So You Were Chosen for NITARP

Questions we had:

1) What kinds of research can a person like me do?
2) What will our year together look like?
3) What about the students?
4) What about our trips?
5) What about our workload?
6) What are some benefits of NITARP? (Why am I doing this??)
7) Umm, advice???

1. What Kinds of Research Can a Person Like Me Do?

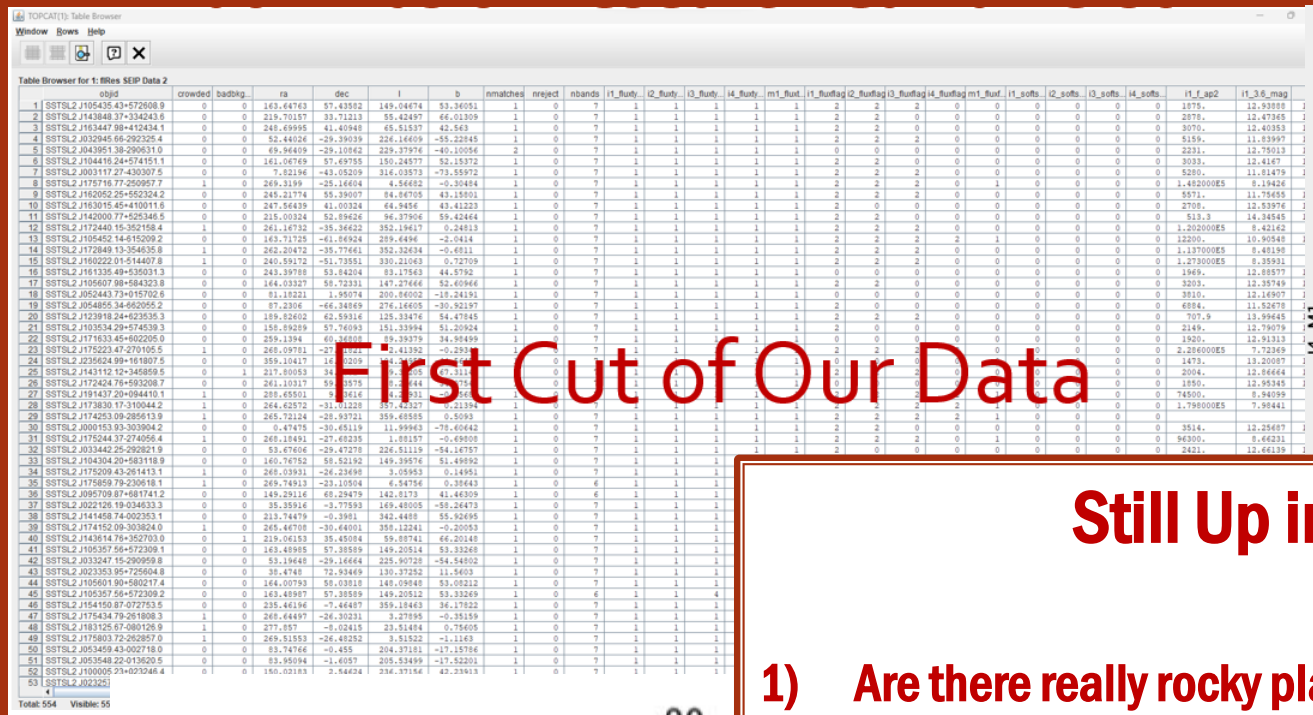
Ben's Projects

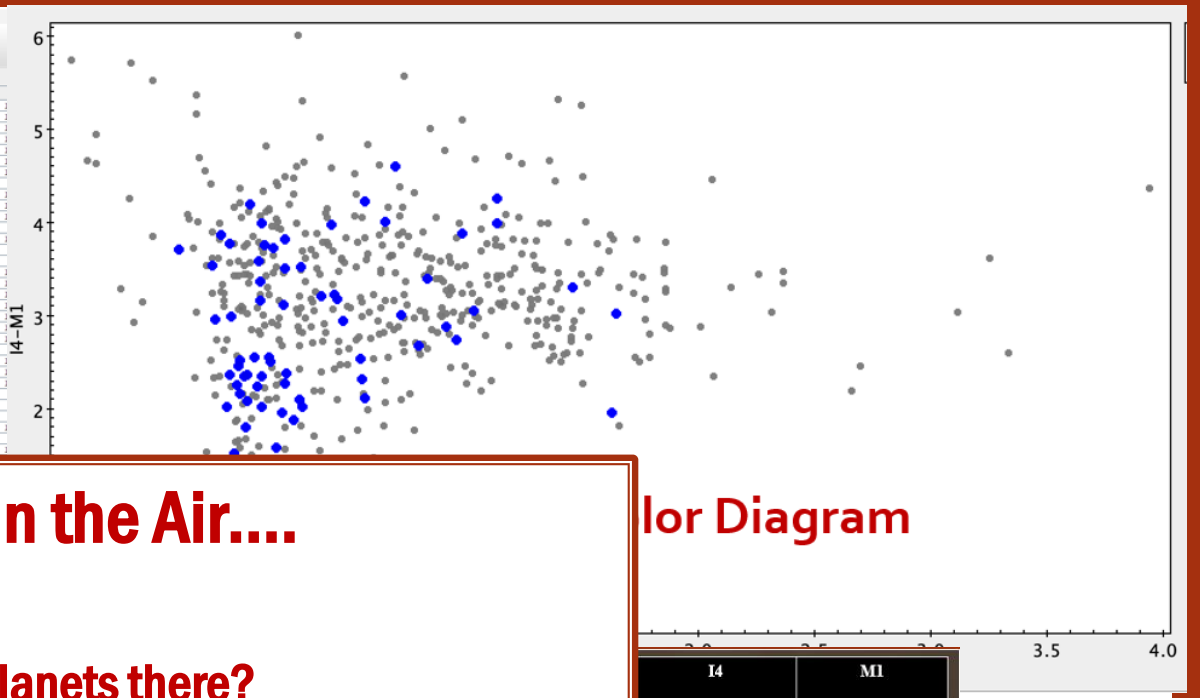
- (Young Stellar Objects 'YSOs', with Luisa during Covid) - Two years of virtual work, posters and AAS meetings… Evidence for young stellar objects in the Nebular Stream of the Spider Nebula (IC417).
- Cyclops AGN w/Varoujan, 2024 - Prior work by Souchay et al identified 41 "misbehaving" active galactic nuclei with measured Gaia proper motions. Our work sought to expand the list of known AGN with this issue and determine the source(s) for their anomalous measured motion.

Jeff's Projects

- fIRes w/Varoujan, 2022 – Finding evidence of rocky planets around red dwarf stars using the technique of infrared excess
- Star Chasers w/Luisa. 2024 – Finding YSOs in two star-forming regions within Cassiopeia

First Cut of Our Data

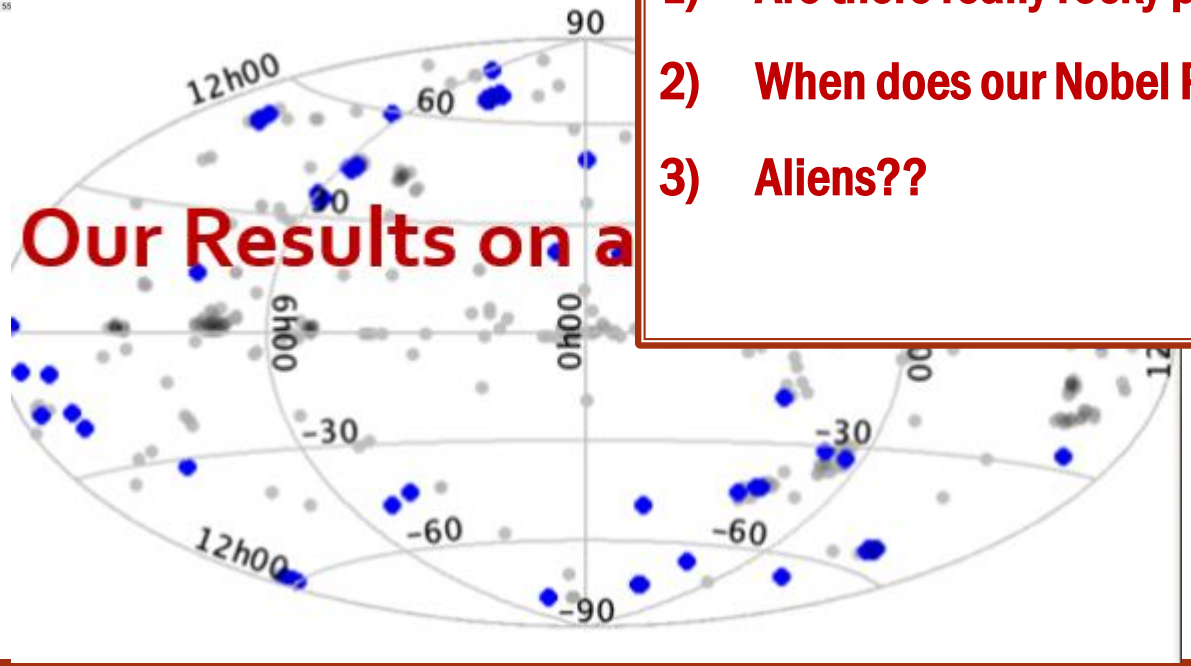




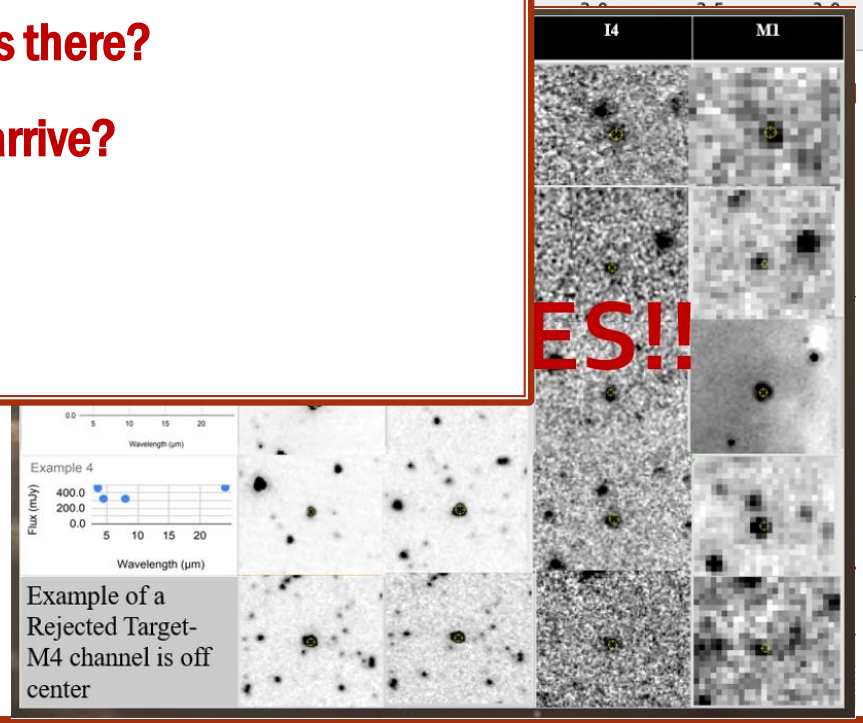
lor Diagram

Still Up in the Air....

1) Are there really rocky planets there?
2) When does our Nobel Prize arrive?
3) Aliens??

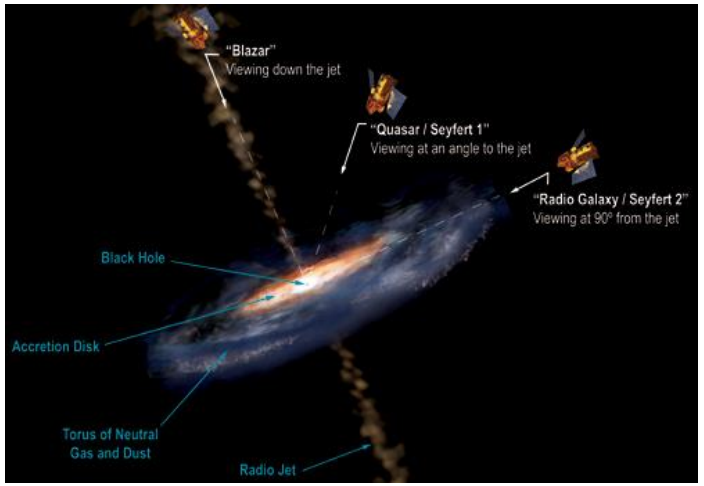


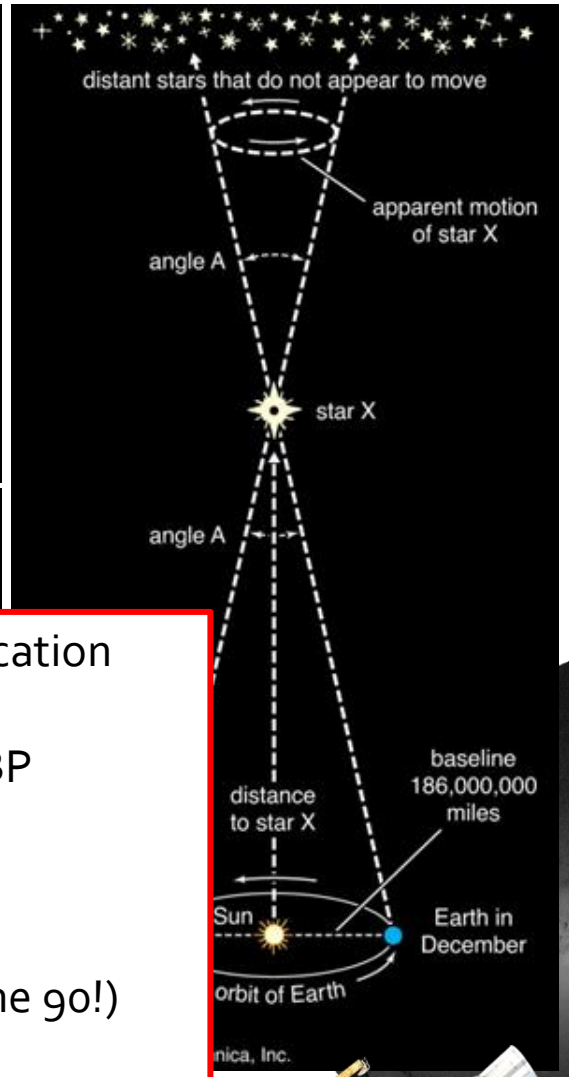
Our Results on a



Example of a Rejected Target- M4 channel is off center

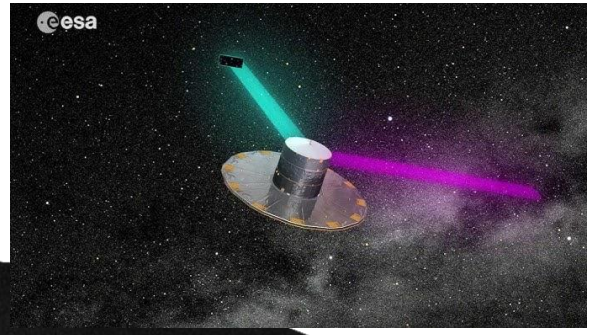
ES!!

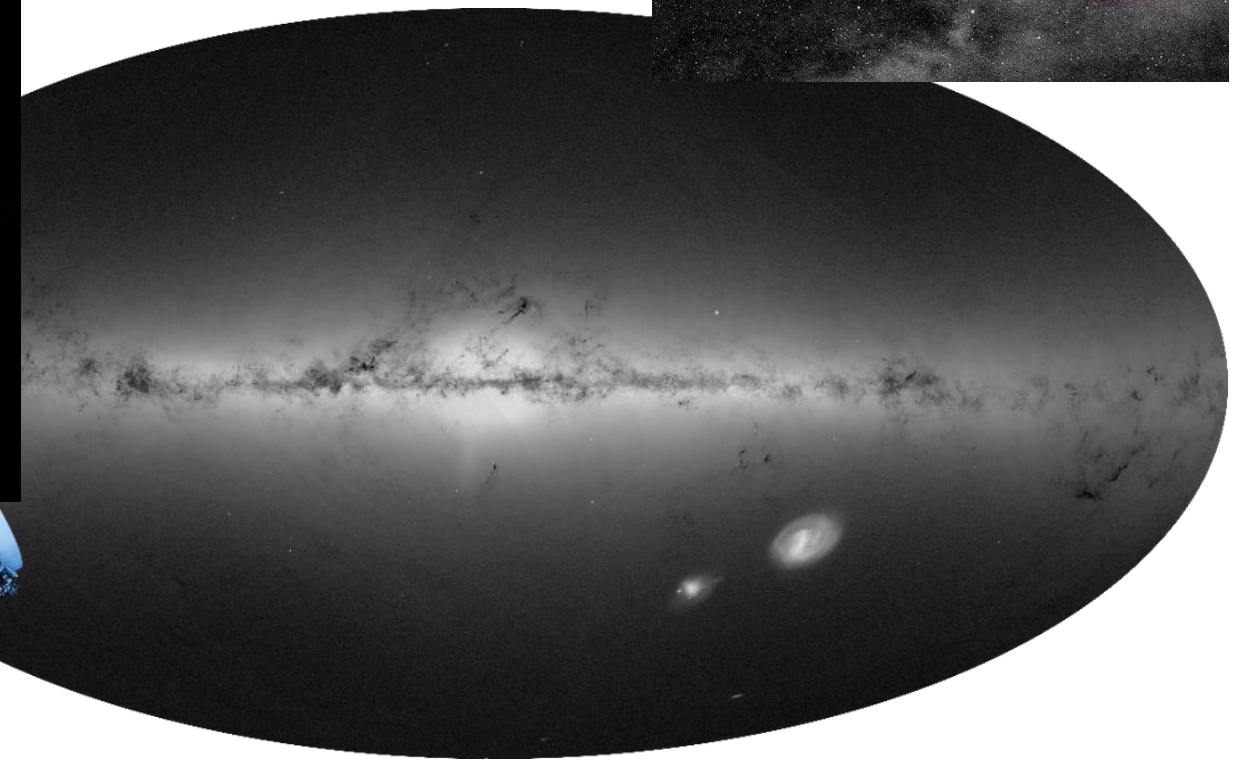




Souchay et al ~500,000 starting pool

Cyclops AGN Gaia ~4,500,000 starting pool (90% confidence AGN)





Misbehaving AGN vetted for sky location

No bias seen

Pool vetted with WISE W2 vs Gaia BP

Doesn't look like dust extinction

Color-Color plots of many types

They all look typical

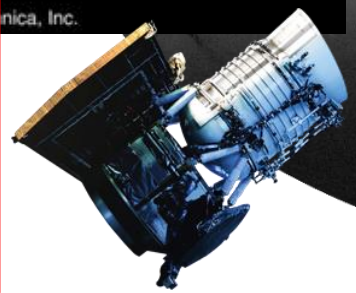
Stellar Contaminants (remember the 90!)

A few stellar objects but VERY few

Double AGN??

Found some in our sample, but not enough

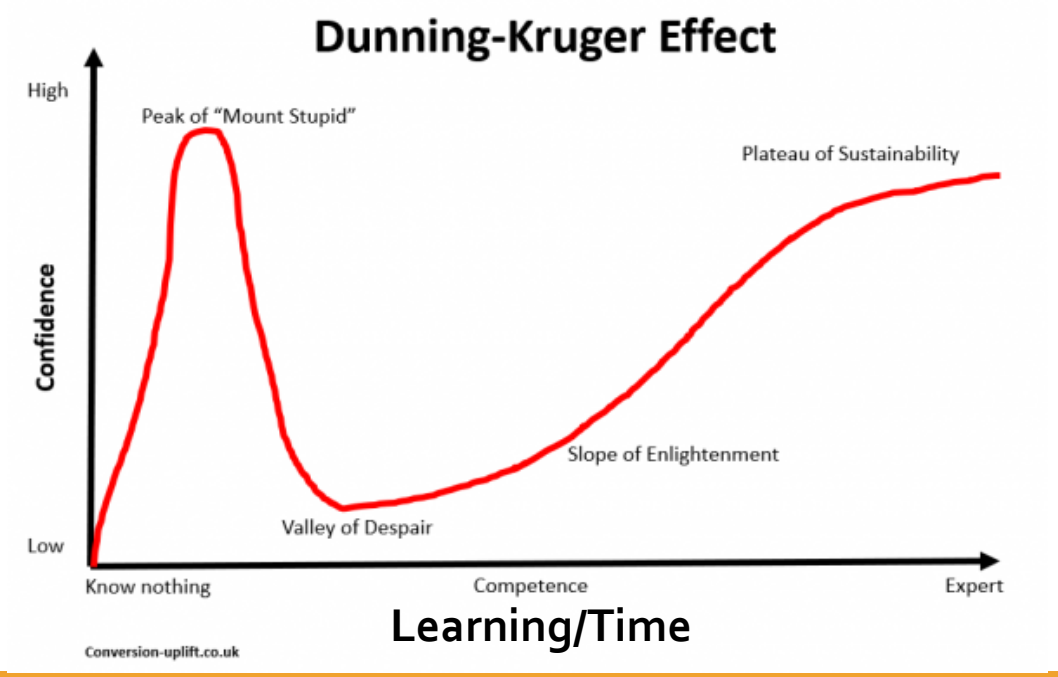
We remain with nearly 800 candidate AGN with a measured proper motion.



2. What Will Our Year Together Look Like?

I. Learning (January – Summer, and really always)

- Weekly Zoom/Webex/"telecon" meetings
- Learn (actively celebrate wonder and curiosity, actively challenge confusion)
- Become confused, frustrated, etc.
- Learn some more
- Learn some more
- Write the group proposal ~March
- Onboard students as you choose them

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243RD MEETING OF THE
AMERICAN ASTRONOMICAL SOCIETY
NEW ORLEANS, LOUISIANA
7–11 JANUARY 2024
NITARP Orientation
Workshop
8:00 AM – 5:00 PM
AMERICAN ASTRONOMICAL SOCIETY
EXIT
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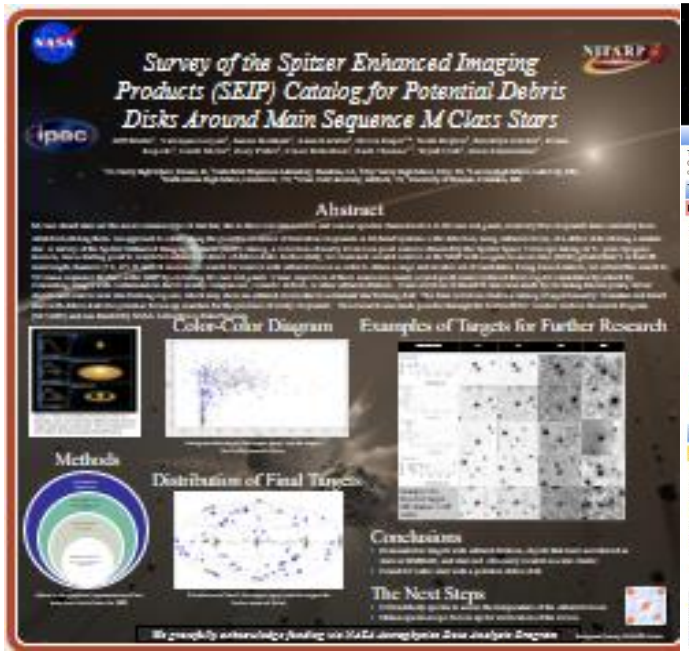
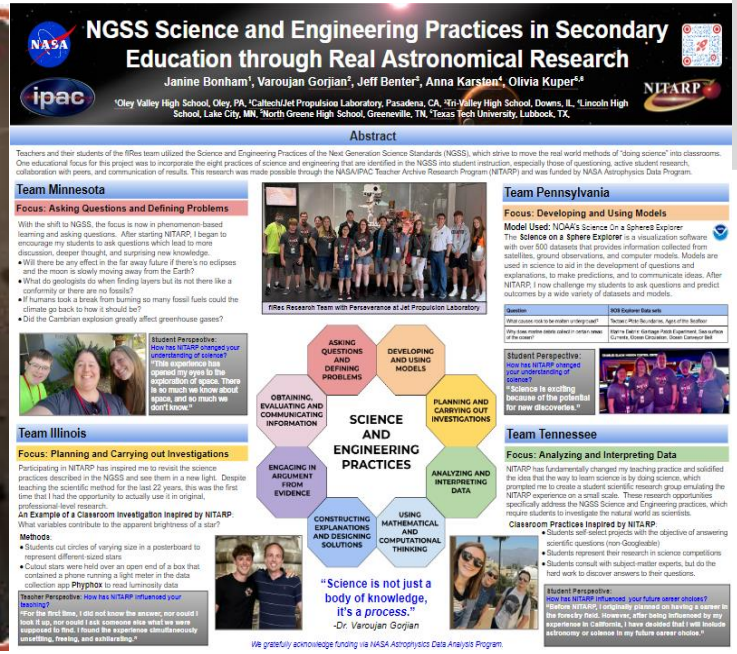
2. What Will Our Year Together Look Like?

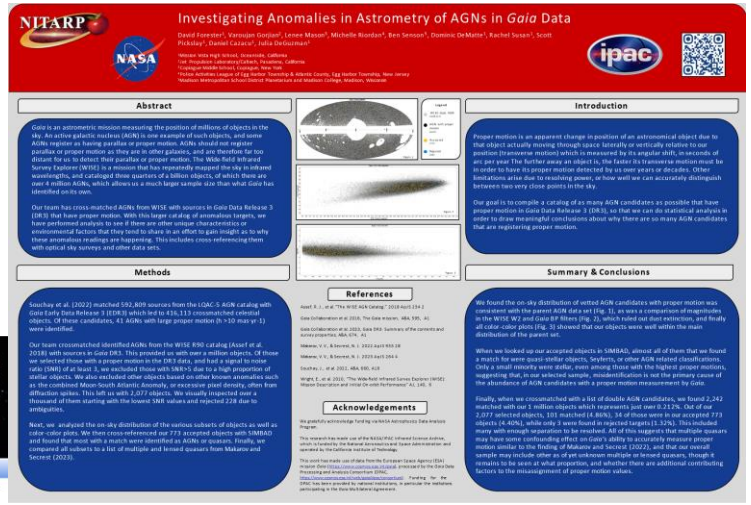
III. Data Analysis (Summer – December)

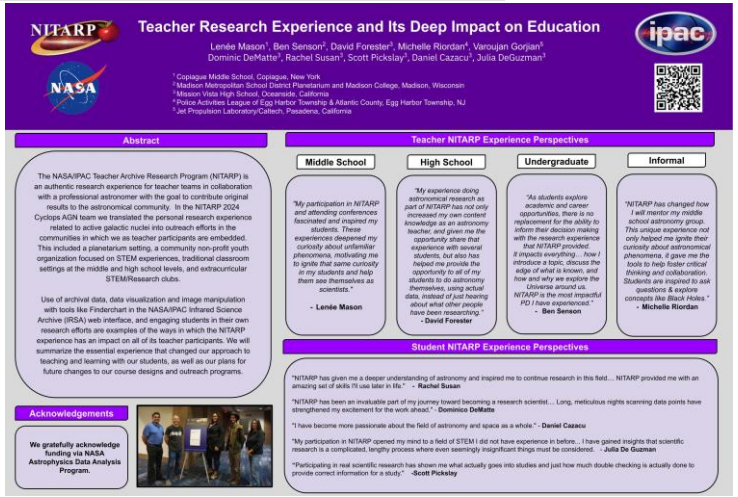
Create… "the poster(s)"

- Data Analysis & Selection at home and on Webex
- Poster Prep (x2)









2. What Will Our Year Together Look Like?

IV. Sharing Our Results at the 247th AAS (January '26 in Phoenix)

(Slide Left Intentionally Blank)

3. What About the Students?

Who and How Many to Pick?

- NITARP pays up to 2 (can bring up to 4). None is an option, too. Can involve as many as you want back home.
- Selection Process? Up to you! Participation? Essays? Interviews? Cage matches?
- Same kids at Cali and AAS (strongly recommended)
- Seniors discouraged
- Be comfortable: Like them!

Student Responsibilities

- Learn the science (from you and hopefully attend at least some telecons or watch the archived ones)
- Do the science: analyze the data & give input
- Present the science poster (with you) at the AAS

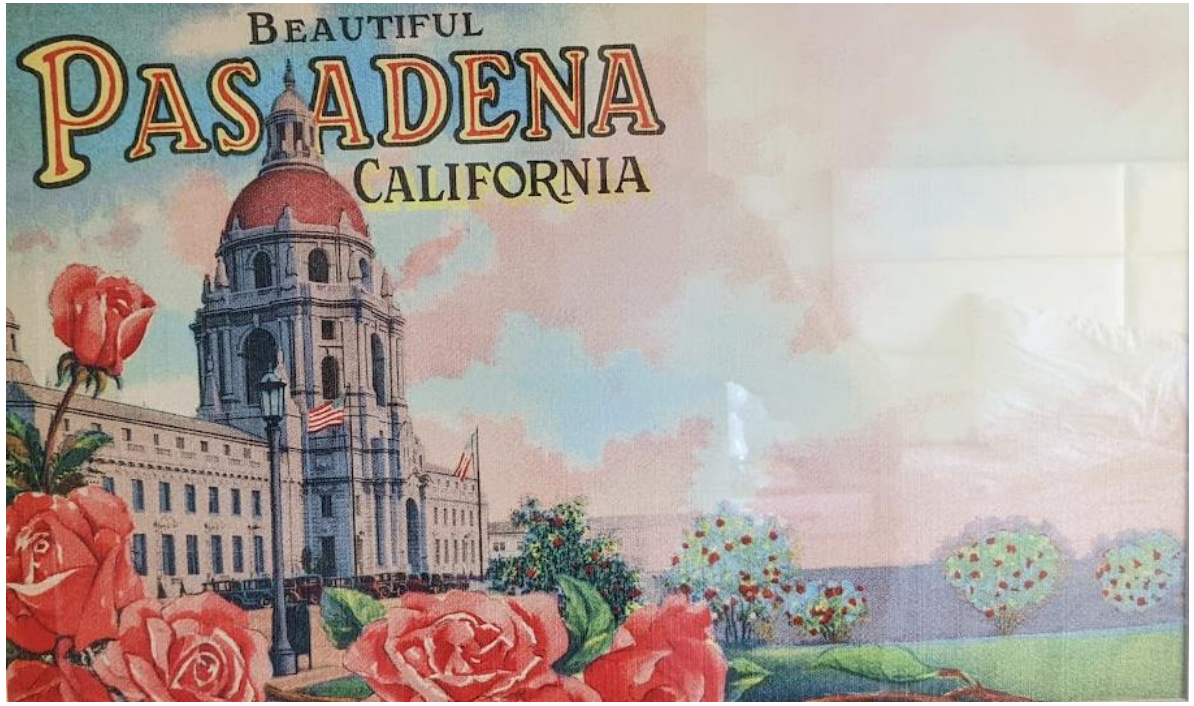
Advice to You as Their Teacher

- Enjoy the experience of learning with them
- Be prepared to lean on them: you'll help each other!

4. What About the Trips?

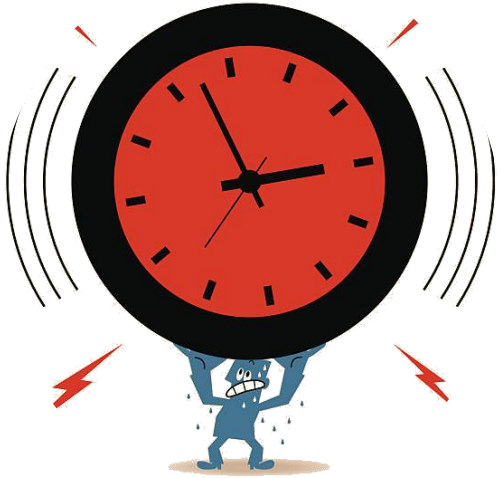
- **Trip 1: You're On It!**
- **Trip 2: Training in Cali (Five Days and Nights in Sunny Pasadena)**

  Trip Extracurricular Possibilities:
  - Old Pasadena
  - Santa Monica Pier
  - Griffith Park & Observatory
  - Hollywood Boulevard
  - Dodgers Game
  - Mt. Wilson Observatory
- **Trip 3: Present in Phoenix**



BUT ABOUT THAT WORK....

5. What About the Workload?



- Weekly “Zoom” meetings ~hour
- Homework: Background reading and writing and analysis
- Some parts more work-intensive than others. These parts include the initial learning, proposal writing, data analysis, and poster prep
- What kind of work?
  - Reading & learning
  - Writing proposals
  - Organizing, Processing and Analyzing Data: using tools (IPAC IRSA viewer, Topcat, & Excel) to handle and calculate numerical data and visually check sources

6. What Are Some Benefits?

- Learn cool astro stuff
- Build your Grit and persistence
- Meet people
- Learn about astro opportunities
- Step out of your comfort zone and try something new
- Do authentic research
- Great experiences
- Become famous back home

7. Ummmm….. Advice???

- Ask questions… more than once… actively challenge confusion and lack of clarity
- Be open to the experience
- Be human
- COMMUNICATE, Communicate, communicate
- Dive into the NITARP poster sessions this week, especially ones with the kids: “Explain it to me like I’m five….”