



Jet Propulsion Laboratory
California Institute of Technology

NN-EXPLORE

NASA-NSF Exoplanet Observational Research Program

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NN-EXPLORE Program Manager

Why NN-EXPLORE?



ExoPlanet Exploration Program

- Astro2010 Decadal Survey:

"NASA and NSF should support an aggressive program of ground-based high-precision radial velocity surveys of nearby stars in order to **validate and characterize exoplanet candidates.**"

- National Academies Exoplanet Science Strategy - 2018:

"NASA and NSF should establish a strategic initiative in extremely precise radial velocities (EPRVs) to develop methods and facilities for **measuring the masses** of temperate terrestrial planets orbiting Sun-like stars."

- Astro 2020 Decadal Survey:

"The panel advocates that together NASA and NSF address the grand challenge of achieving the precision required to **measure the masses** of terrestrial planets orbiting Sun-like stars, which implies a single measurement precision of 10 cm/s and control of systematics at the level of 1 cm/s."

"While such measurements will be done from the ground, they are **inextricably linked to the scientific success of numerous current and proposed missions**, namely the legacy Kepler/K2 data set, the ongoing TESS Mission, and a future direct imaging mission."



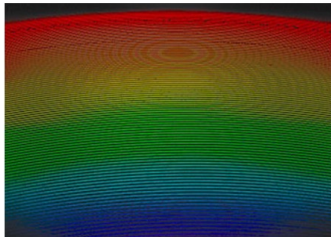
WIYN/NEID and Guest Observing (GO)

37 nights of GO on WIYN (3.5 m); Maintain the NEID spectrograph; fund users; process and archive the data (including solar data).



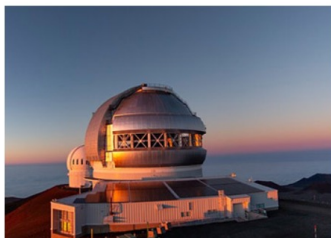
Southern RV Observing Opportunities

Radial velocity observing time in the southern hemisphere is available for US institutions on SMARTS/CHIRON and MINERVA-Australis.



NASA-NSF EPRV Initiative

Organize the Research Coordination Network and EPRV conferences



High Resolution Speckle Imaging of Exoplanet Host Stars

Three high resolution speckle imaging instruments (NESSI at WIYN, 'Alopeke in Gemini North, and Zorro in Gemini South) are available for US institutions.

More information: <https://exoplanets.nasa.gov/exep/NNExplore/>

How to propose?



ExoPlanet Exploration Program

- NN-EXPLORE reserves time for exoplanet research in the following facilities
 - All instruments at WIYN, but particularly to exoplanet instruments NESSI and NEID
 - CHIRON at the 1.5m in CTIO
 - MINERVA-Australis
 - > **Apply via NOIRLab NN-EXPLORE call – Deadline March 31, 2023**
- To use ‘Alopeke in Gemini North, and Zorro in Gemini South
 - Apply via the NOIRLab general call - **Deadline March 31, 2023**
 - Contact the instrument PI Steve Howell

Agenda



ExoPlanet Exploration Program

Title	Speaker	Duration
The NN-EXPLORE Program	David Ardila (JPL)	10 min
The High-Resolution Imaging Program	Steve Howell (Ames Research Center)	10 min
The NEID spectrometer	Sarah Logsdon (NOIRLab)	10 min
The SMARTS/CHIRON spectrometer	Todd Henry (RECONS)	10 min
The MINERVA-Australis spectrometer	Rob Wittenmyer (USQ Aus)	10 min
Additional Discussion	All	10 min

Raise your hand if you want to talk or ask questions in the chat