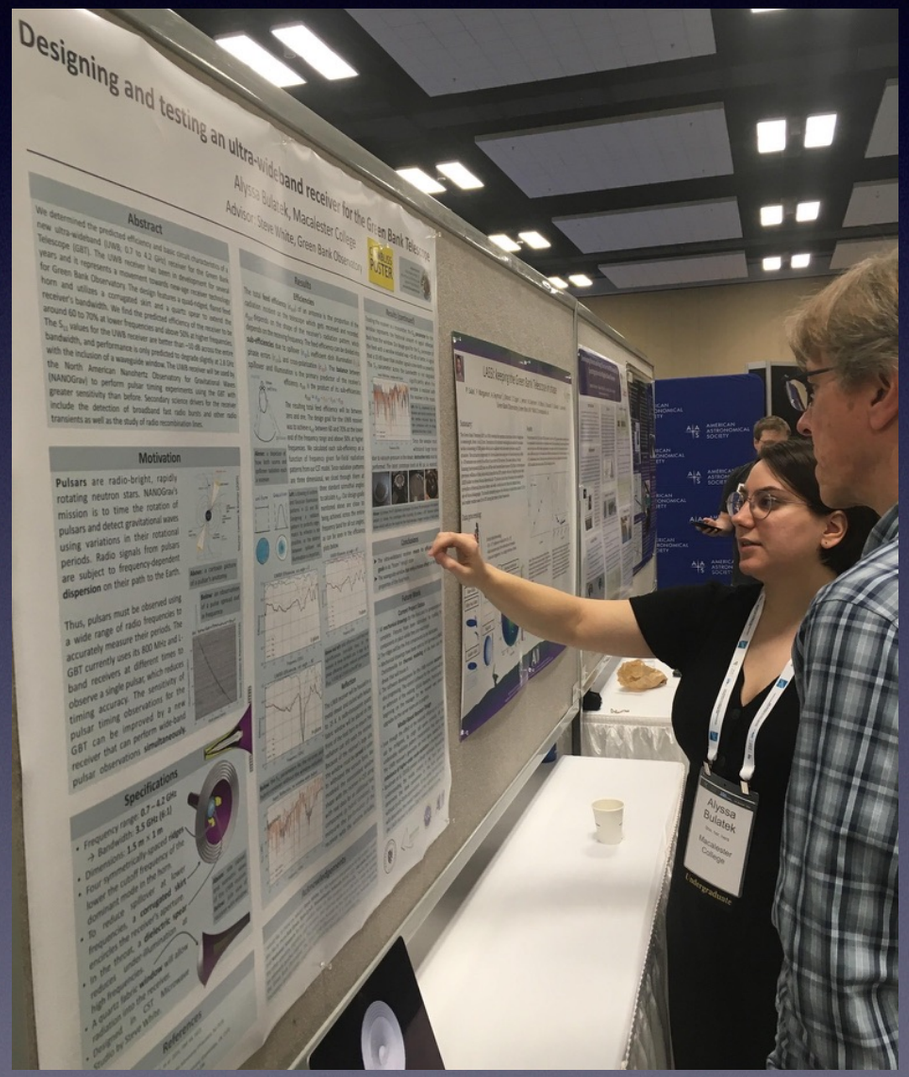
- Kept both creative and scientific interests
- Did theatre in high school
  - Liked acting, ended up doing costuming for 4 years
- Liked science classes (biology, chemistry, physics)
  - *Sophomore year: visited Fermilab—huge influence on my interest in science!*



Me in high school sewing
(my hair was really short)

Alyssa in college (2016 – 2020)

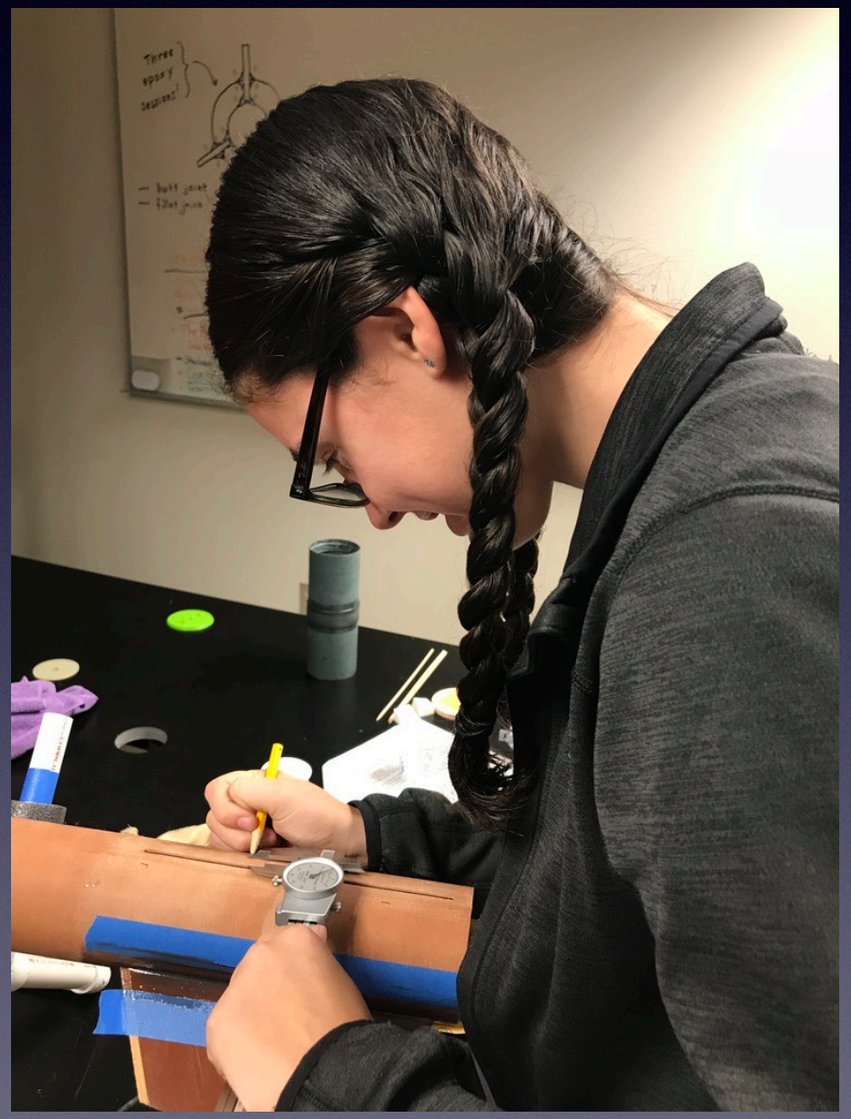
- Went to Macalester College in St. Paul, Minnesota (colder)
  - Degree: double major in Physics (Astronomy emphasis), Applied Math/Statistics
- Got lots of financial aid (need-based and merit-based)
- Continued doing costuming
- Got to do research all across the US each summer (and made money!) through REU programs



Me and a mentor at a conference in Hawaii in January 2020

Rocketry!

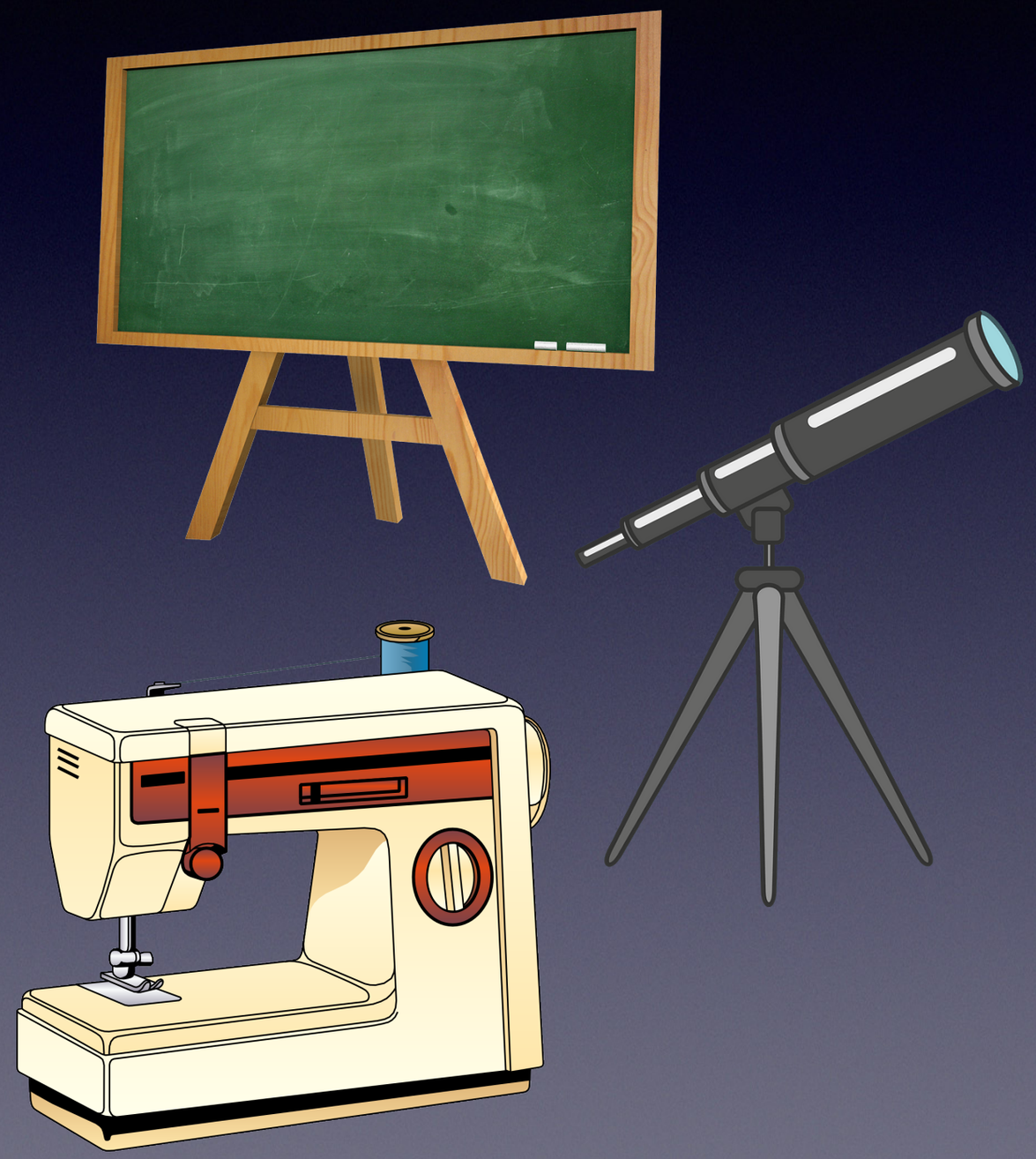
- Team formed in 2017
- Macalester had no engineering program, so none of us were experts
- Rockets had physics-themed names: e.g. Quantum Field Theory (1 and 2), Quantum Heavy, Quantum Chromodynamics



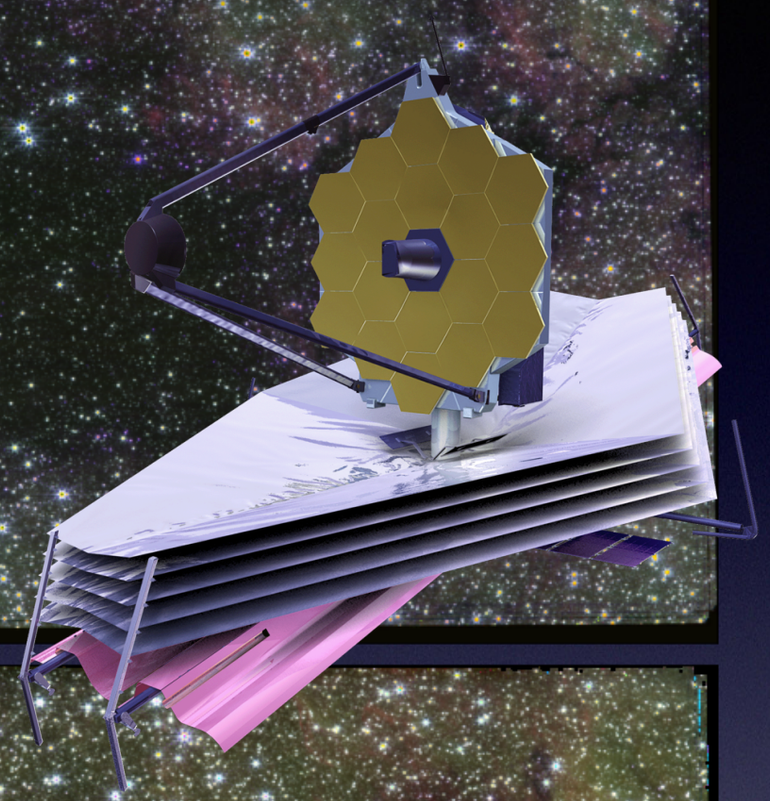
My friend Kayla measuring part of a rocket

Alyssa after grad school?

- I want to be a teacher!
- I'd like to work at either a high school or a college teaching physics and astronomy
- I still want to keep working on research to help advance the field of astronomy
- I also want to keep working on my hobbies (crafts, writing, costuming... etc!)



Thank you so much for listening!



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