Dr. Rob Zellem (he/him)

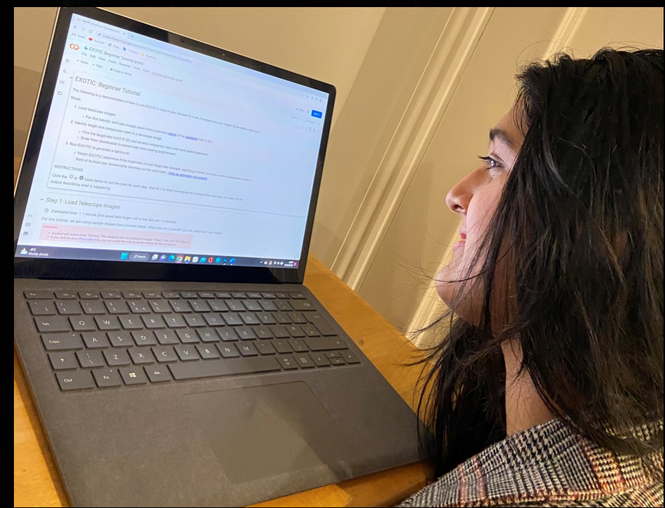
EXOPLANET WATCH

Inviting Citizen Scientists to Observe Transiting Exoplanets

Jet Propulsion Laboratory
California Institute of Technology

OVERVIEW

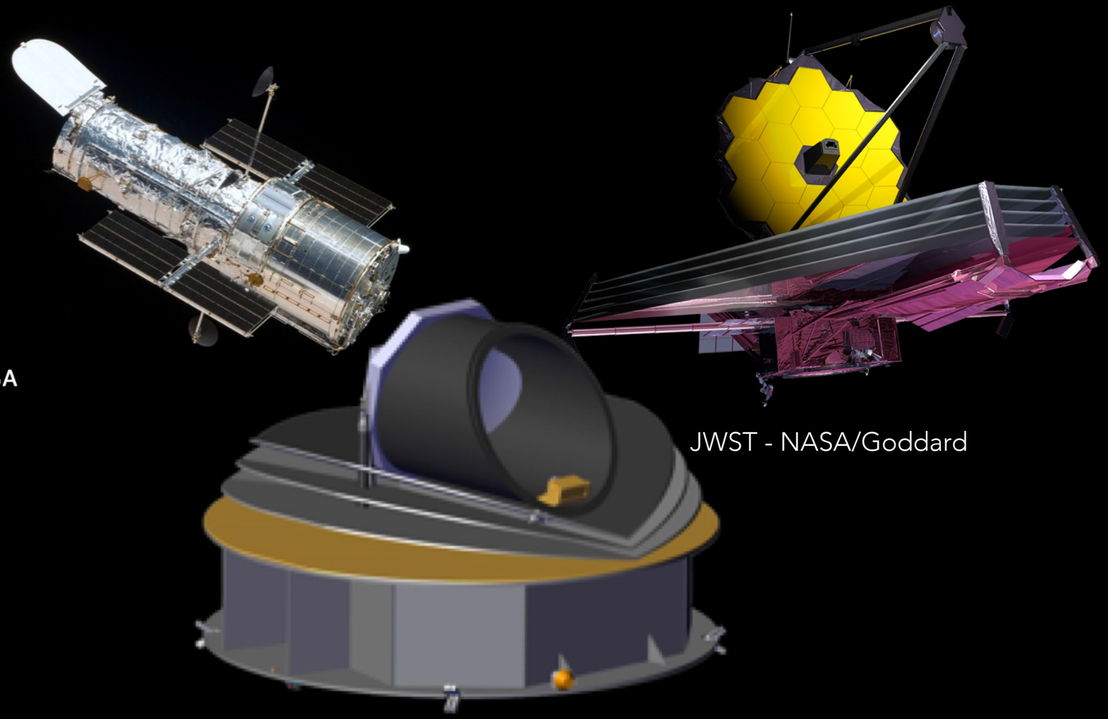
- Announcing the general audience launch of Exoplanet Watch: a citizen science project to monitor transiting exoplanets
  - Limited launch with amateur and professional astronomers since 2021
- Anyone and everyone can participate!
  - Learn how exoplanet science is really done!



TRANSITS

- Measures the change in brightness as the planet passes in front of or behind its host star
- Also allow us to study a planet's atmosphere
  - Exoplanet Watch refines transit times
  - You can help!

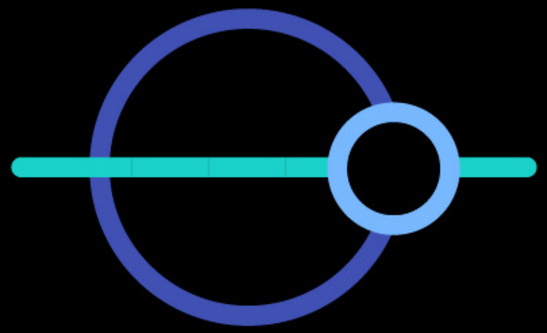
NASA



NASA

JWST - NASA/Goddard

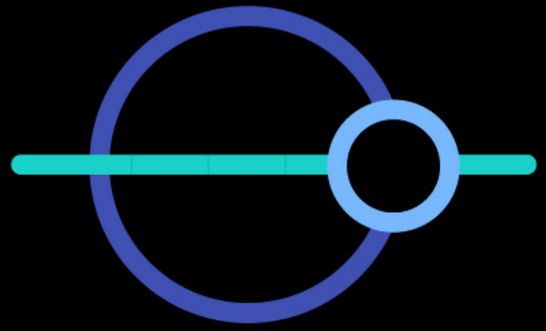
ARIEL
(artist's concept)



EXOPLANET WATCH

CITIZEN SCIENTISTS MONITORING TRANSITING EXOPLANETS

- Citizen science project to routinely observe transiting exoplanets to keep their transit times precise
  - You will help enable NASA science!



EXOPLANET WATCH

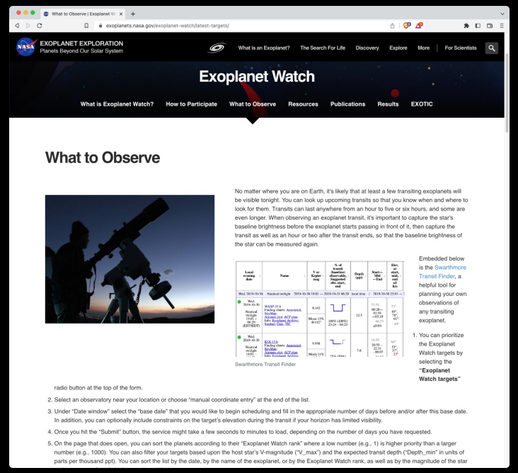
- Collaborative effort to complement existing surveys
- Data is immediately public
- Target requests by professional astronomers
- Observers are listed as co-authors
- Part of NASA’s Universe of Learning

GOALS

- Education goals: to engage and teach the public about exoplanets and enable them to do science
- Science goals: to ensure efficient use of large telescopes; discover and confirm new exoplanets; monitor stellar variability

USER EXPERIENCE

EXOPLANET WATCH



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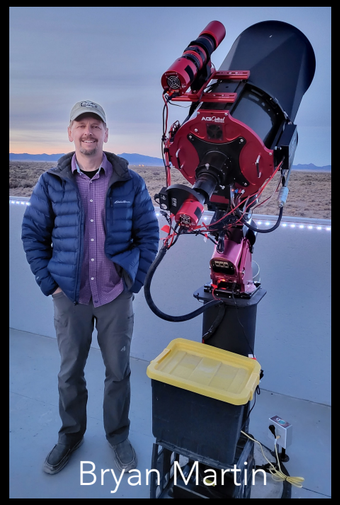


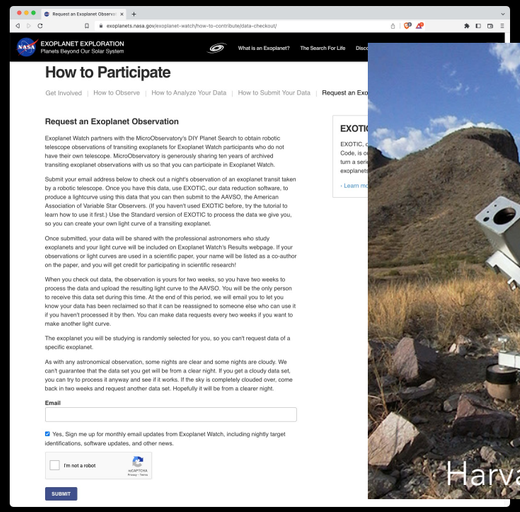
Bryan Martin

Observe

EXOTIC

AstroImageJ

Analyze



Harvard/CfA

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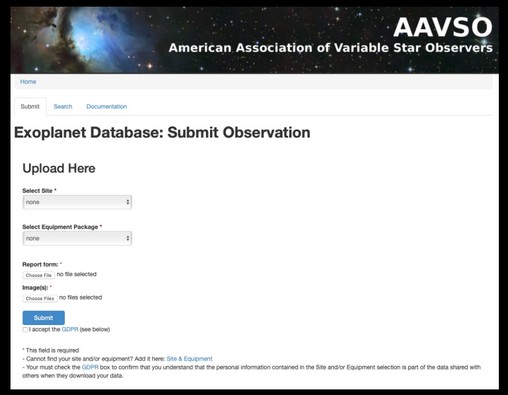

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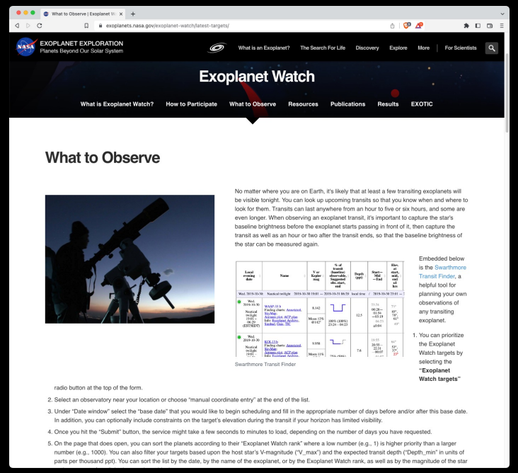

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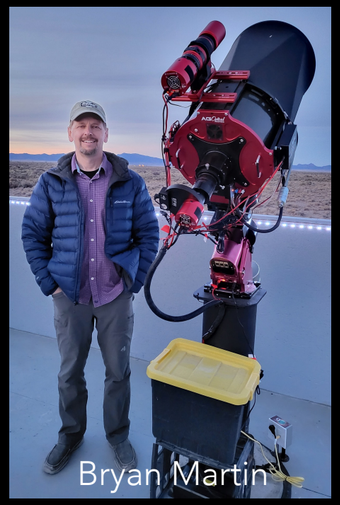

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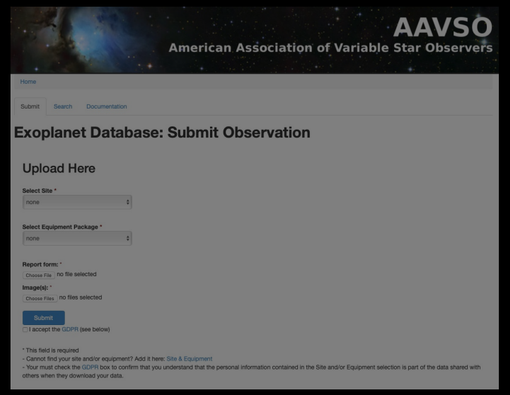

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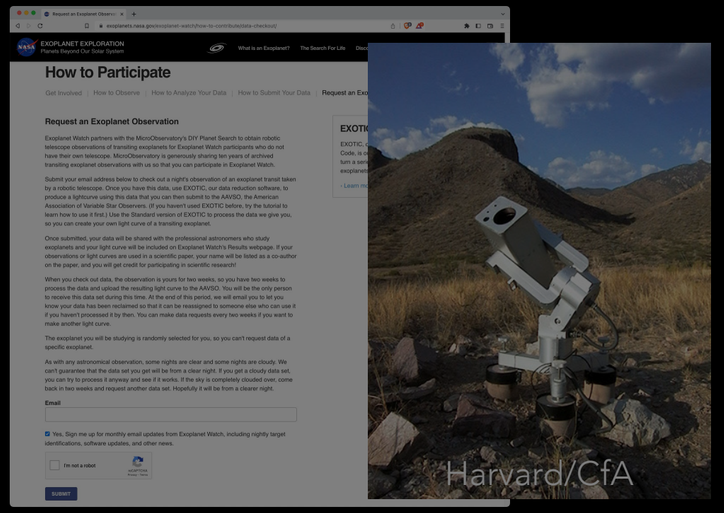

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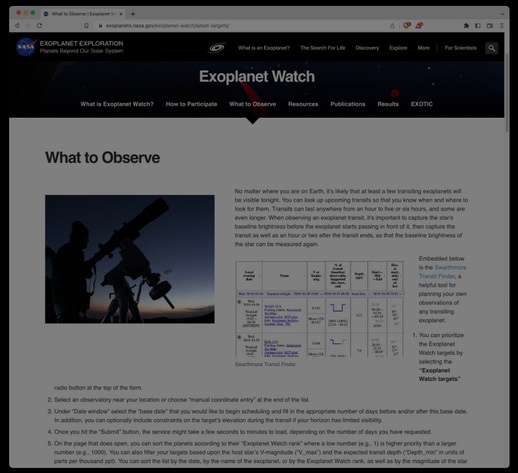

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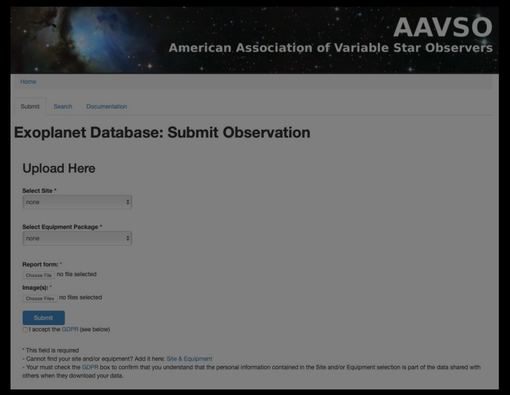

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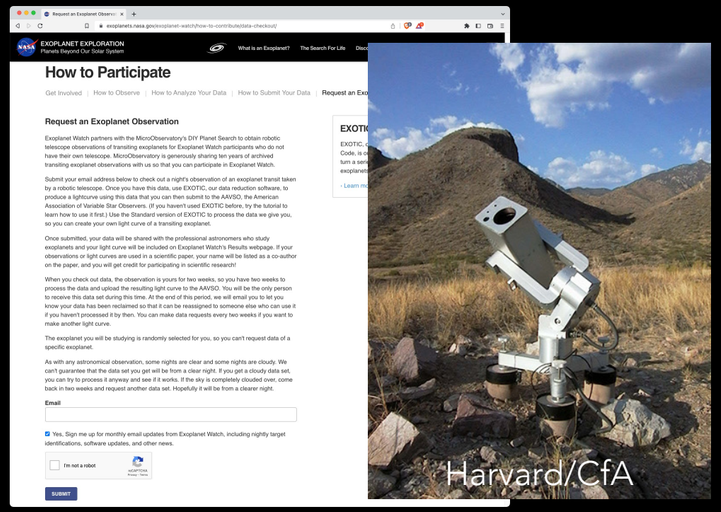

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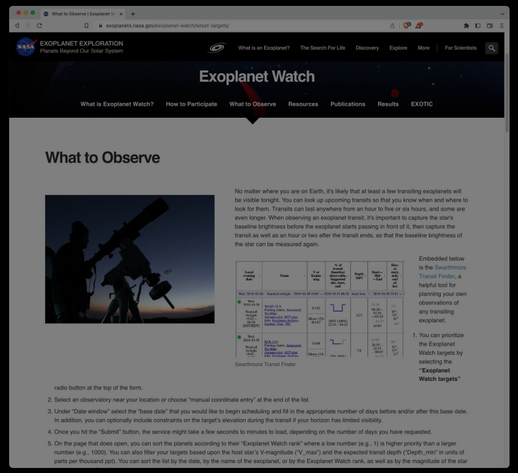

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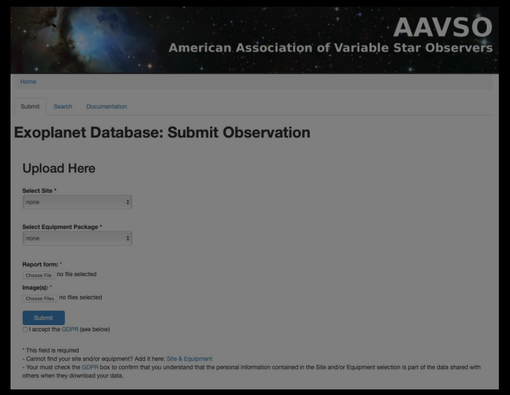

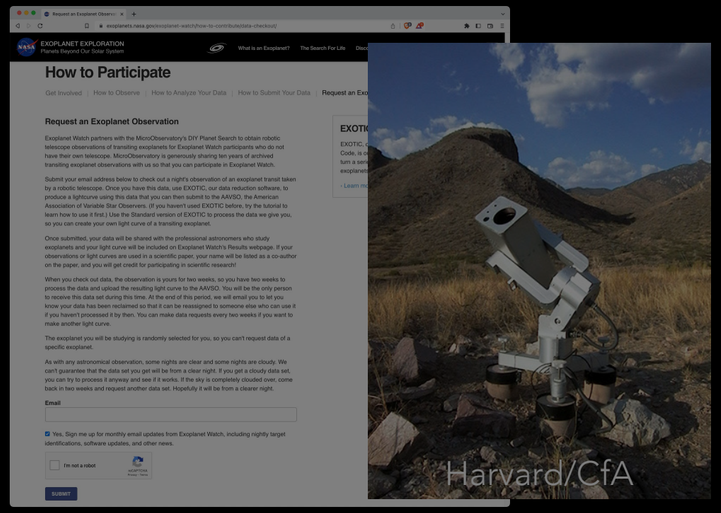

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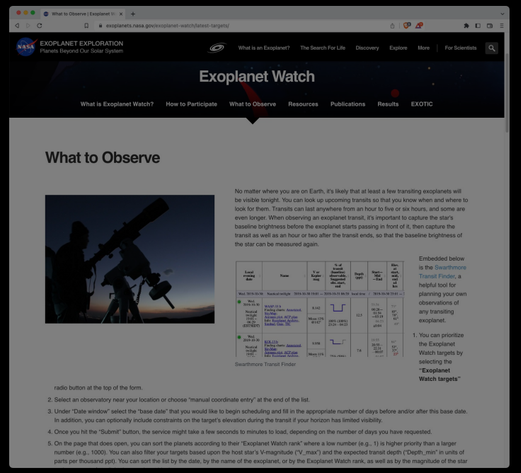

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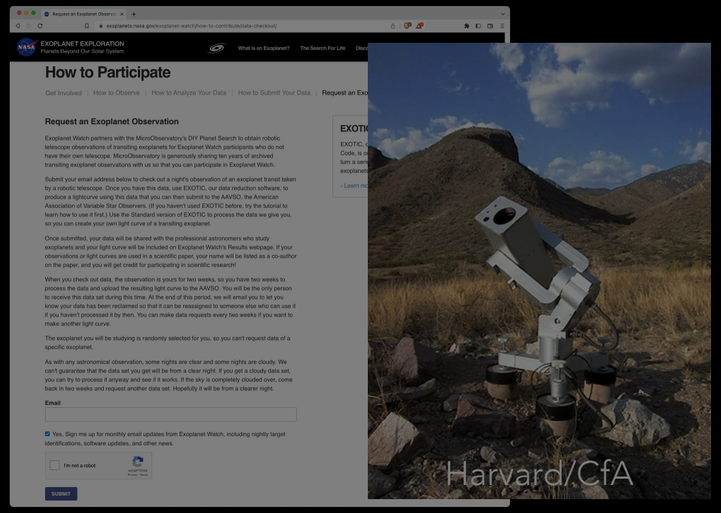

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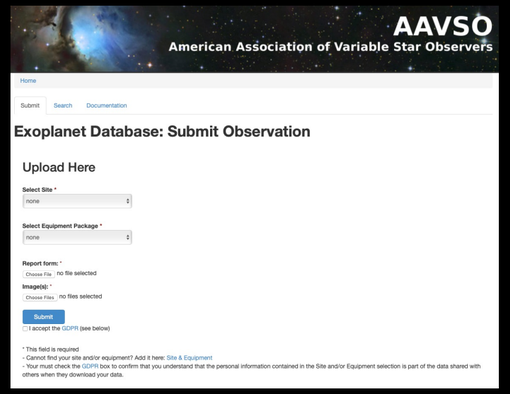

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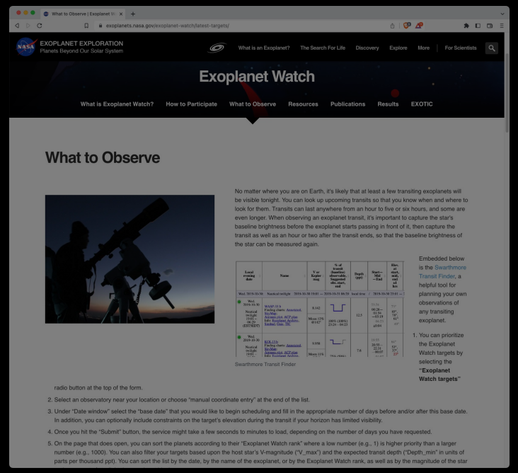

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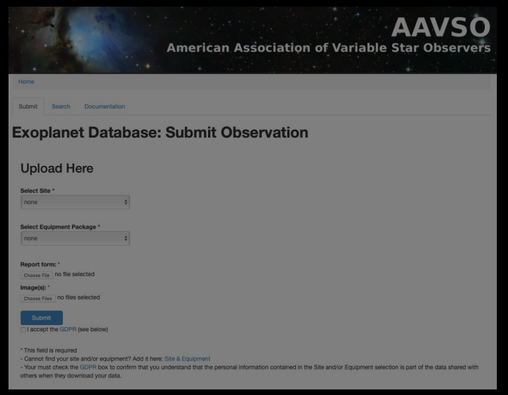

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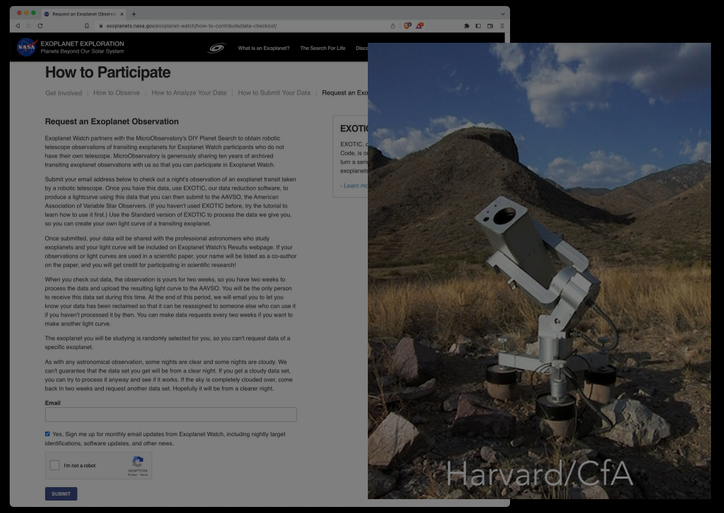
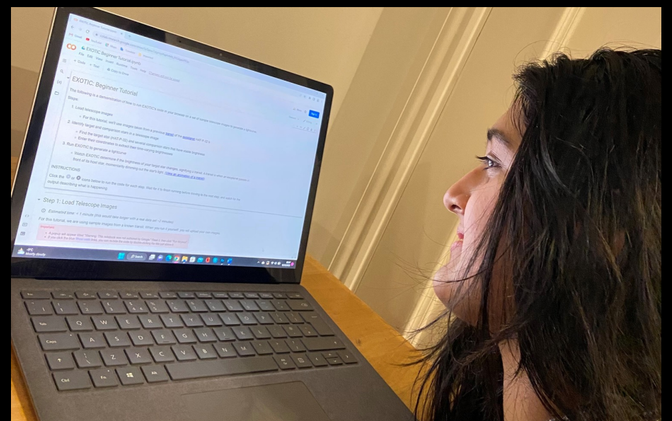
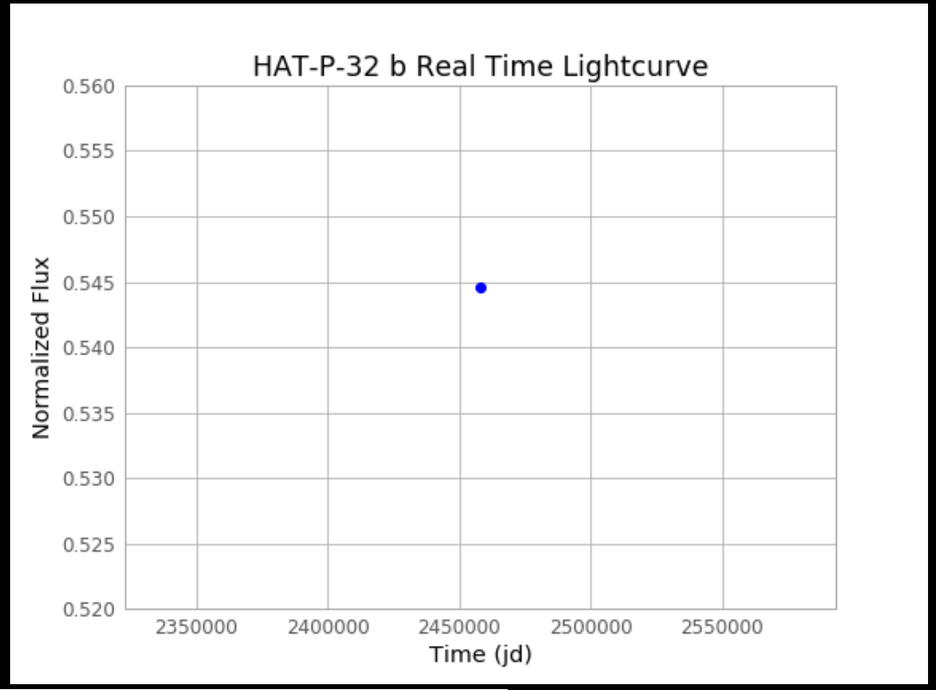


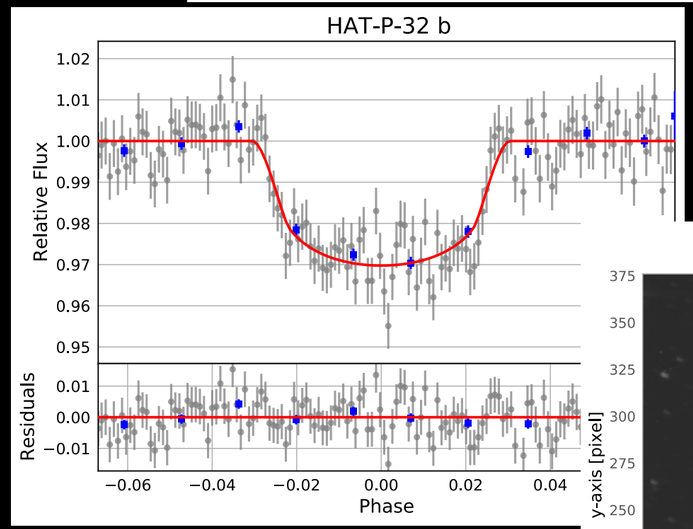
Request Data

EXOTIC

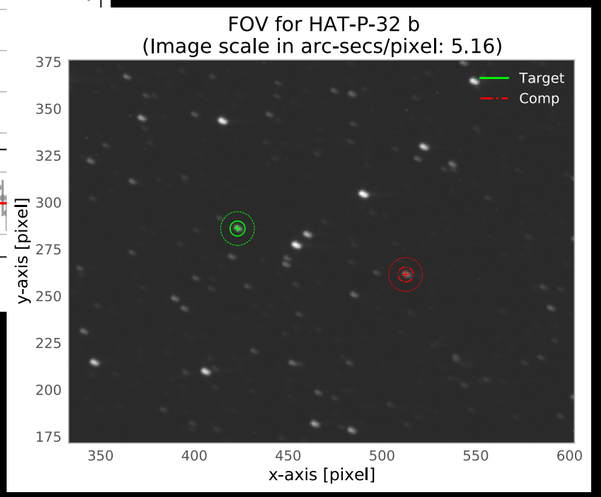
- **EXO**planet **T**ransit **I**nterpretation **C**ode
- Real astronomy analysis tool
- Teach you how science is done
- Have step-by-step tutorials on how to use



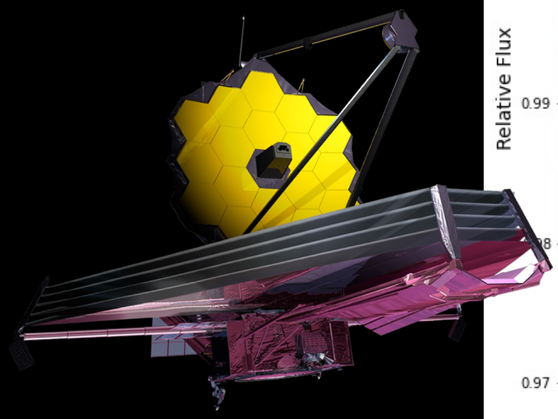




Zellem et al. 2020



DEC 2021 OBSERVING CAMPAIGN



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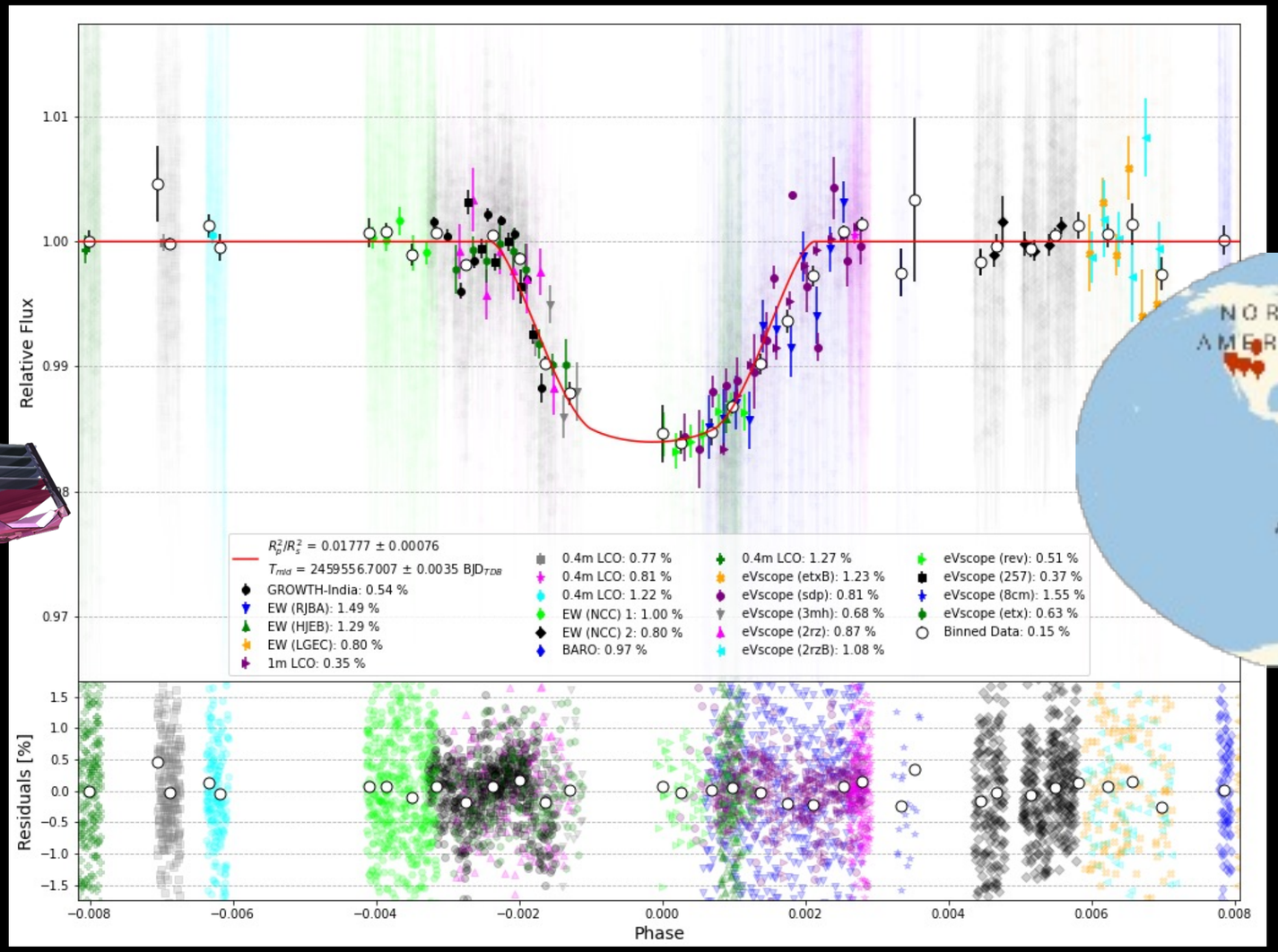

24 facilities; <=0.7-m (30-in)

Pearson et al. (2022)

EXOPLANET WATCH

Get started here:
exoplanets.nasa.gov/exoplanet-watch

Exoplanet Watch Workshop
Jan 18, 2023, 4 PM EST