



The MACRO Consortium



RLMT In The Classroom: Integrating Robotic Observations Into Undergraduate Curricula

AAS 244
Madison, WI

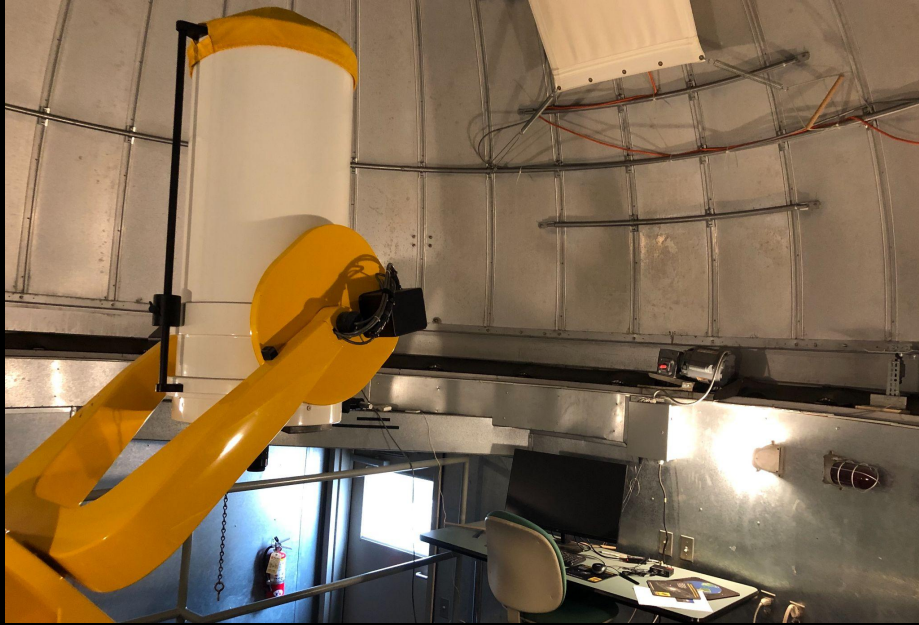
Assistant Professor of Astronomy, Anna Williams (alwilliams@macalester.edu)
Macalester College



IOWA

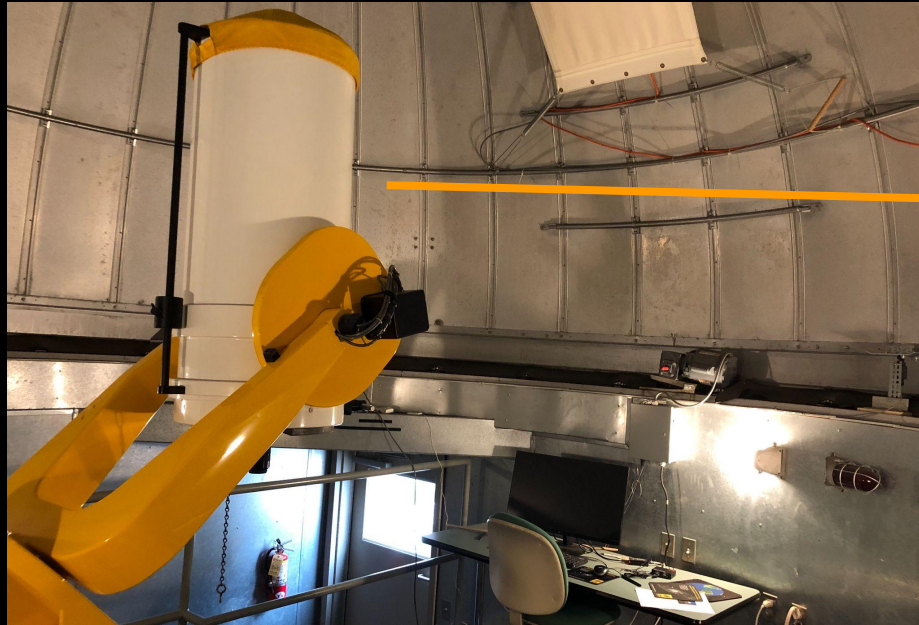


BIG upgrade for Macalester

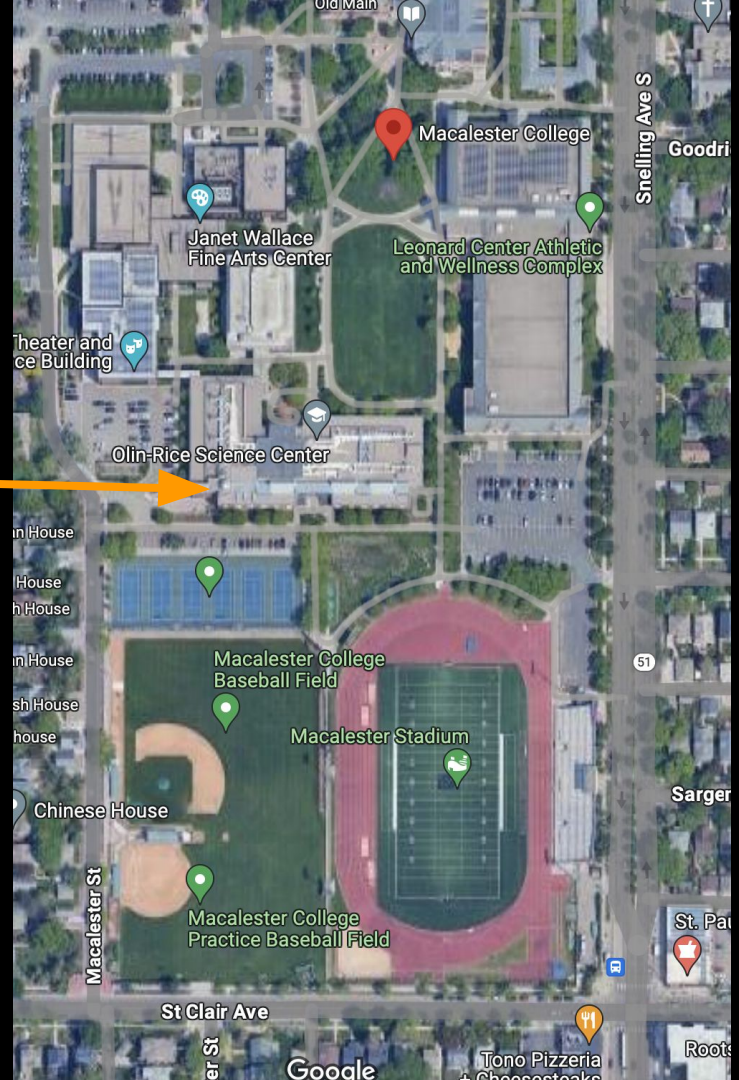


The Old

BIG upgrade for Macalester



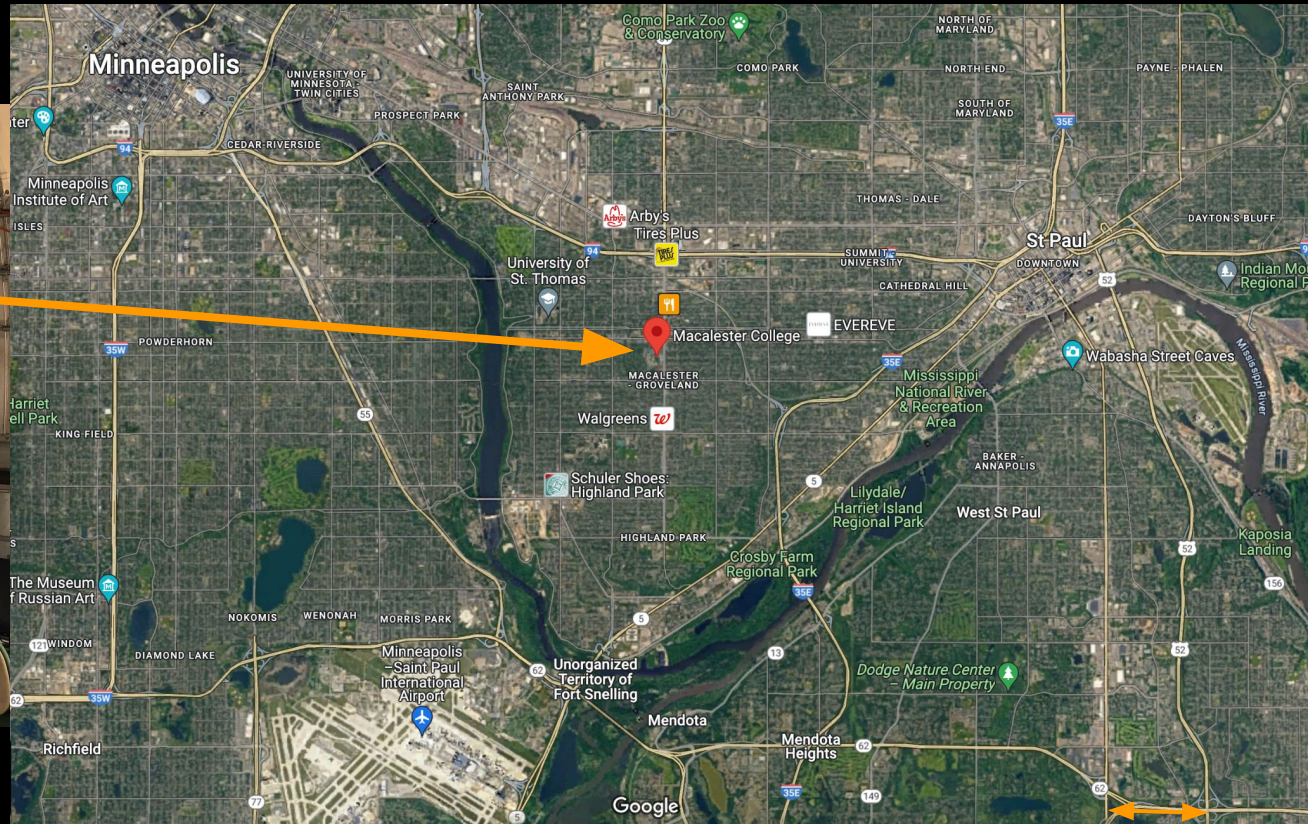
The Old



BIG upgrade for Macalester

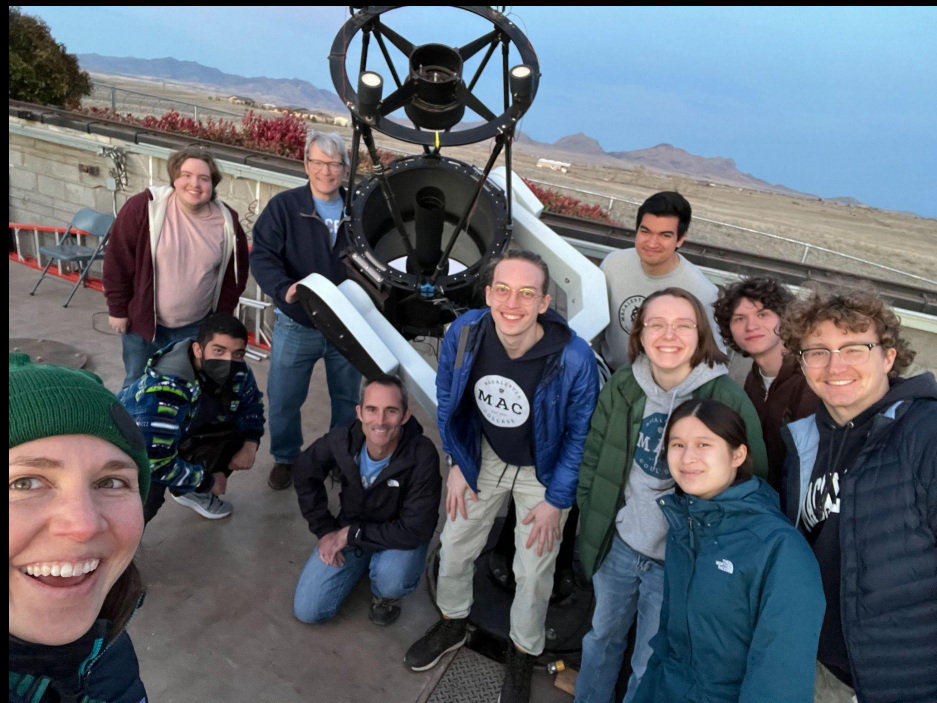


The Old



1 mile

BIG upgrade for Macalester



The New!



↔
1 mile



RLMT in the Classroom since Spring '23

Augustana College:

- *ASTR367-Advanced Astronomical Instrumentation* (Spring '24)
- *NEW Astronomy minor* will begin Fall '24

Iowa University:

- *ASTR1070-Stars, Galaxies, and the Universe* (Fall '23 & Spring '24)
- *ASTR4850-Observational Techniques in Astronomy* (Fall '23)

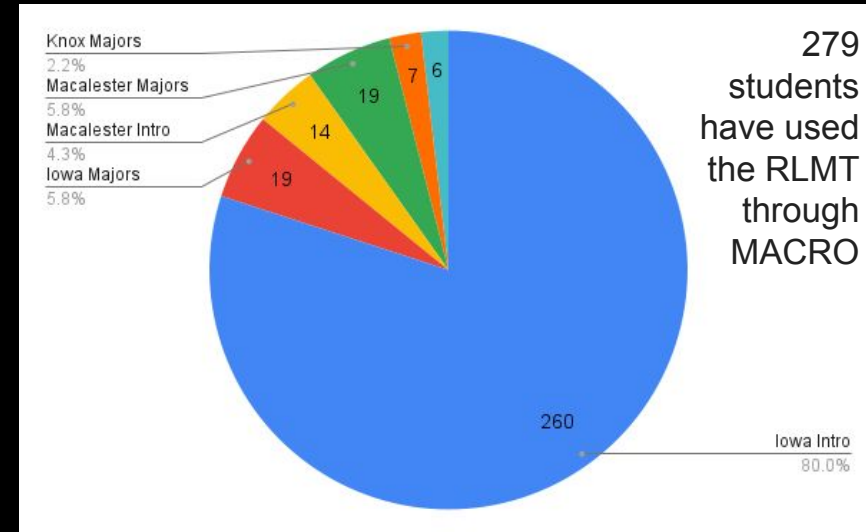
Knox College

- *PHYS245-Observational Astronomy* (Spring '24)

Macalester College

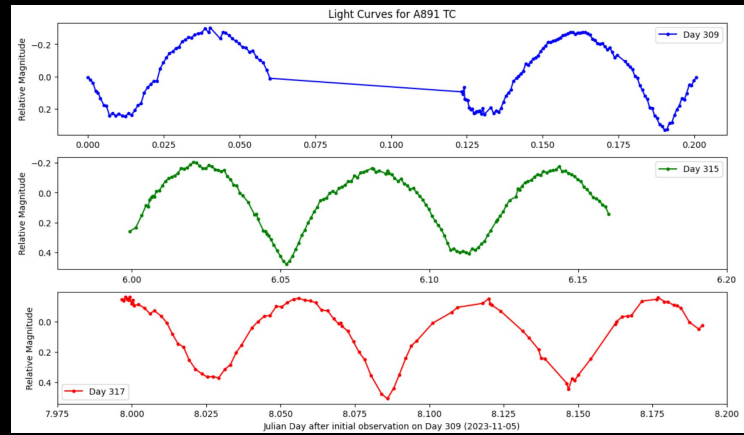
- *PHYS 394-Special Topics* (Spring '23)
- *PHYS 194-The Solar System and Beyond* (Fall '23)
- *PHYS 440-Observational Astronomy* (Spring '24)

Tri-color Image from Iowa's *ASTR1070*

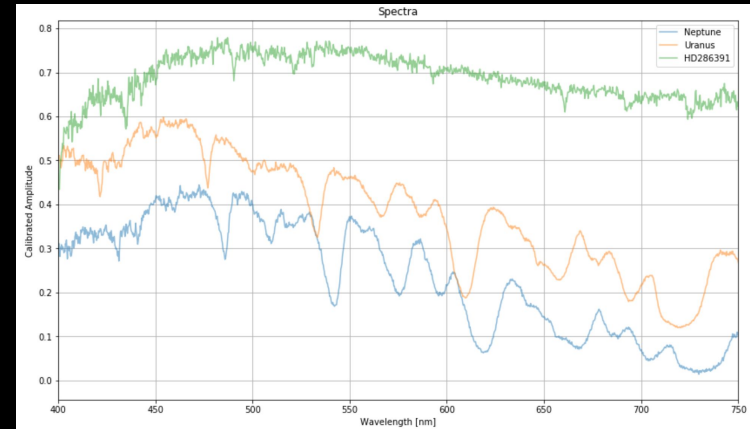


Introductory Astronomy

- Asteroid Light Curve
 - First Year Course Macalester Fall '23
- Reflectance Spectra of Gas Giants
 - First Year Course Macalester Fall '23
- RGB Images + Measure the diameter of a galaxy
 - ASTR 1070 University of Iowa Spring '24



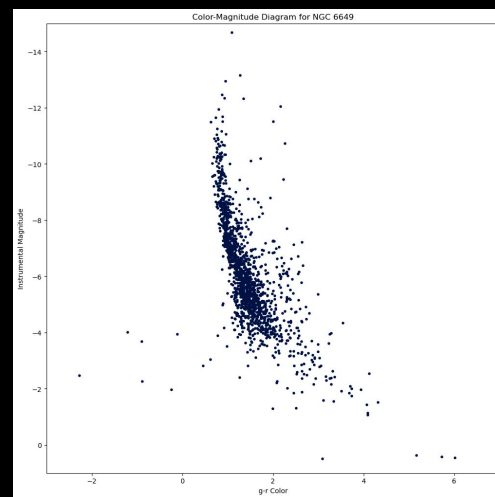
Asteroid light curves from Mac's *PHYS194*



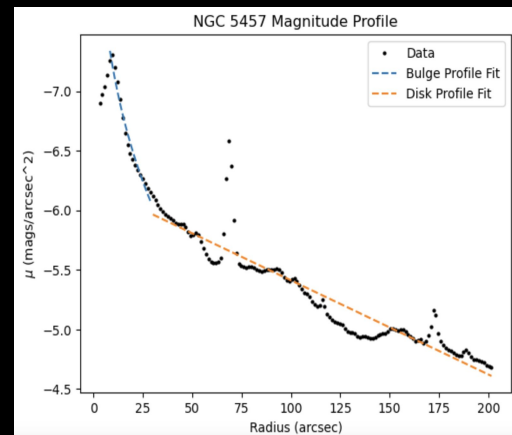
Low-res grism from Mac's *PHYS194*

Observational Astronomy for Majors

- Open Cluster Color-Magnitude Diagrams (Knox College Spring '24)
- Student Projects
 - Variables and Transients
 - Cataclysmic Variables (Macalester College Spring '24)
 - Eclipsing Binaries (Macalester College Spring '24)
 - Exoplanets (Augustana & Macalester Spring '24)
 - Supernova (Macalester College Spring '24)
 - Surface brightness profiles
 - Star clusters (Macalester College Spring '24)
 - Galaxies (Knox College Spring '24)
 - Spectroscopy
 - Spectral-type identification (Macalester College Spring '24)

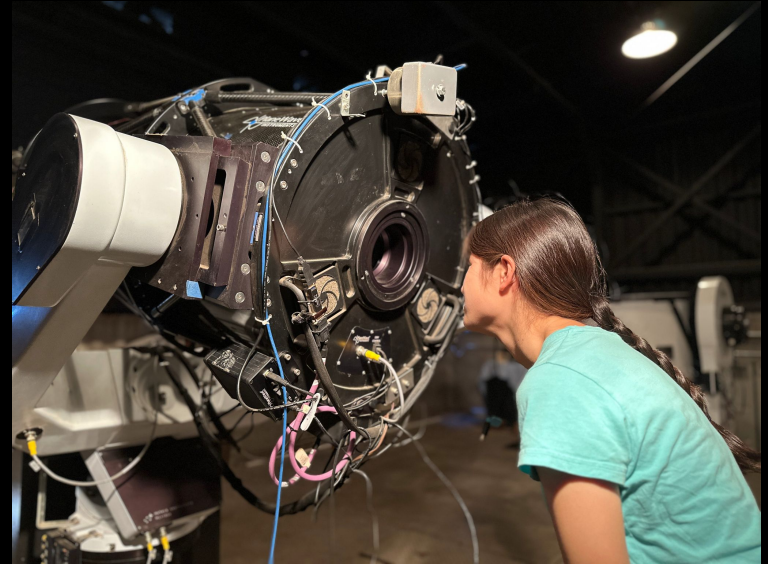


CMD from Knox's *PHYS245*



Independent project from Knox

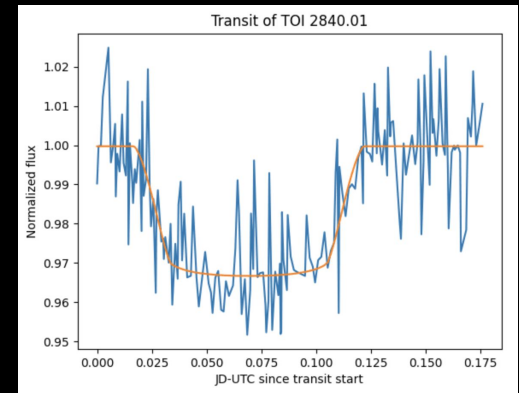
Goal: Provide students with authentic astronomy research experience at all levels of the curriculum



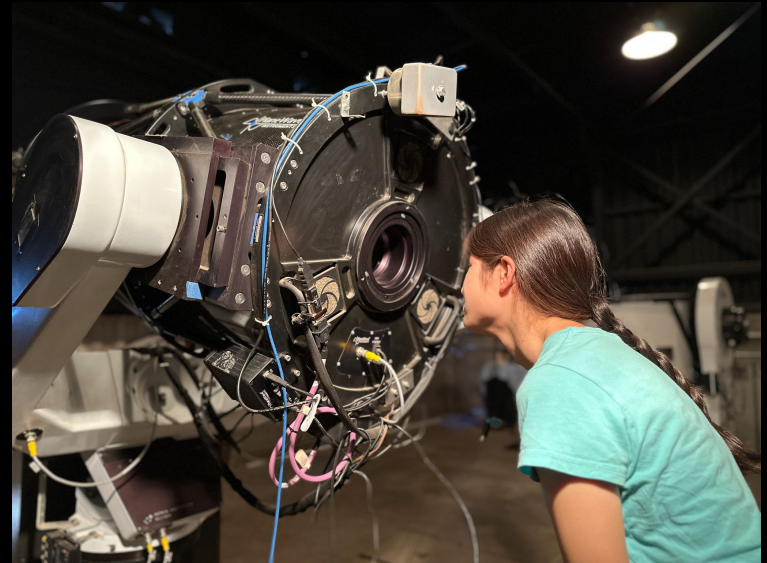
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Goal: Provide students with authentic astronomy research experience at all levels of the curriculum

- Quantitative reasoning
- Communication

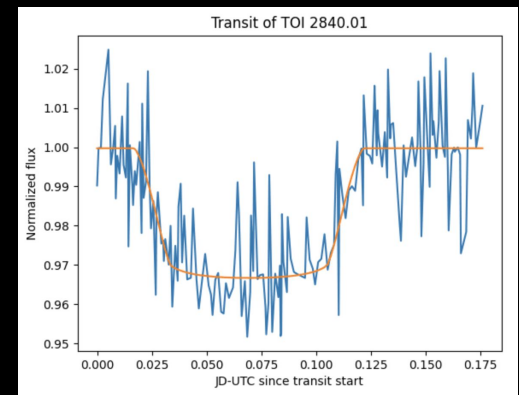


Exoplanet transit Spring '24

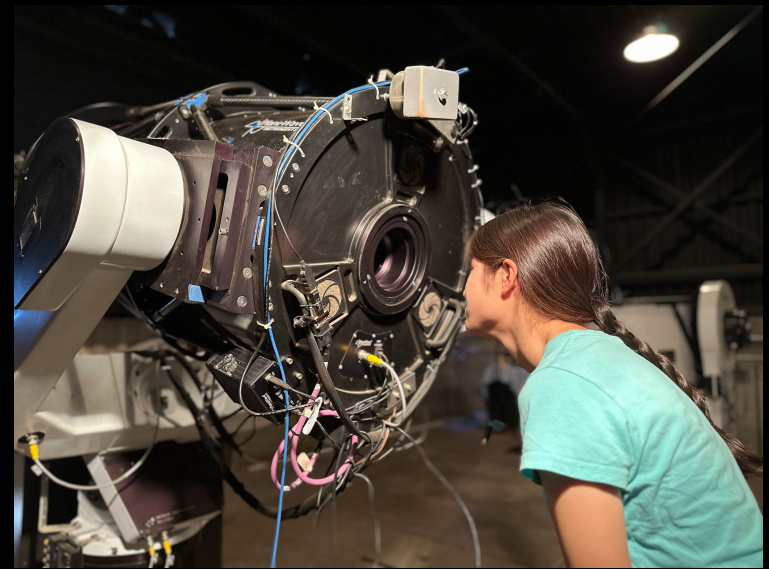


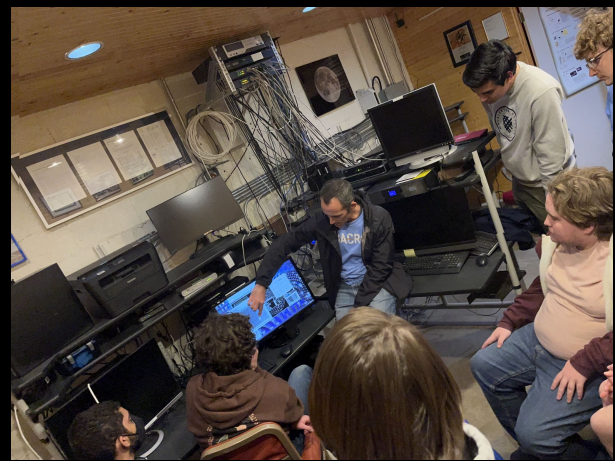
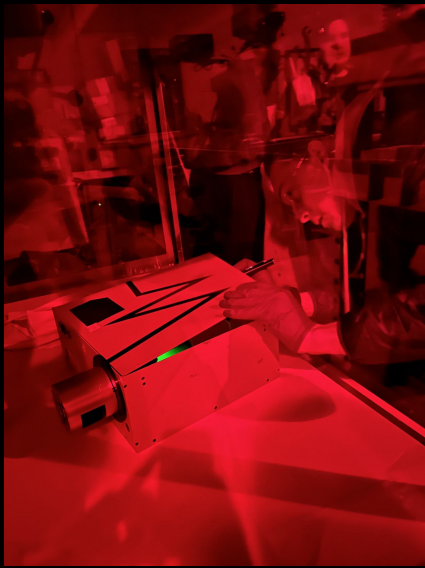
Goal: Provide students with authentic astronomy research experience at all levels of the curriculum

- Quantitative reasoning
- Communication
- Project management
- Project ownership
- Collaboration
- Learn how to learn!

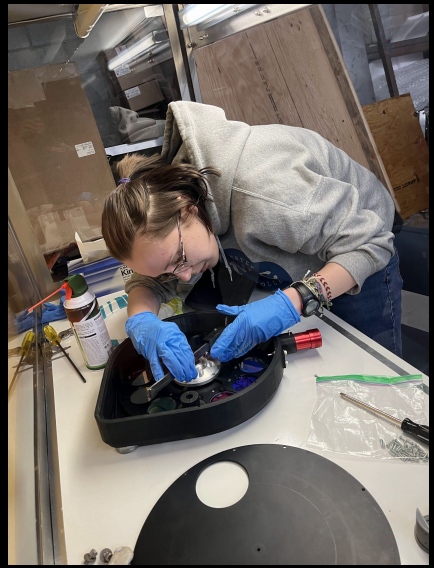
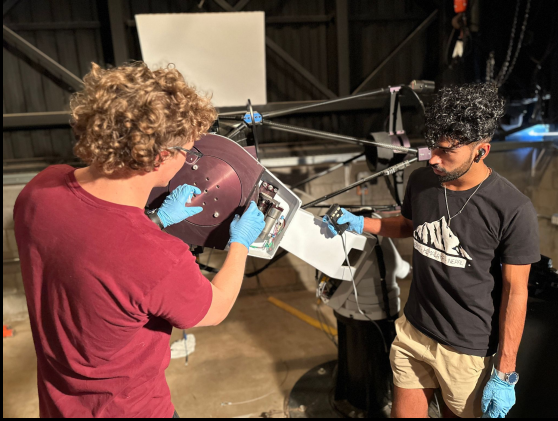


Exoplanet transit Spring '24





Thank you!



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