

# Exploring Exoplanets in OpenSpace

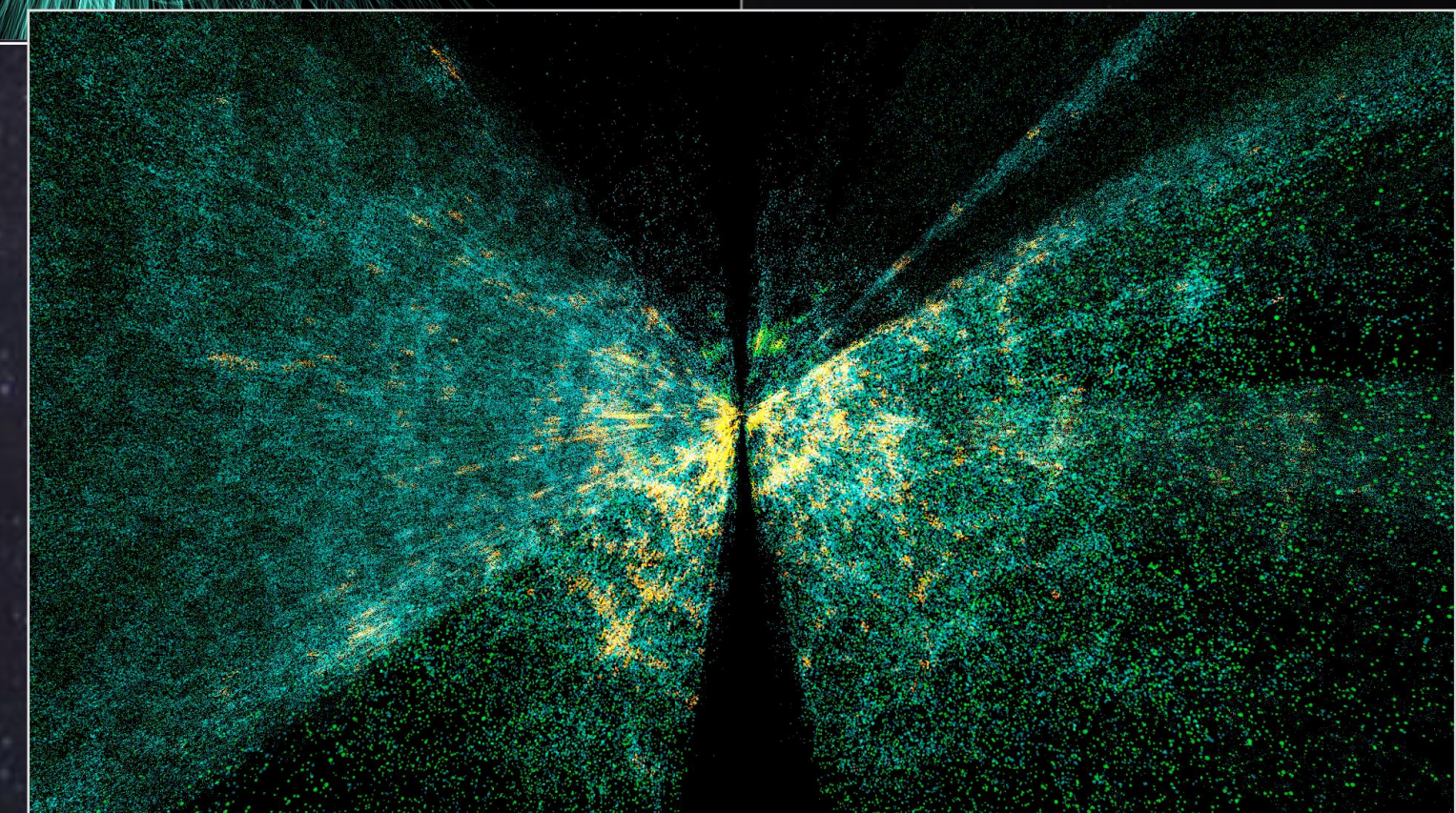
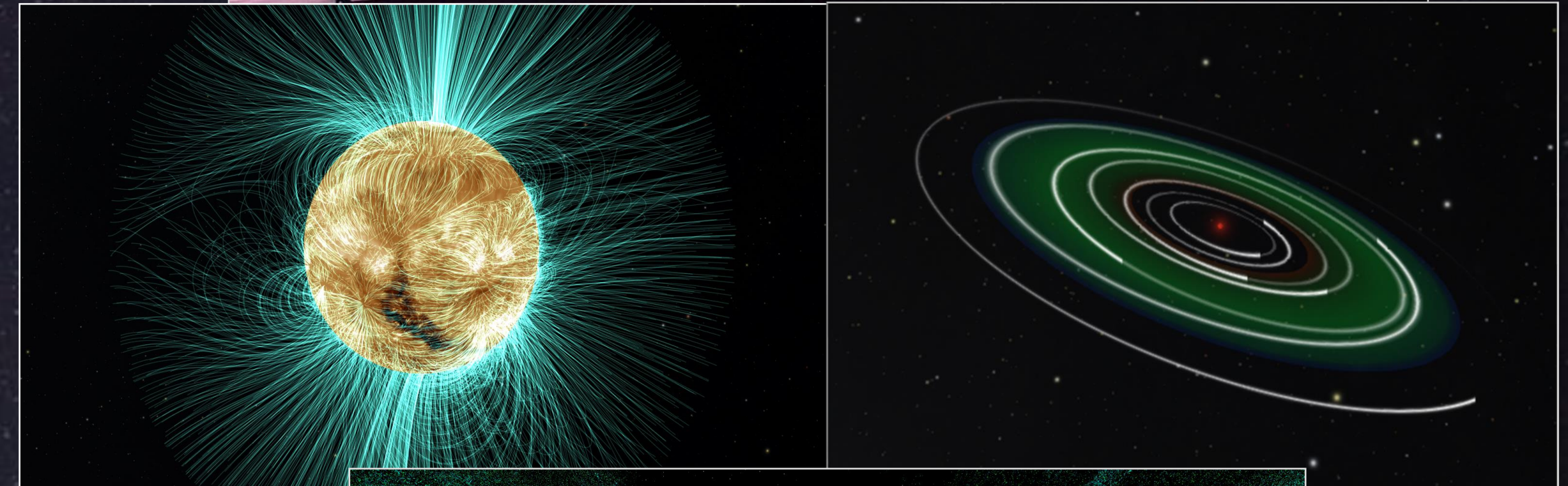
Presenting ongoing work on an interactive  
visualization tool for exoplanet experts

Emma Broman



# OpenSpace – A Browser of the Universe

- Contextualized scientific data from:
  - Space missions
  - Observations
  - Simulations
- High quality scalable graphics
  - Dome theaters -> Laptops
- Interaction
- Explanation and exploration
  - Science communication and research
- Open Source







OpenSpace

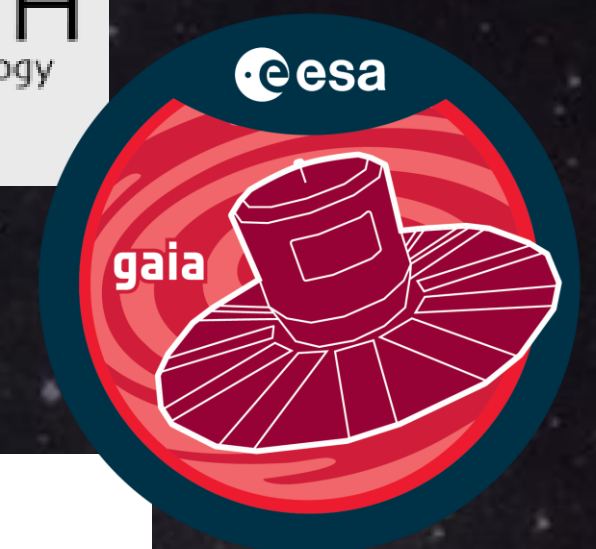




# ExoplanetExplorer

- Aim - Simplifying exploration of exoplanet data for experts
    - Visualization, filtering, interaction
    - Contextualize data in 3D
  - Powered by OpenSpace
  - Ongoing research work – collaboration with experts
  - Combine and fetch latest data from multiple sources:
    - NASA Exoplanet Archive
    - Stellar metallicity abundances (GALAH, APOGEE, Gaia)
    - Detection of molecules in exoplanet atmospheres
- + anything else (through Python pre-processing step)

**NASA EXOPLANET ARCHIVE**  
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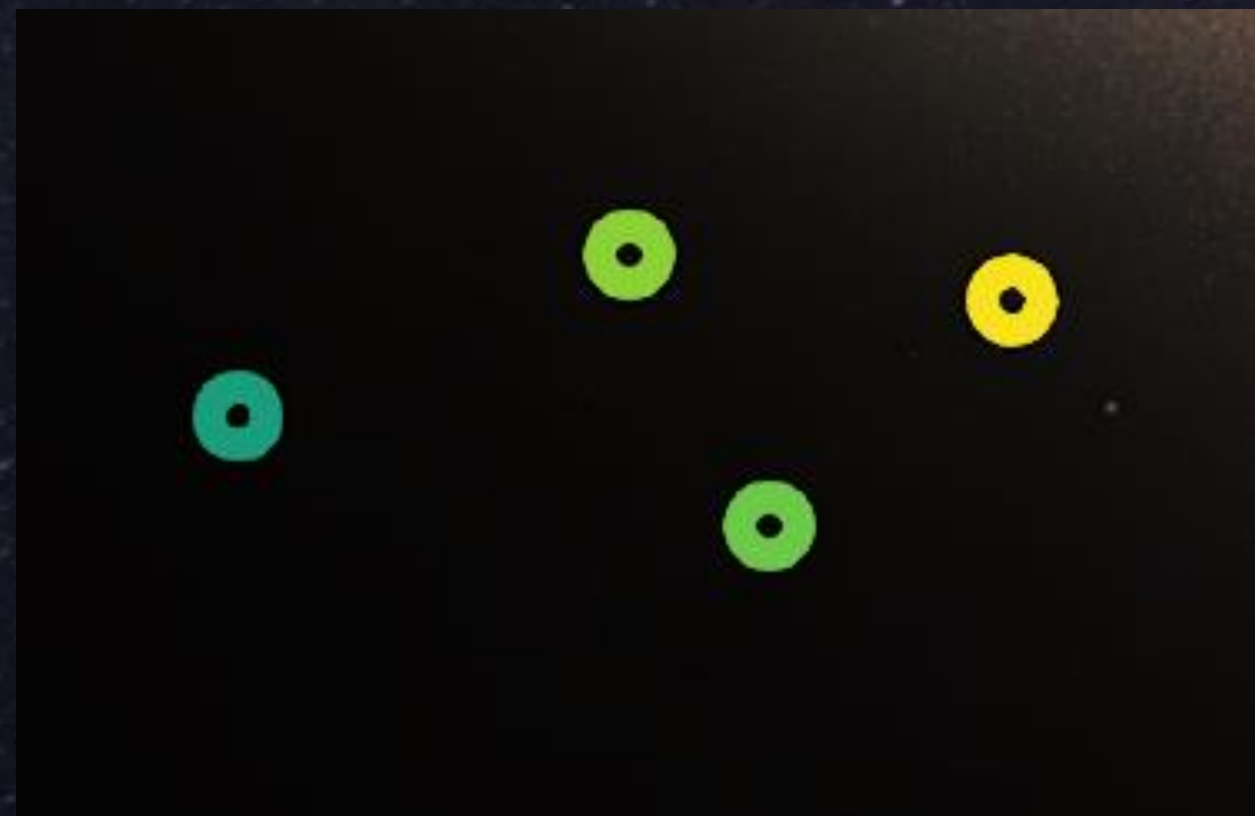
**ExoAtmospheres**  
IAC community database for exoplanet atmospheric observations



# Visualization quick guide

- Each ring = planet
- Ring radius = planet component

Single-planet systems:



Multi-planet system:





Demonstration





# OpenSpace

FORK ME ON GITHUB

**A System for Astrographics**

10.1109/TVCG.2019.2934259

@OpenSpaceProj

[www.openspaceproject.com](http://www.openspaceproject.com)



# Thank you! Questions?

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