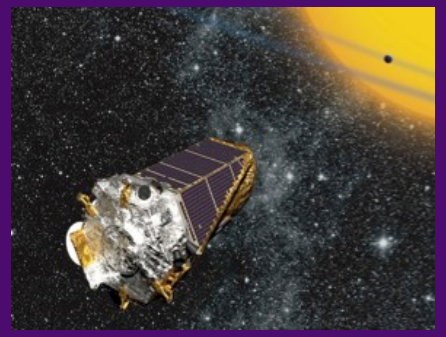
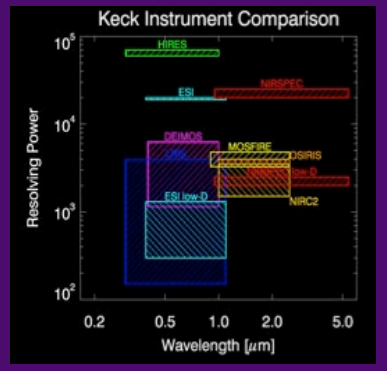
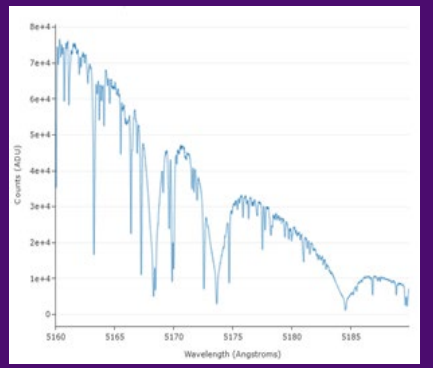
Updates from the NASA Exoplanet Science Institute (NExScI)

David R. Ciardi
NExScI Chief Scientist
On Behalf of the NExScI Team
ExoPAG-25 10 January 2022

Sagan Program & Community Support	Exoplanet Archive and ExoFOP	Long Term Archives	Keck Operations and Archive (KOA)	NN-Explore (NEID PRV)







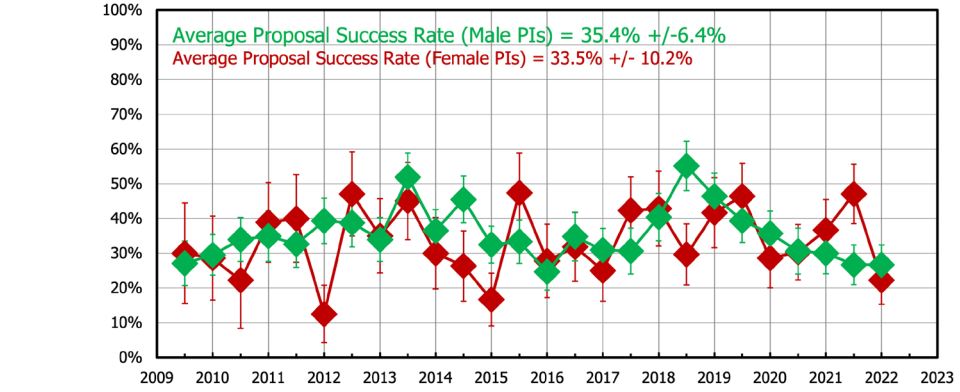
Science Affairs Highlights

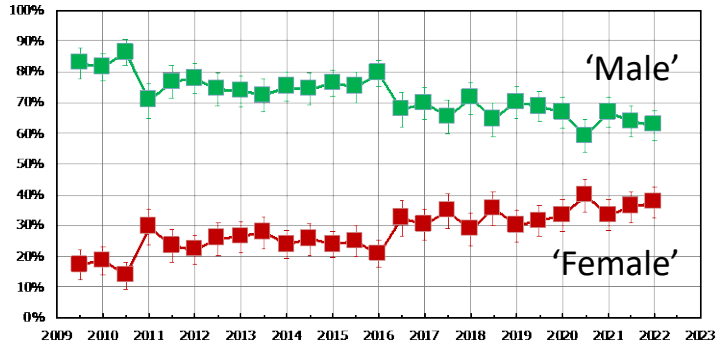
Dawn Gelino,
Deputy Director

- **Largest Sagan Summer Workshop in 21-Year history**
  - "Circumstellar Disks and Young Planets"
  - Over 800 people participated in the virtual 2021 Sagan Summer Workshop, July 19-23, 2021
- 2022 hybrid SSW, July 25-29, 2022
  - "Exoplanet Science in the Gaia Era"
  - https://nexsci.caltech.edu/workshop/2022/

Some SSW 2021 participants

- **2022A NASA Keck Time**
  - Successful full implementation of Dual Anonymous Proposal Review (DAPR) process
    - 2022A GO oversubscription rate – 4.7:1
    - Highest number of new proposers ever
  - 4th NASA Keck Key Strategic Mission Support
    - Large programs that specifically support NASA space missions
    - Oversubscription rate - 5.6:1
- 2022B Proposals due March 17, call live Feb 17
  - https://nexsci.caltech.edu/missions/KSA/



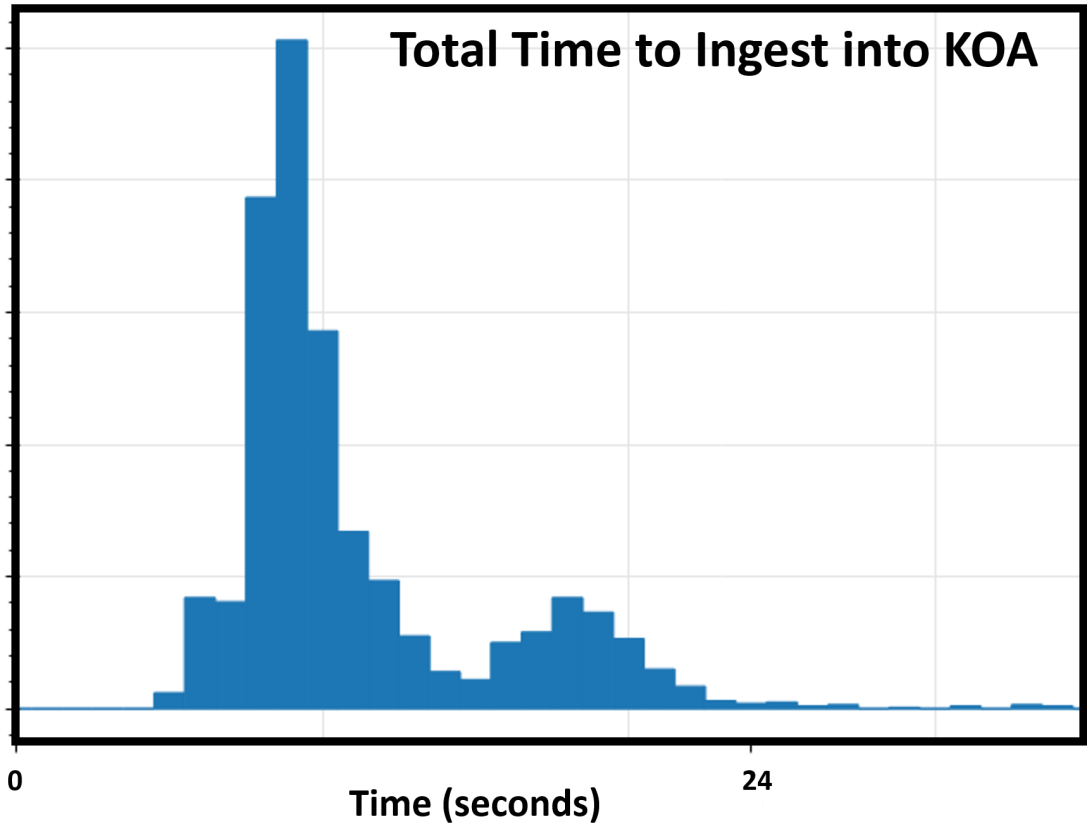


NASA Keck Submissions by Gender Over Time

Keck Observatory Archive (KOA)

Bruce Berriman
KOA Lead

- Collaboration between NExScI and WMKO
- Raw data from instruments available through a Python API, built on top of VO protocols.
  - Public and private data, and calibration associations, and accessible through the PyKOA client.
  - Public data are accessible through four third-party clients: IRSA Viewer, TOPCAT, PyVO and TAP+
  - https://koa.ipac.caltech.edu/UserGuide/PyKOA/TAPClients.html
- Preparing for near real-time ingestion of newly acquired data and generation of science ready data products.
  - Incremental deployments for each instrument in 2022.
- The first KOA User Survey released at 239th AAS Meeting, January 2022.

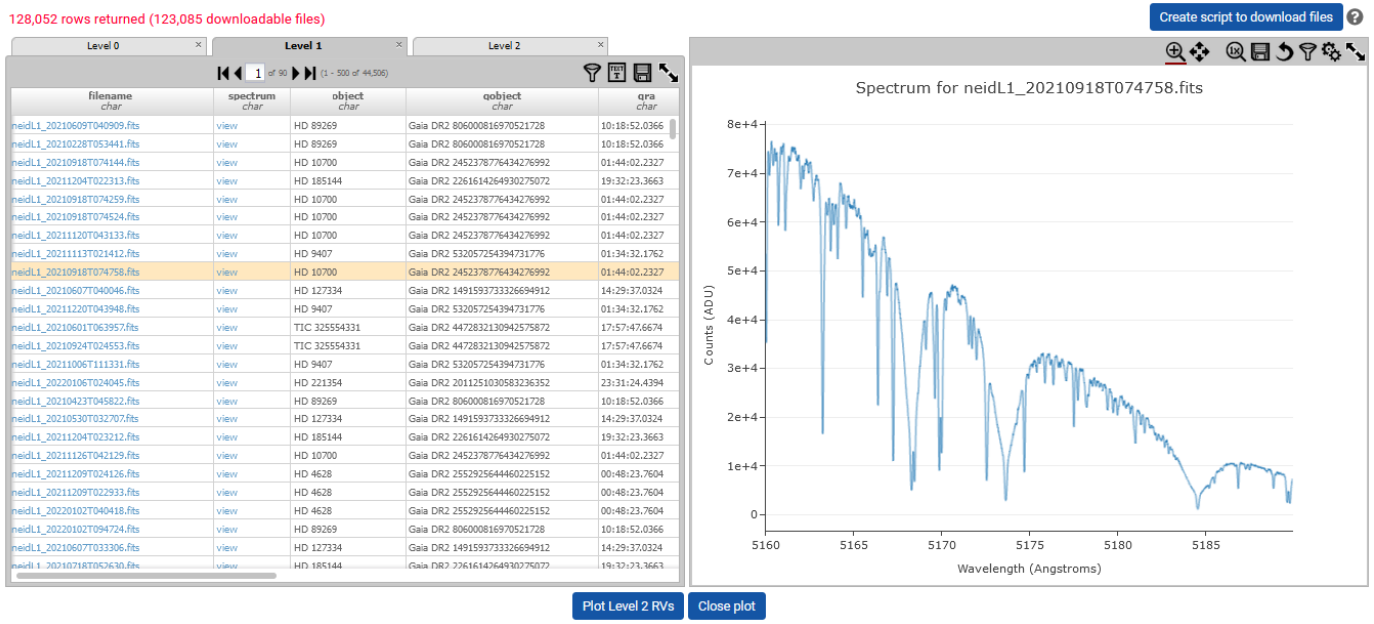


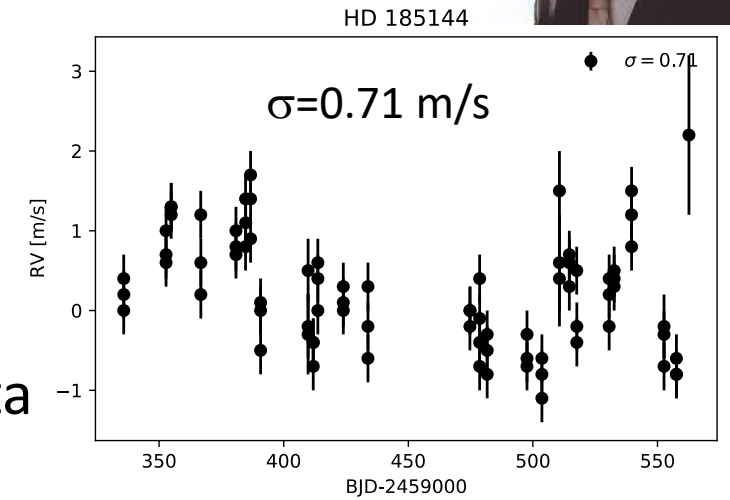
https://koa.ipac.caltech.edu

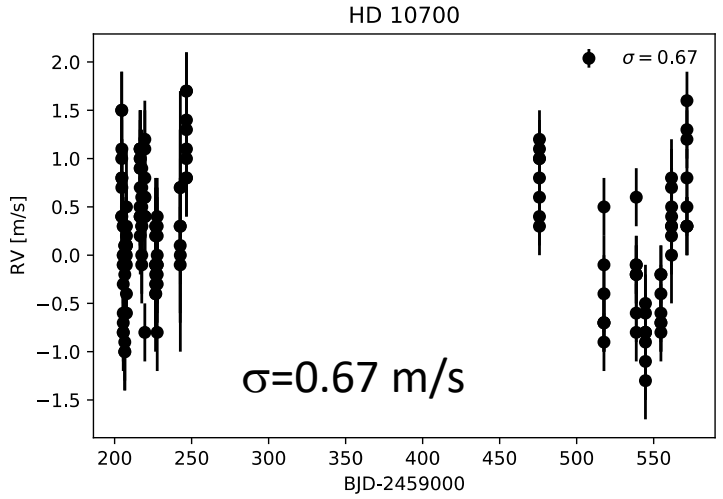
NEID Stellar and Solar Data Archive

BJ Fulton
NN-Explore
Project Scientist

- NEID on WIYN available for community (see Callas Talk)
- Stellar and solar data archive includes raw spectra, extracted spectra, and derived RVs
- ~90% of data processed and in archive within 24 hours
- pyNEID python package available for searching and extracting data





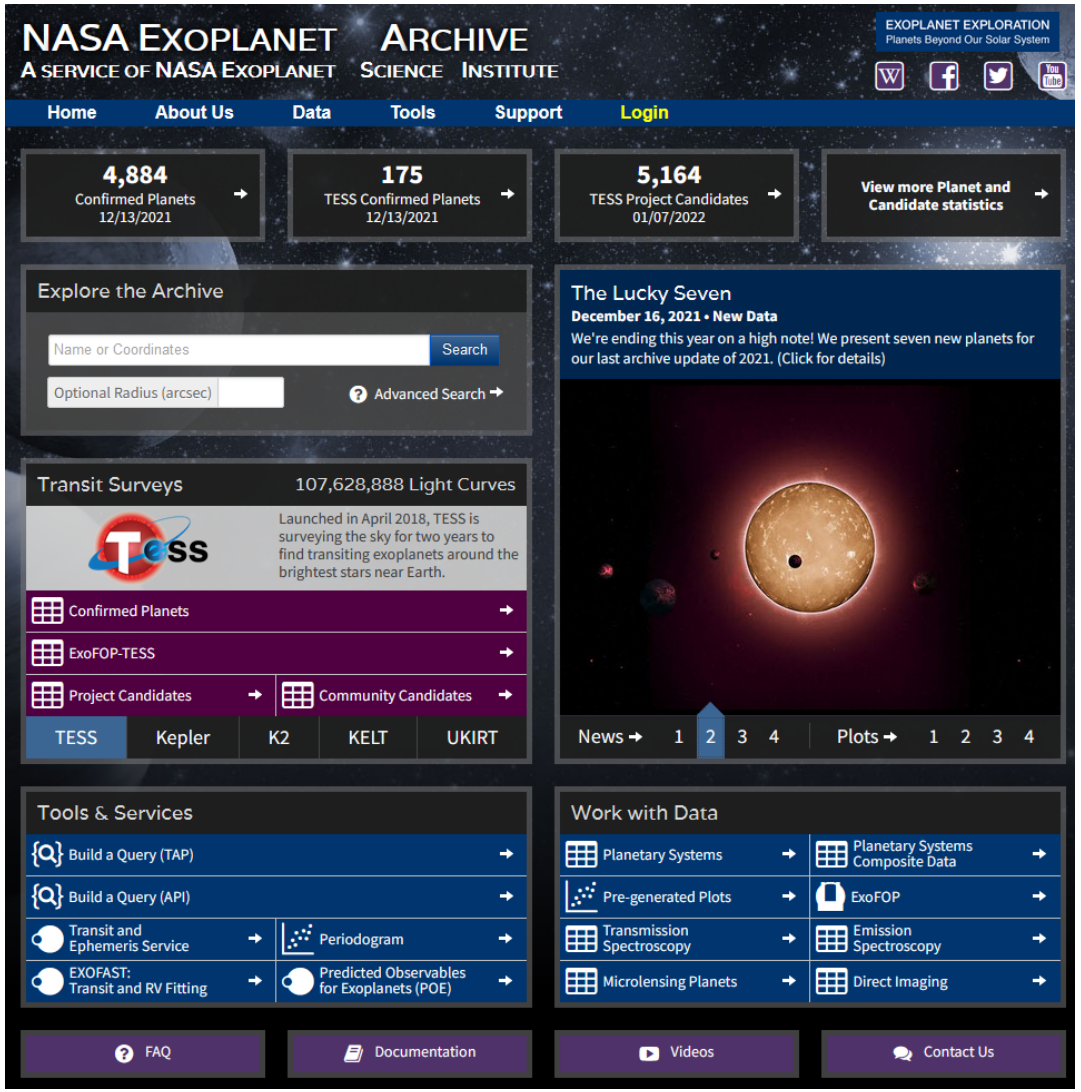


0.7 – 1.25 m/s on standards

NASA Exoplanet Archive

Jessie Christiansen
Archive Lead Scientist

- Updated holdings: 4884 Planets, 32000 Parameter Sets
  - More planets in 2021 than any other year except for the big Kepler papers in 2014 and 2016
  - 500+ planets and 1000+ parameter sets in 2021
- Approaching 5000 Confirmed Exoplanets
- Continued improving accessibility to archive holdings
  - Migrated additional tables to our TAP service, which allows users to programmatically access and retrieve data
  - Updated public Python package astroquery to support new planetary system and planetary system composite parameter tables
- Released new K2 Planets and Candidates table
  - This table contains the super-set of confirmed, validated, and candidate planets discovered in the NASA K2 mission data (1740 total objects)
- Reached 10,000 twitter followers



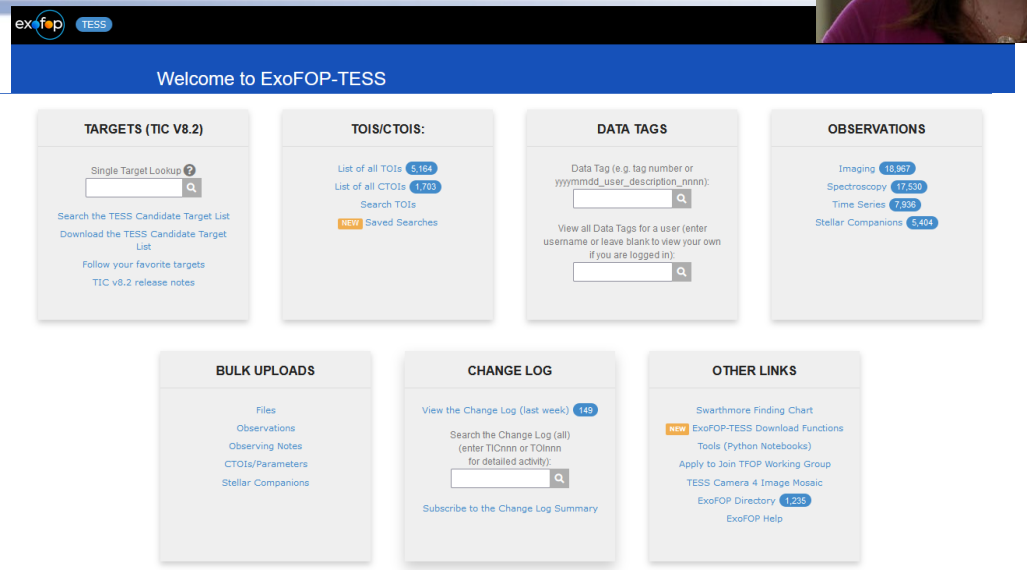
1 https://exoplanetarchive.ipac.caltech.edu

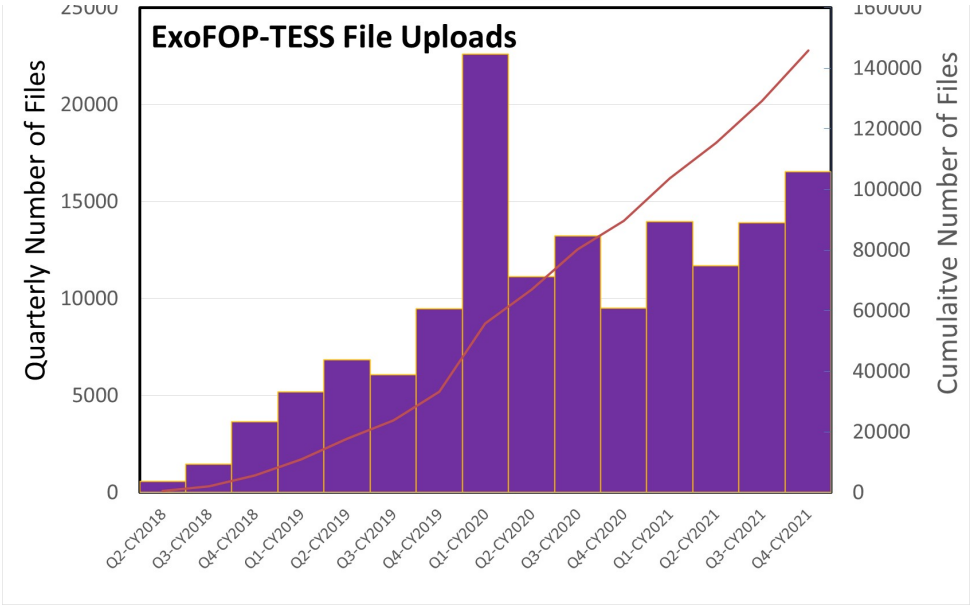
ExoFOP

https://exofop.ipac.caltech.edu

Jessie Christiansen
Archive Lead Scientist

- ExoFOP continues to support the TESS mission and TESS Follow-up Observation Program
  - 5164 TOIs, 1700 cTOIs
  - 140,000 files; 20,500 observing notes; 20,000 recorded observations
  - TFOP priorities and dispositions updated daily
- ExoFOP consolidation nearly complete
  - Close-out of these portals and having just one ExoFOP in the next few months
  - ExoFOP-Kepler migration done
  - ExoFOP-K2 migration in process
- Improving data access
  - Python Notebook examples to using pandas to download and explore ExoFOP tables
  - Submitting MyTargets requests to stay up-to-date on changes
  - Updated ExoFOP-TESS php download scripts
  - Saved Searches
- Receive a daily email log of what has been uploaded on ExoFOP





Come Join the Team …

- System Adminstrator (coming soon)
  - Work on the Exoplanet Archive and other NExScI projects in the managing software releases and development of user-oriented services for visualizing and data interaction
  - Background in Astronomy, Physics, Math, Computer Science, Computer Engineering, Information Sciences, or a related field.
  - Experience with Unix/Linux scripting, Python, SQL, current software management practices and cloud services, and containerization

- Science Data Analyst (coming soon)
  - Work on the Exoplanet Archive to make crucial contributions in maintaining the up-to-date database and archive content
  - Background in astronomy or physics
  - Experience with basic programming and scripting with python, perl etc.