



Ryan W. Pfeifle | NPP Fellow
NASA GSFC | ORAU

Life as a NASA Postdoctoral Program Fellow



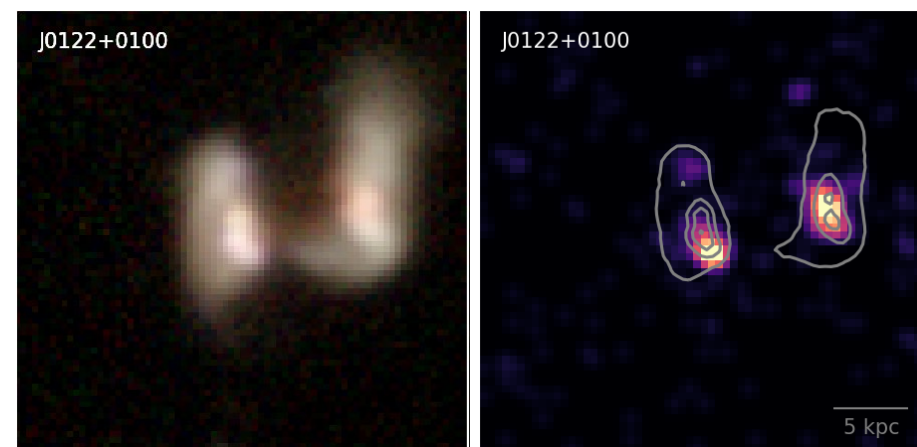
How did I get here?

I received my B.S. in Physics in 2017 from George Mason University in Fairfax, VA.

I stayed at Mason and earned my PhD in 2022 under the supervision of Prof. Shobita Satyapal.



My thesis focused on dual active galactic nuclei (dual AGN) in galaxy mergers and obscured AGNs, with an emphasis on X-ray imaging and spectroscopy.



My Experience and Opportunities as an NPP

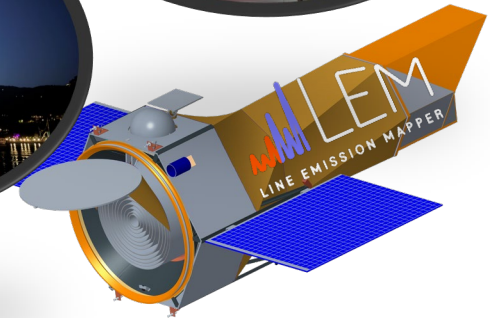
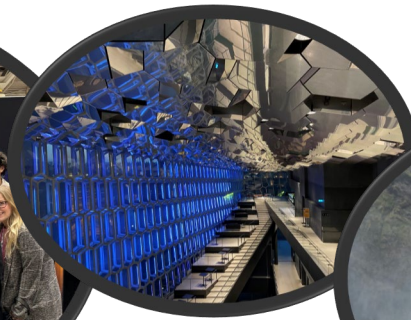
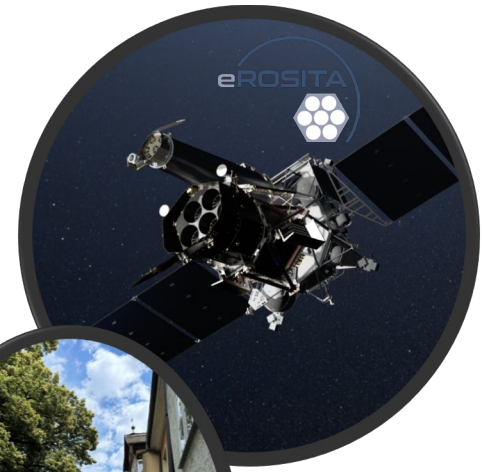
- Break this down into several sections:
 - “What’s it like being an NPP Fellow?”
 - “The Freedom to Explore and Learn”
 - “Opportunities to Lead, Collaborate, and Learn”
 - “Your Advisor is Key”
 - “Two Body Problem”

Have a question or interested in something not listed here?

Ask your question at any time!

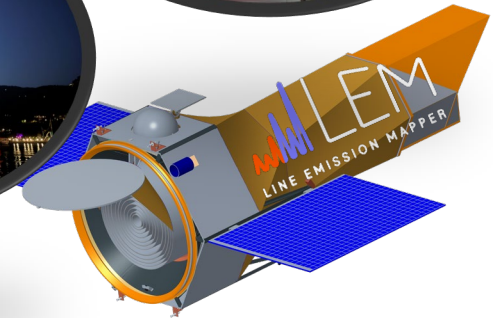
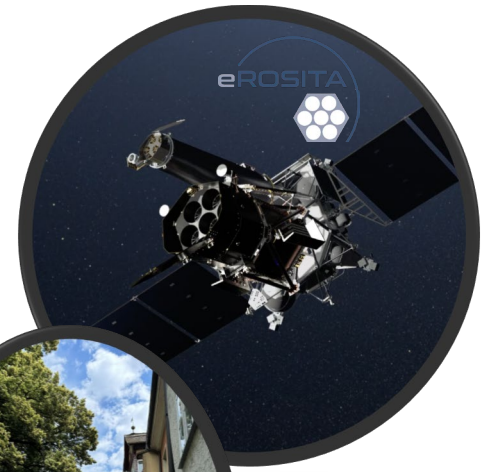
What's it like being an NPP fellow?

- A huge influx of opportunities for research, collaboration, travel, and learning!
- My NPP has been hard, but because I take on too much!
 - During my NPP, I have been learning (or trying to) to balance research freedom, available time, new collaborations, etc.
 - My advisor and my colleagues have made my success as an NPP possible!



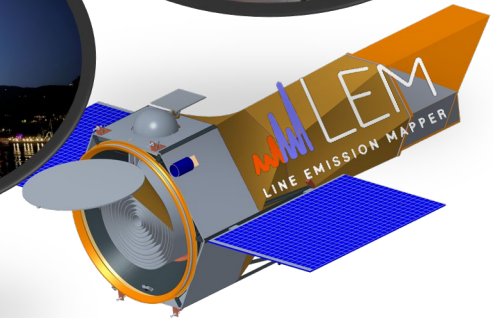
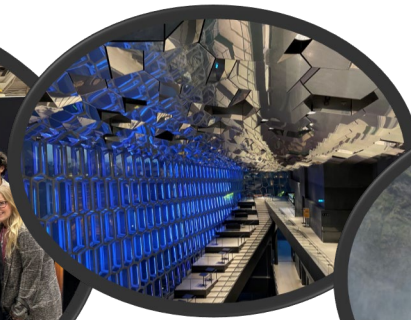
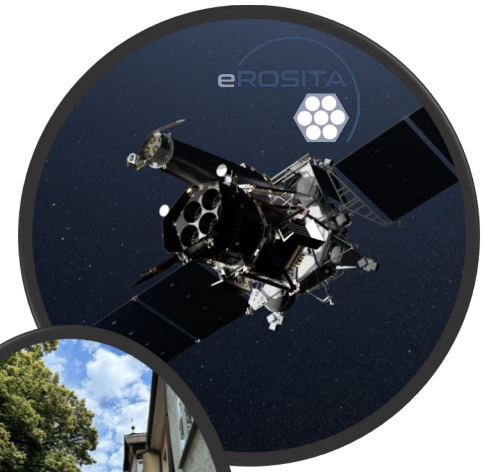
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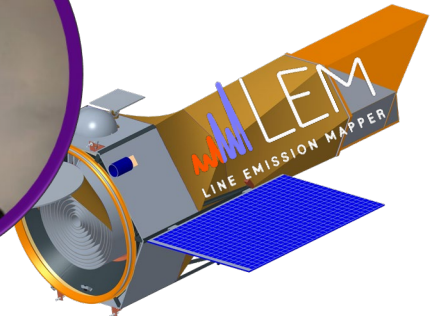
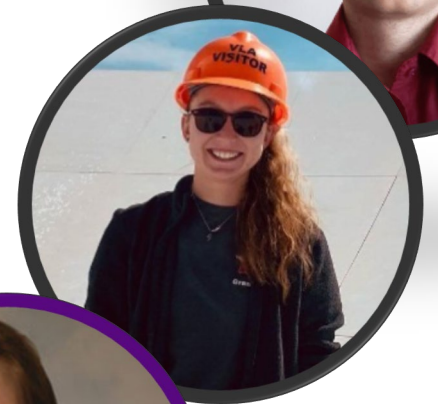
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What's it like being an NPP fellow?

As a postdoc, I'm still learning, growing, and evolving. Imposter syndrome is a constant experience, and I still get anxious before talks or sending around paper drafts.

My colleagues and collaborations help to propel me forward!



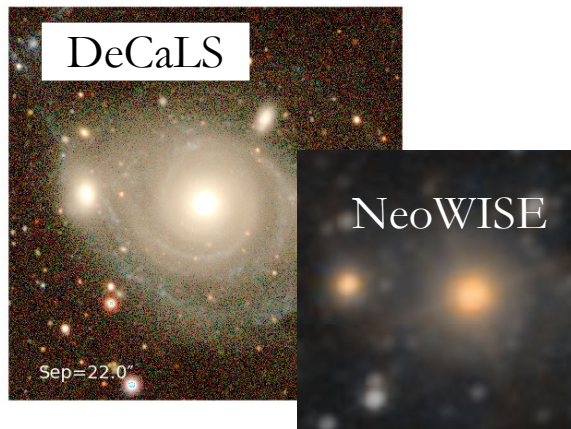
 **HEX-P**
HIGH ENERGY X-RAY PROBE

The NPP: The Freedom to Explore and Learn

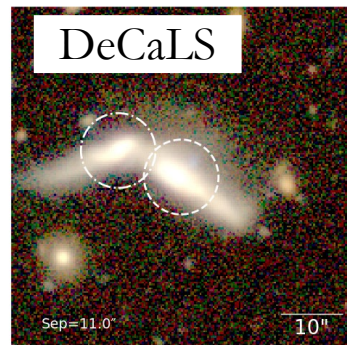
*Exploring New
Discovery Spaces for
Dual AGNs*

*Mid-IR Dual
AGNs in
DeCaLS*

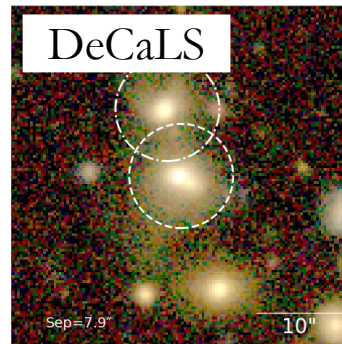
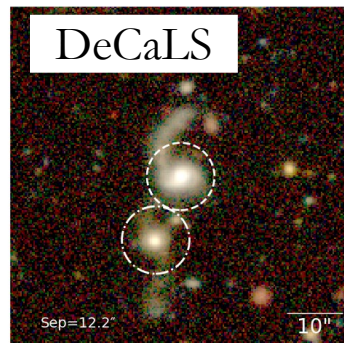
Pfeifle et al., in prep.



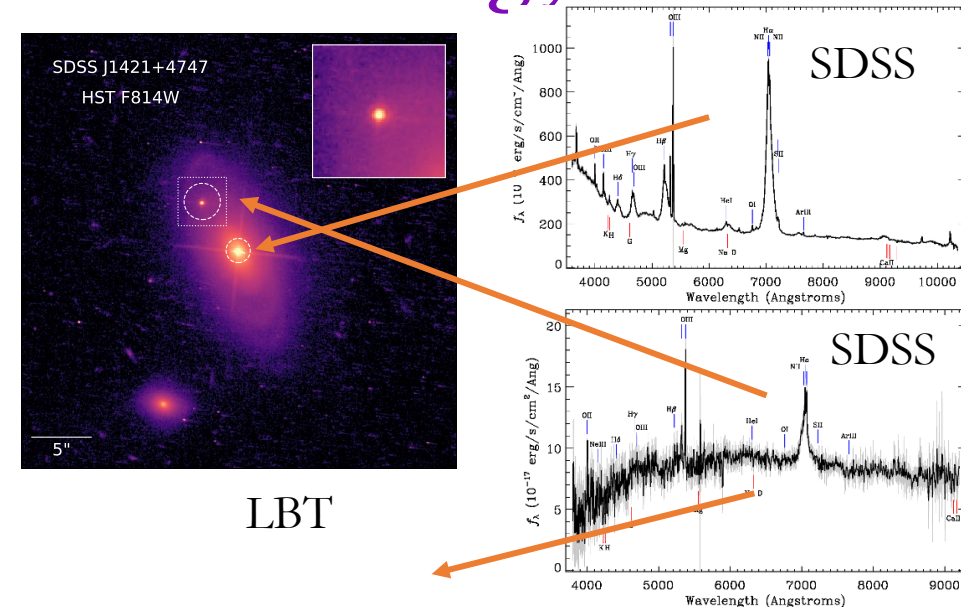
*Mid-IR Dual
AGNs in Swift-
BAT*



Pfeifle et al., in prep.



*Highlighting Pitfalls of
Common Selection
Methodology*



Spatially-resolved spectra:
featureless secondary spectrum

Fiber spillover
serious problem for
sample selection!

The NPP: The Freedom to Explore and Learn

The NPP gave me the time, freedom, and opportunity to develop resources for the community, namely: the Big Multi-AGN Catalog (Big MAC)

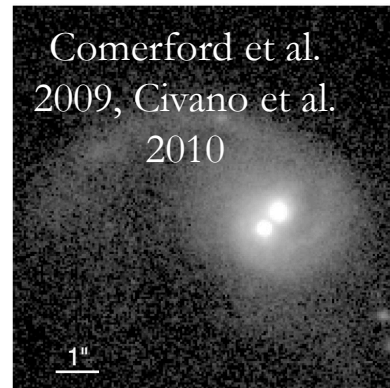
First ‘complete’ catalog of multi-AGN systems from the literature; a living library for multi-AGN science. (Pfeifle et al., *submitted*)

Includes:

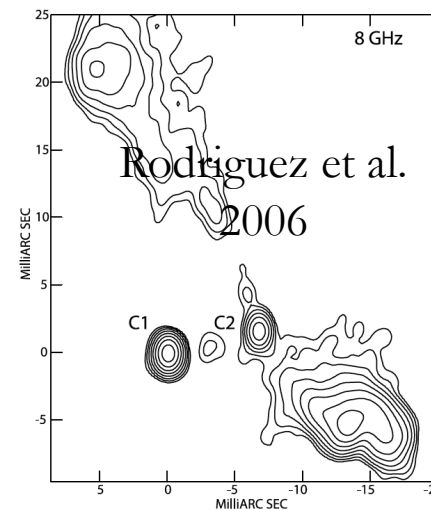
Dual AGNs and Candidates



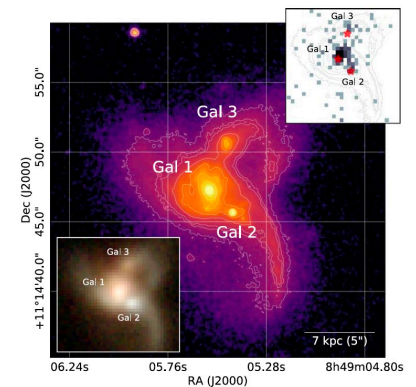
Recoiling AGN and Candidates



Gravitationally-Bound Binary AGNs and candidates



N-tuple (≥ 3 AGN) AGNs and candidates



Pfeifle et al. 2019b

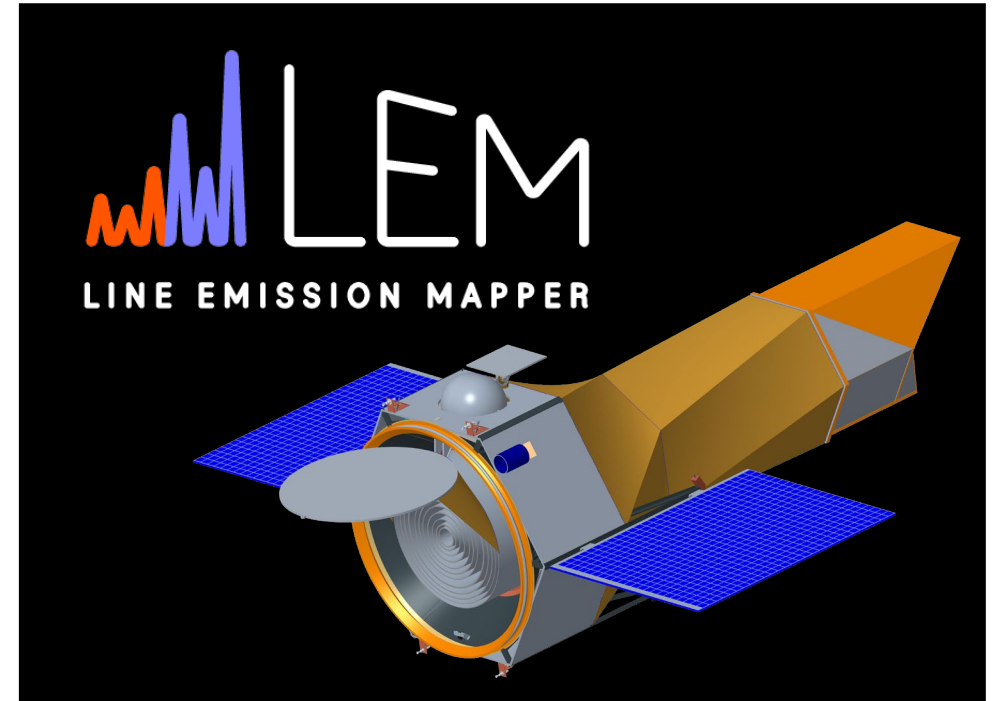
The NPP: Opportunities to Lead, Collaborate, and Learn

As an NPP, I was fortunate enough to play a role on two NASA probe mission concepts:

I am a key science collaborator for the High Energy X-ray Probe Mission Concept



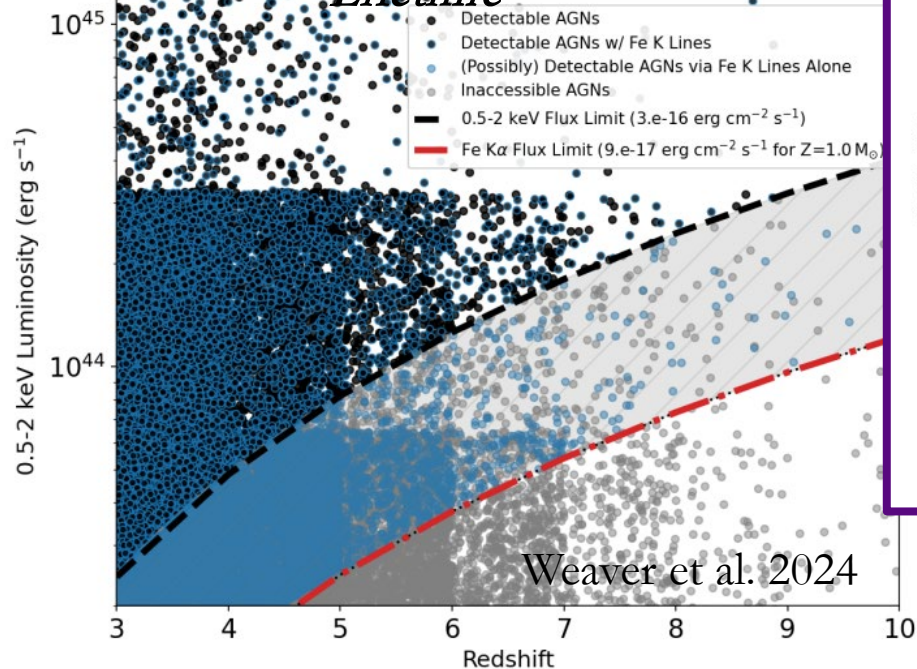
And I am Co-Deputy Lead for the LEM AGN Working Group and a member of the DEIA Working Group



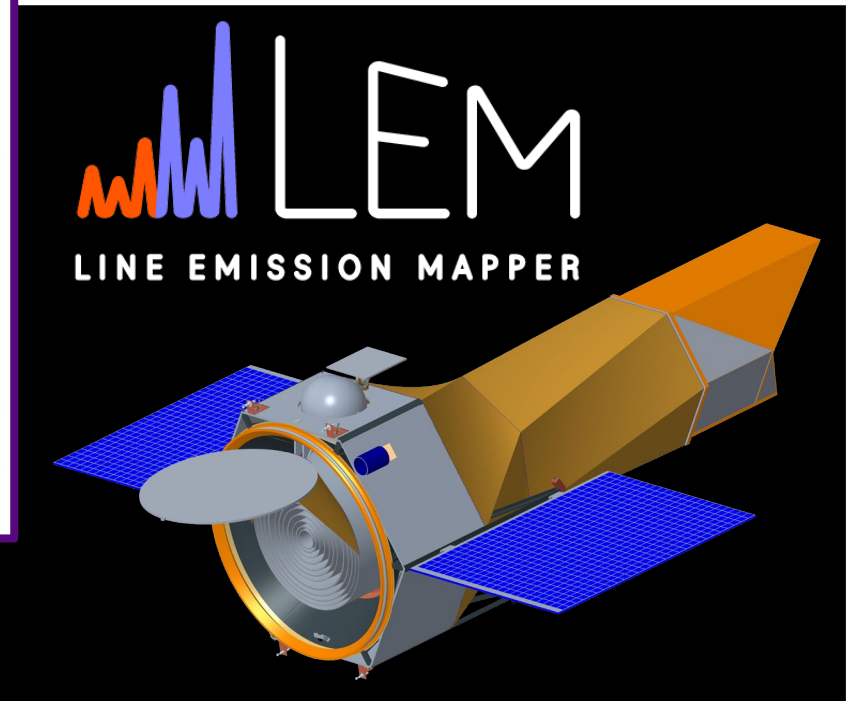
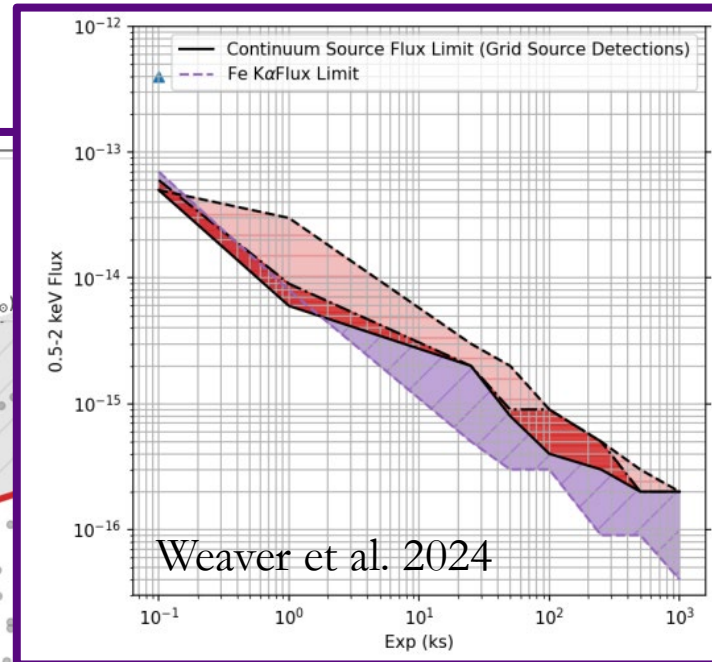
The NPP: Opportunities to Lead, Collaborate, and Learn

AGN Detection/Detectability Statistics Across the LEM Mission

Lifetime



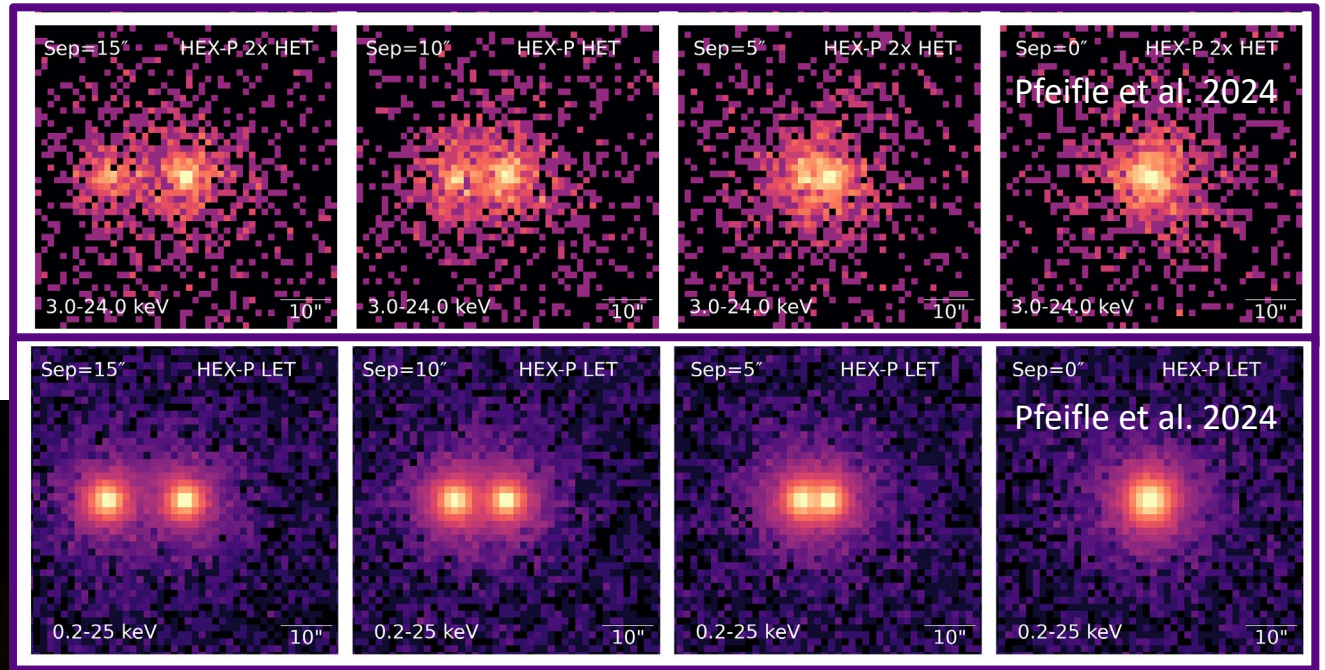
Point Source Sensitivity Limits



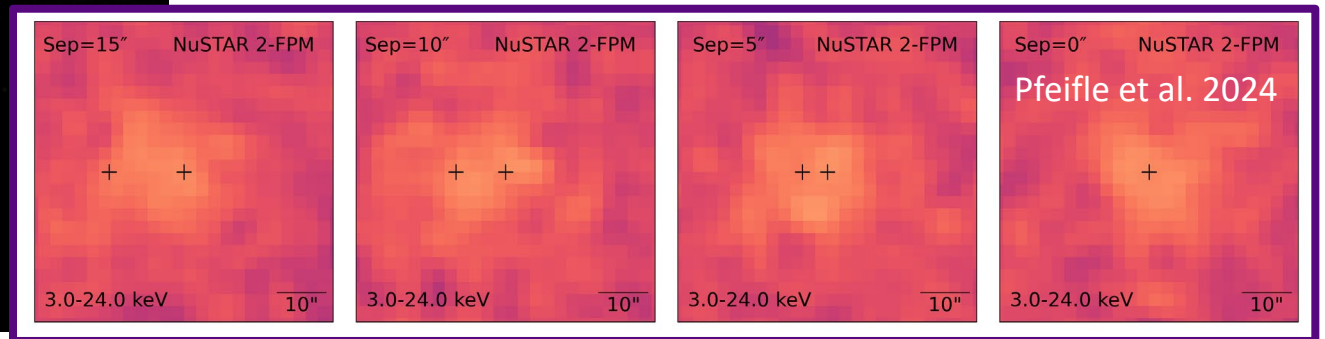
The NPP: Opportunities to Lead, Collaborate, and Learn



Simulated X-ray dual AGNs with $<15''$ separations with a next-gen broadband, hard X-ray Instrument



vs. our current capabilities with NuSTAR:



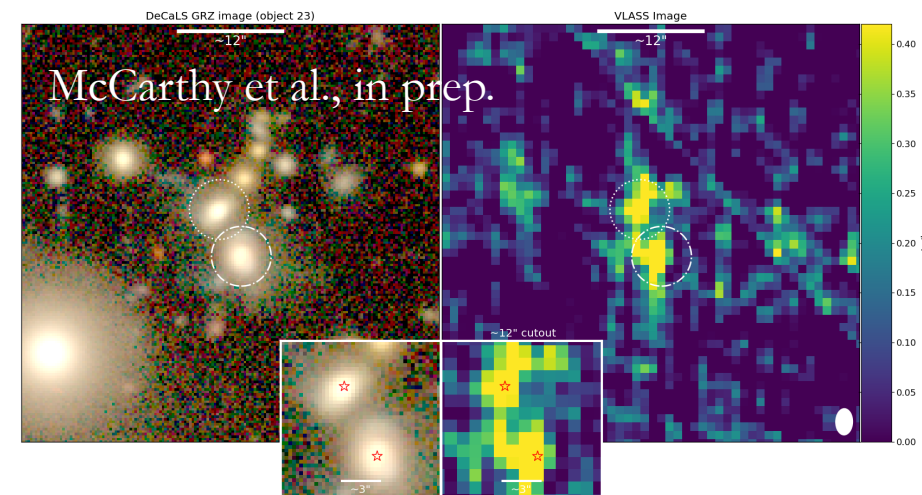
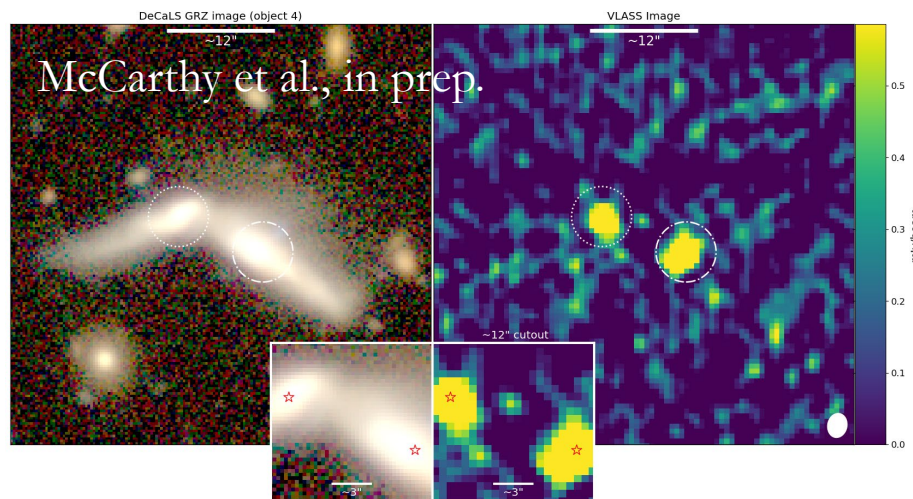
The NPP: Opportunities to Lead, Collaborate, and Learn

As an NPP, I've gotten the opportunity to advise and collaborate with post-back student Miranda McCarthy here at GSFC

Miranda is leading our radio census for mid-IR selected dual AGNs using data from the VLA All Sky Survey and FIRST

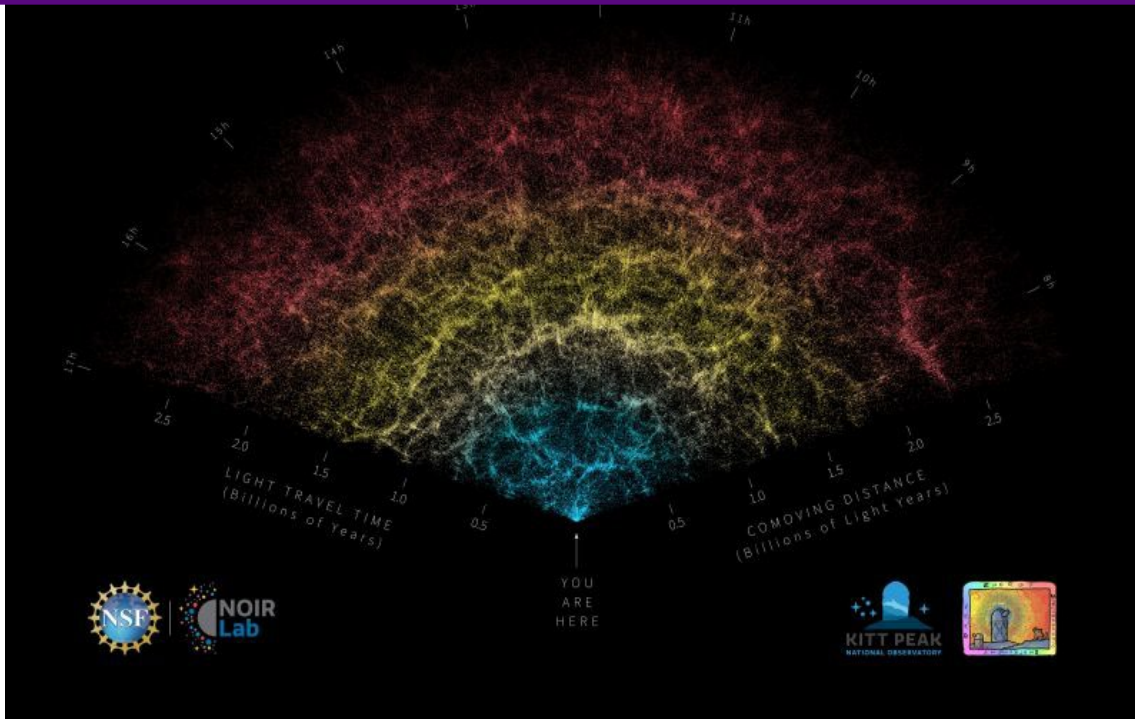


Miranda McCarthy (They/them)
Post-Baccalaureate Student
SURA, CREST II, NASA GSFC



The NPP: Opportunities to Lead, Collaborate, and Learn

And through my NPP work I have forged (or am currently forging) new science partnerships with the **Dark Energy Survey Instrument Collaboration** and the *eROSITA* Collaboration to help drive forward dual AGN science.



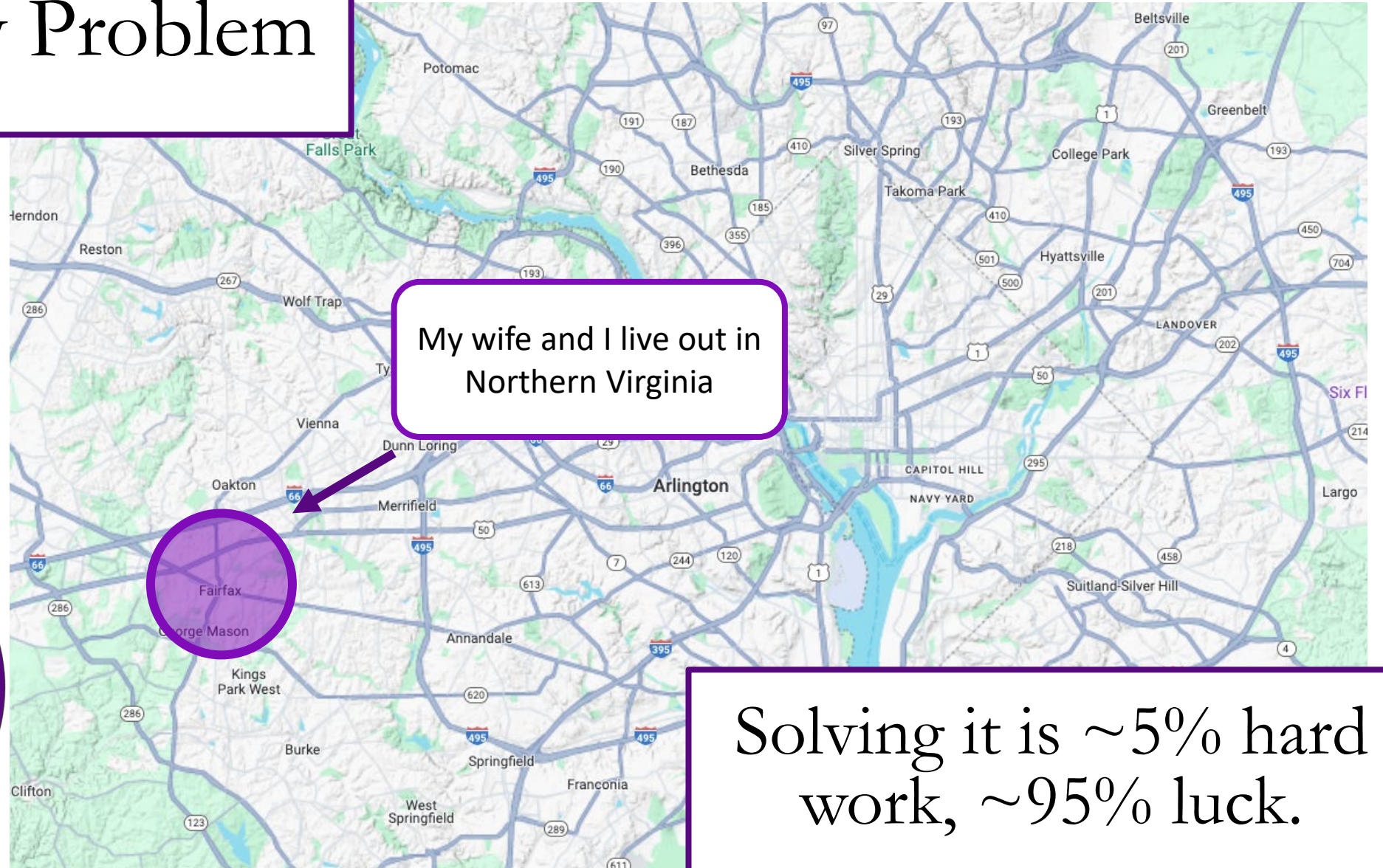
The NPP: Your Advisor is the Key



Dr. Kimberly Weaver

- I have been **incredibly** lucky to have Kim Weaver as my advisor.
 - Was/is willing and able to support my science programs
 - Was/is open to my new ideas and lines of inquiry
 - Provides(d) guidance on research activities and navigating postdoc life
 - Provides(d) the right balance of guidance and freedom
 - Available to impart her knowledge and expertise
- I could not have accomplished or pursued the research ideas that I have during my NPP without her support, guidance, and encouragement.
- Your advisor is the key to a successful (and healthy/happy) NPP tenure!

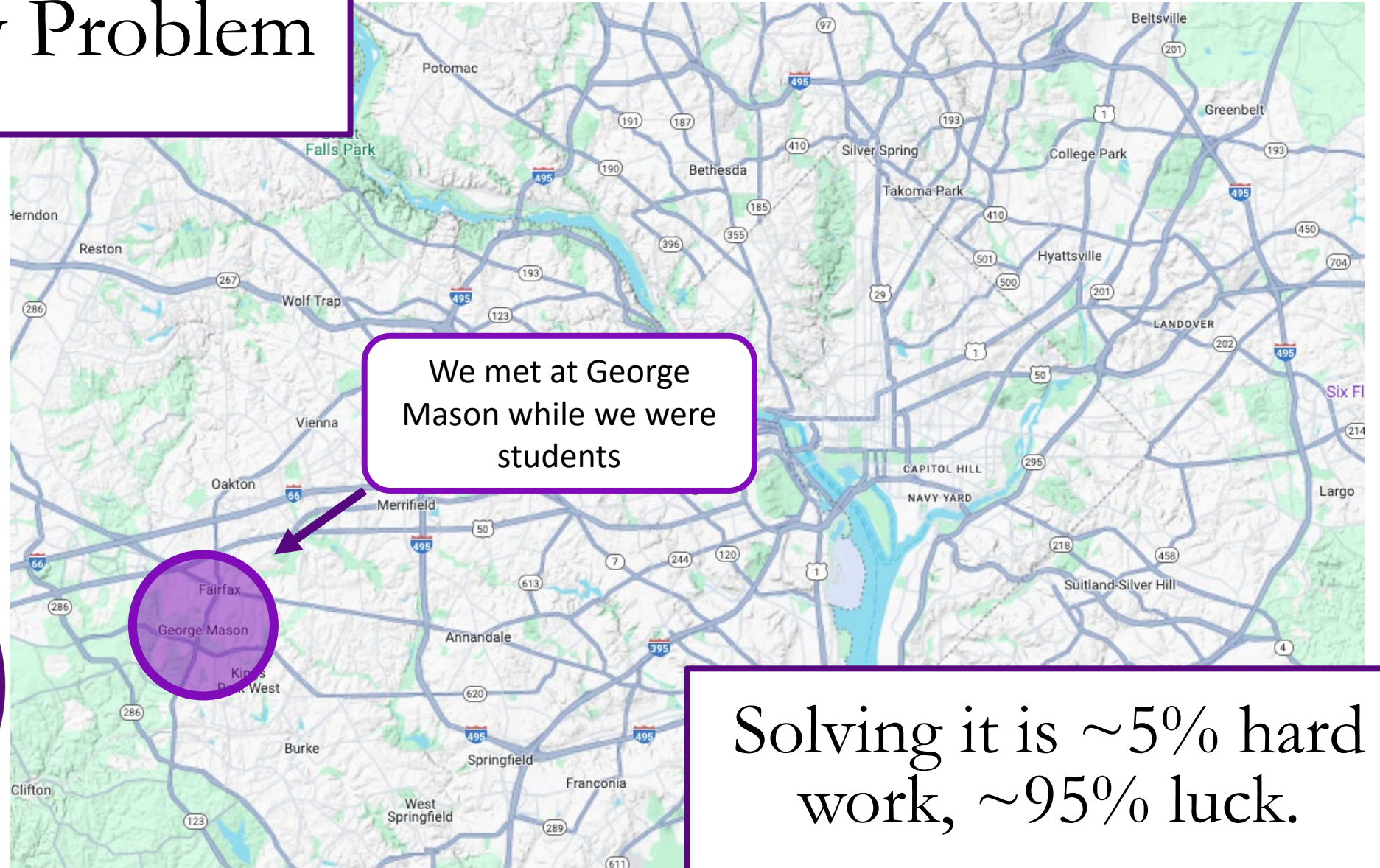
Two Body Problem



My wife and I live out in Northern Virginia

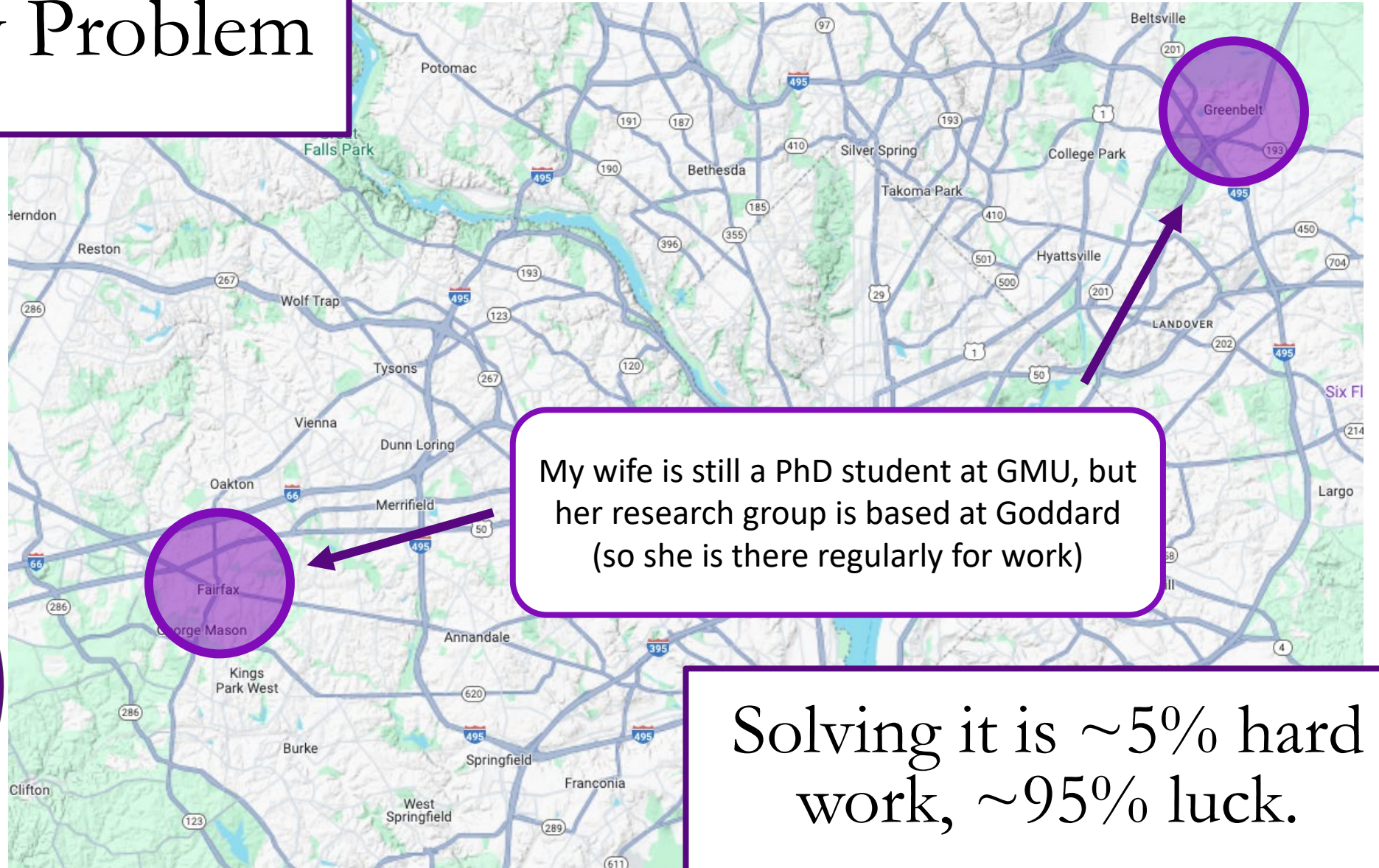
Solving it is $\sim 5\%$ hard work, $\sim 95\%$ luck.

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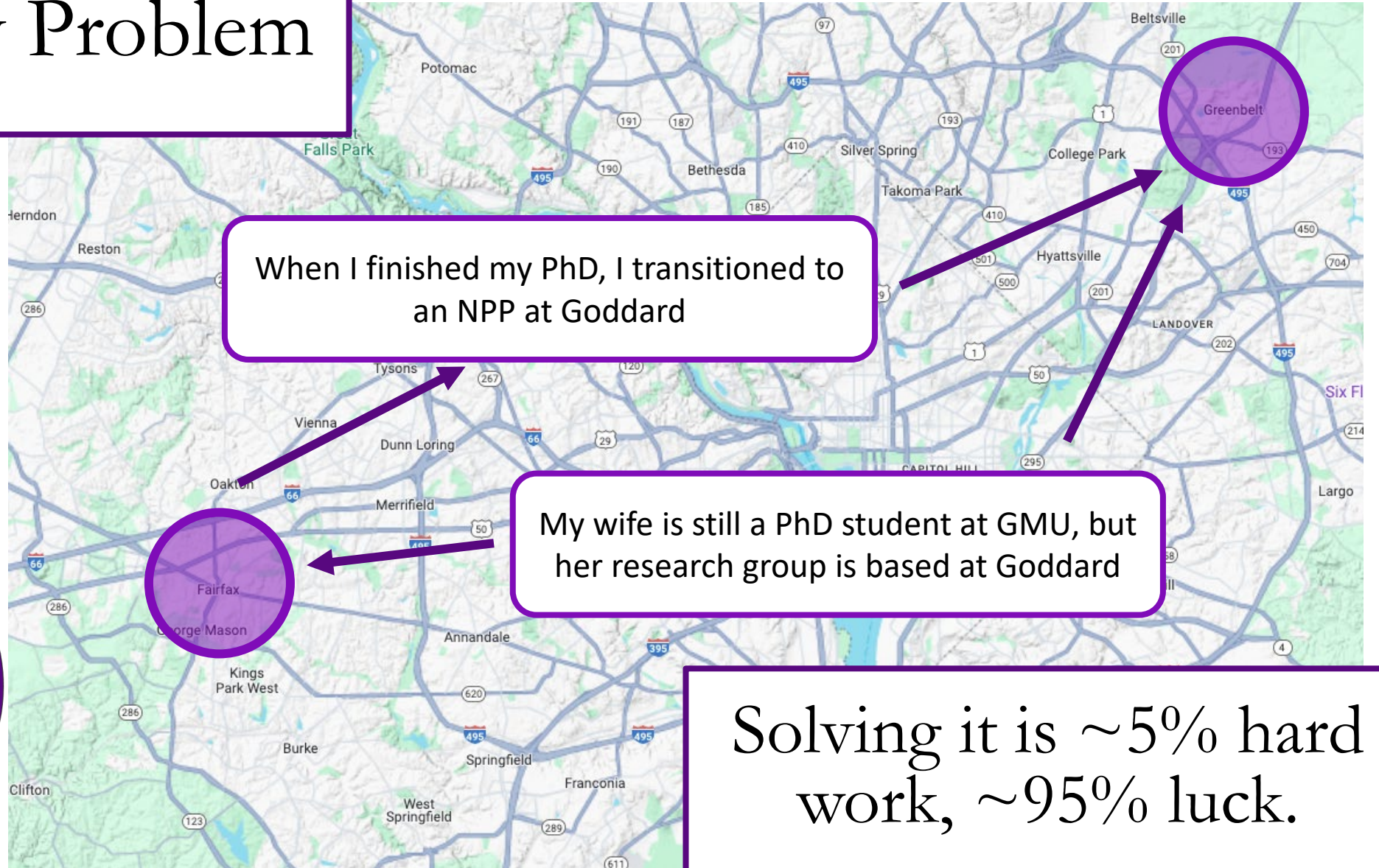


Two Body Problem

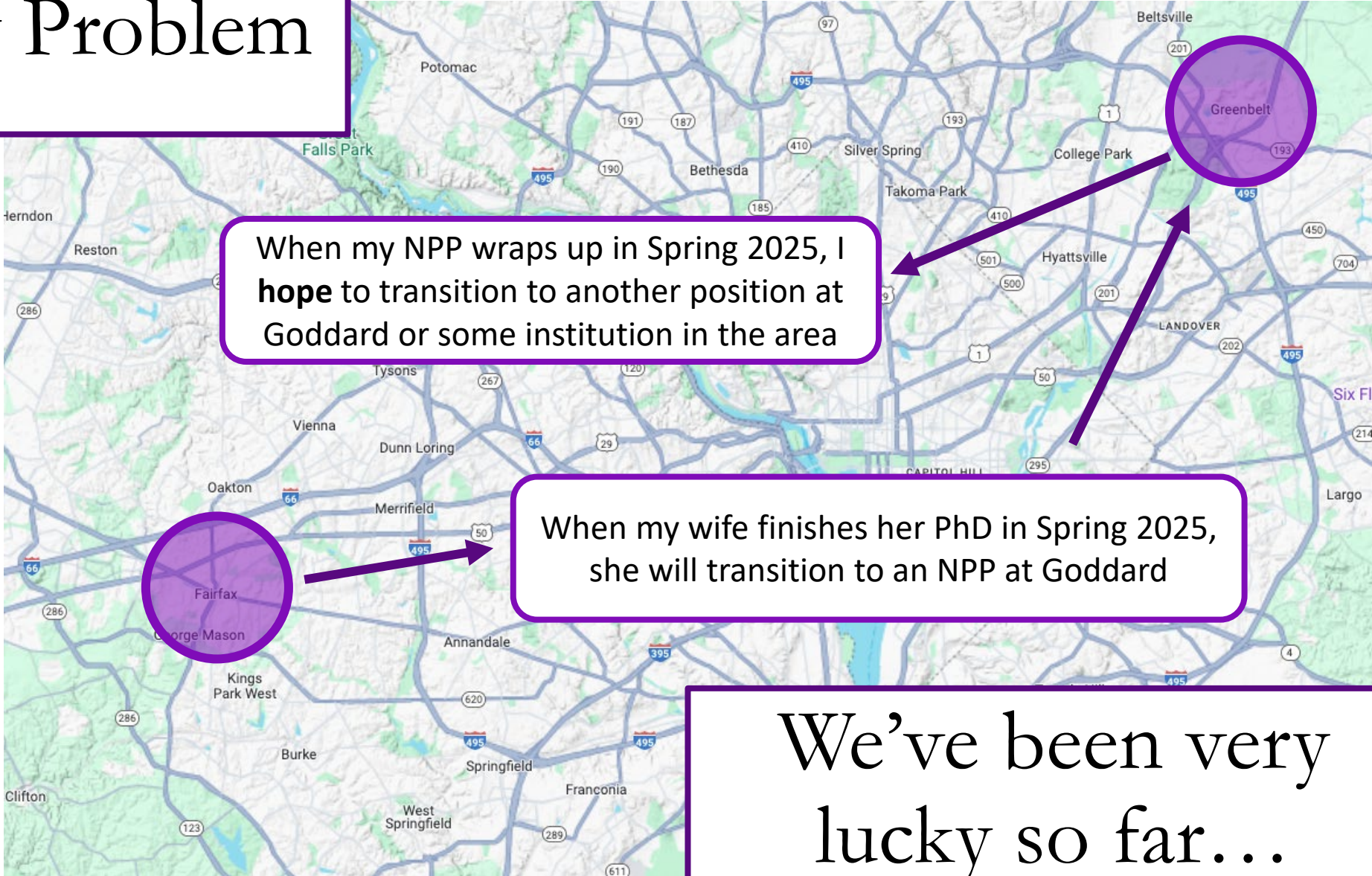
When I finished my PhD, I transitioned to an NPP at Goddard

My wife is still a PhD student at GMU, but her research group is based at Goddard

Solving it is $\sim 5\%$ hard work, $\sim 95\%$ luck.



Two Body Problem

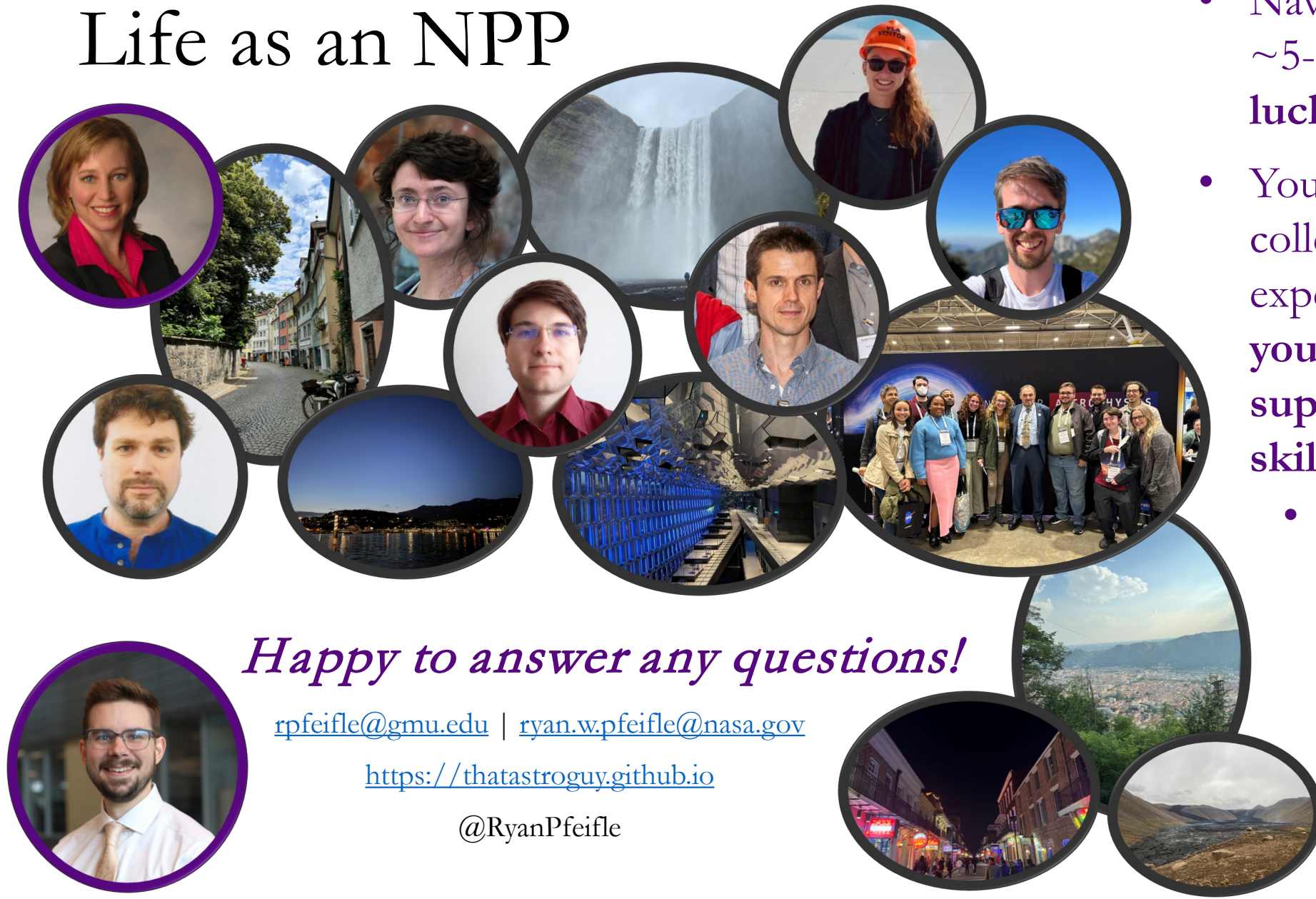


When my NPP wraps up in Spring 2025, I **hope** to transition to another position at Goddard or some institution in the area

When my wife finishes her PhD in Spring 2025, she will transition to an NPP at Goddard

We've been very lucky so far...

Life as an NPP



- Navigating post-PhD life is ~5-10% hard work, ~90% luck and who you work with!
- Your advisor and your colleagues make or break your experience: **surround yourself with friendly, supportive folks with diverse skillsets.**
 - Learn the delicate balance of research/opportunities vs. time
 - You need work-life balance
 - Find your niche

Happy to answer any questions!

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<https://thatastroguy.github.io>

@RyanPfeifle