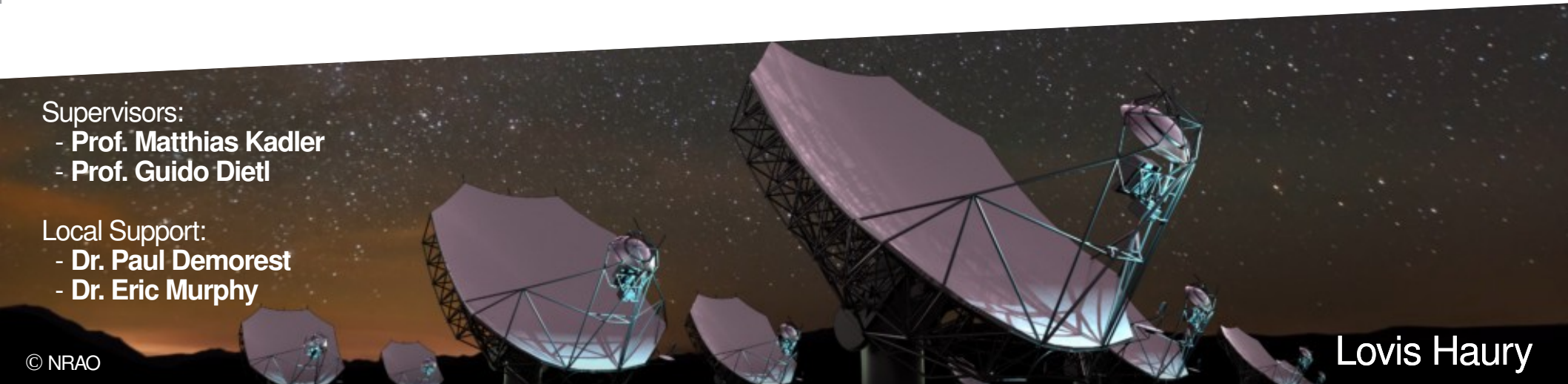
Collaboration with:
- **Angelika Klär**
- Hettstadt Observatory (**Christian Lorey**)

Supervisors:
- **Prof. Matthias Kadler**
- **Prof. Guido Dietl**

From Würzburg to New Mexico - Commissioning of two Radio Telescopes

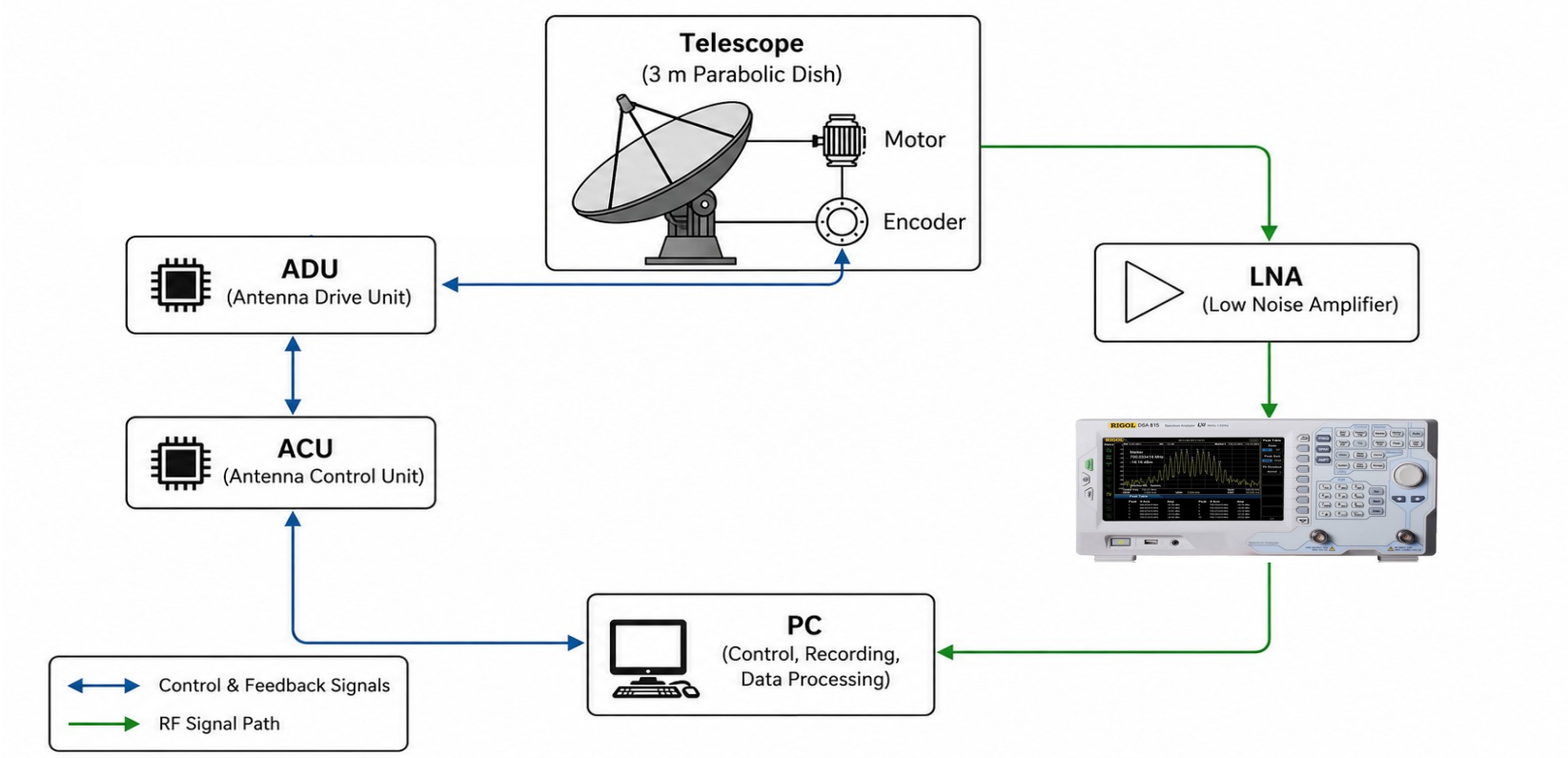


Supervisors:
- **Prof. Matthias Kadler**
- **Prof. Guido Dietl**

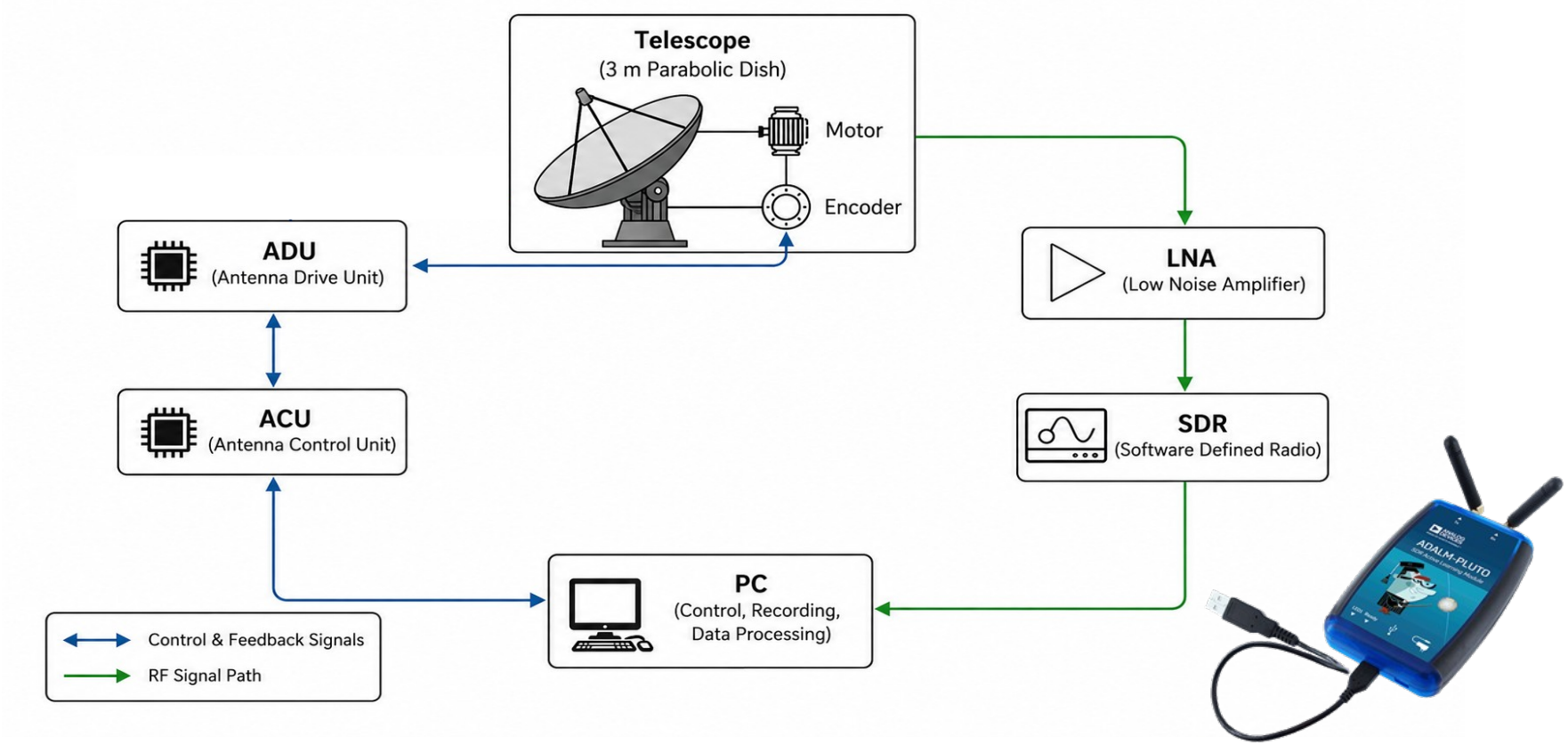
Local Support:
- **Dr. Paul Demorest**
- **Dr. Eric Murphy**

Lovis Haury

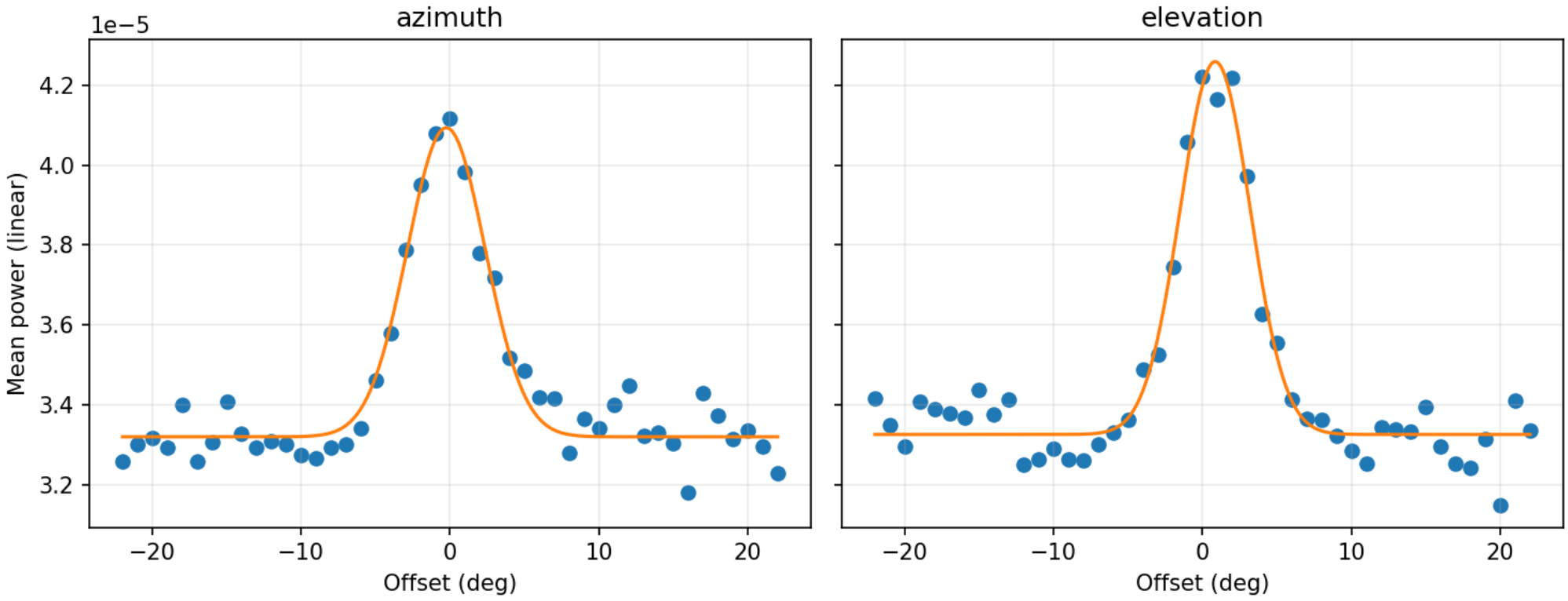
Hettstadt 3-m Radio Telescope – System Overview

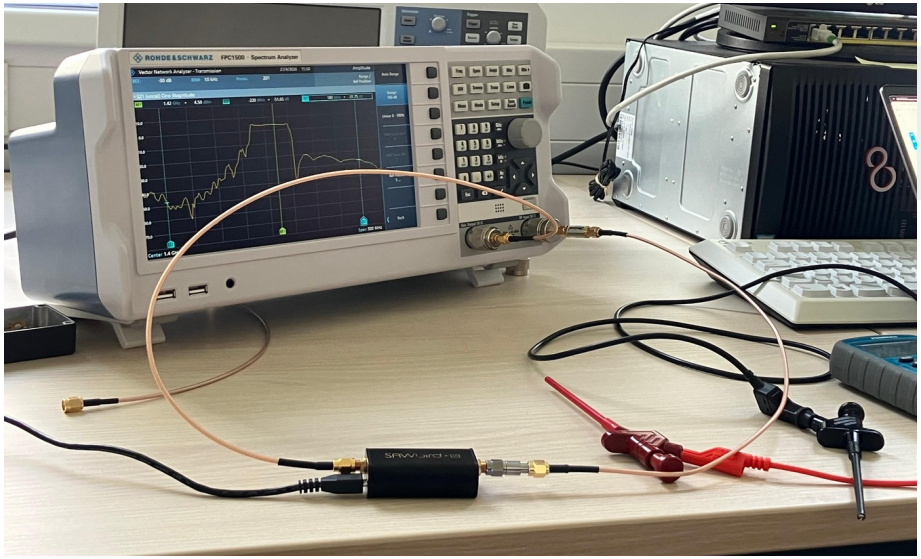


Hettstadt 3-m Radio Telescope – System Overview

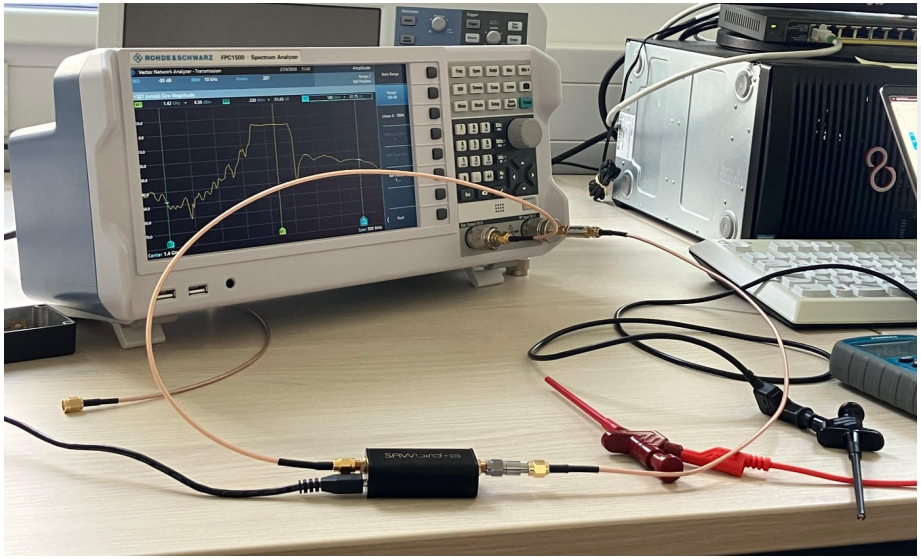


Initial Solar Cross-Scan



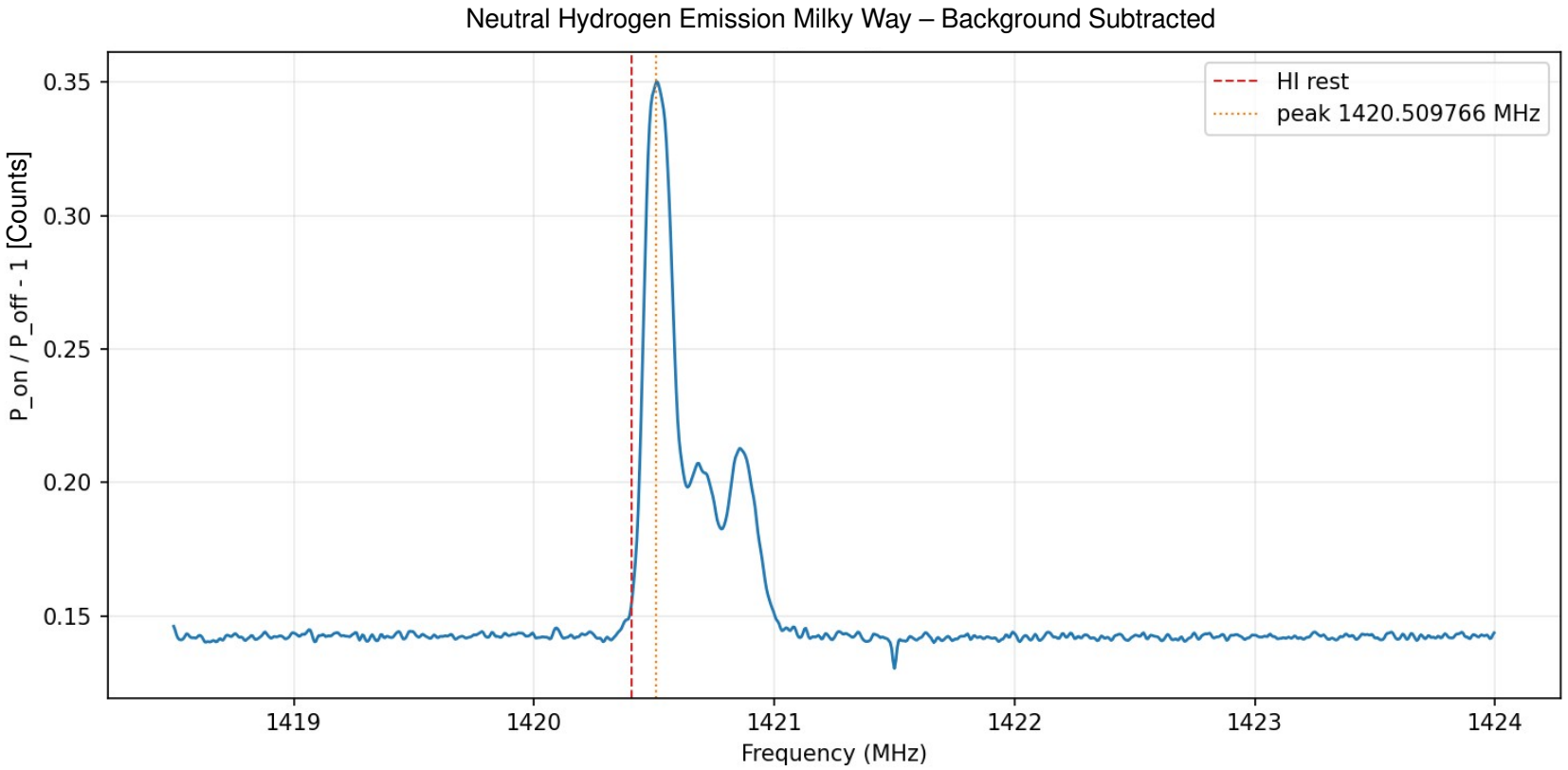

ROHDE&SCHWARZ
FPC1500 · Spectrum Analyzer
Vector Network Analyzer - Transmission


ADALM-PLUTO

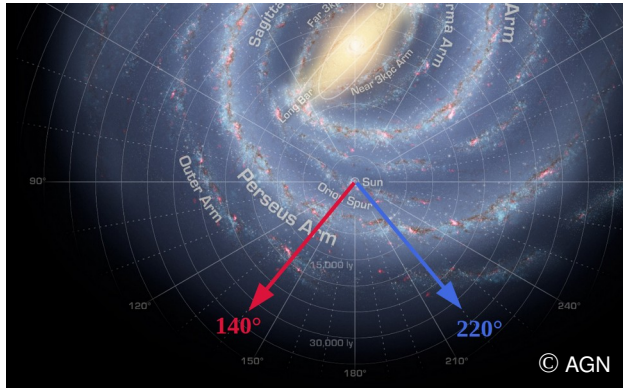

ROHDE&SCHWARZ
FPC1500 · Spectrum Analyzer

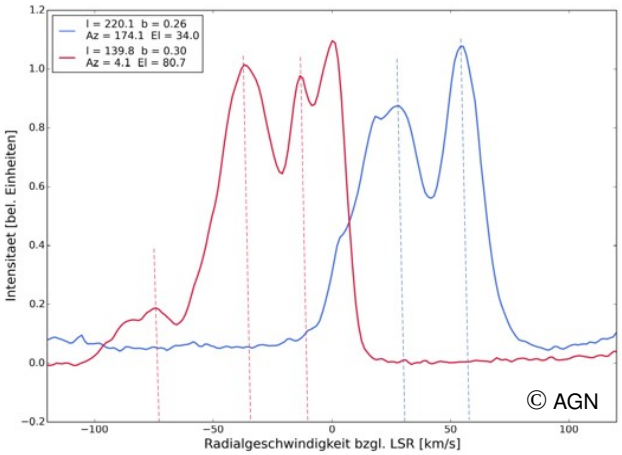

USRP B210
RF A
RF B

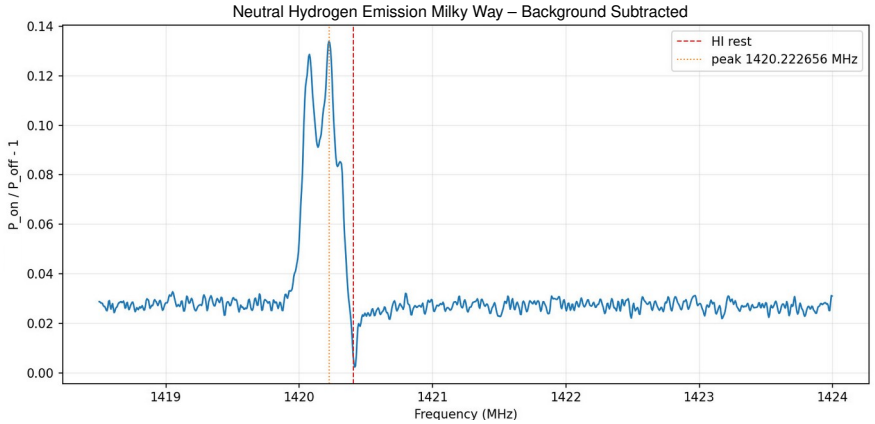
Detection of Galactic Neutral Hydrogen Emission

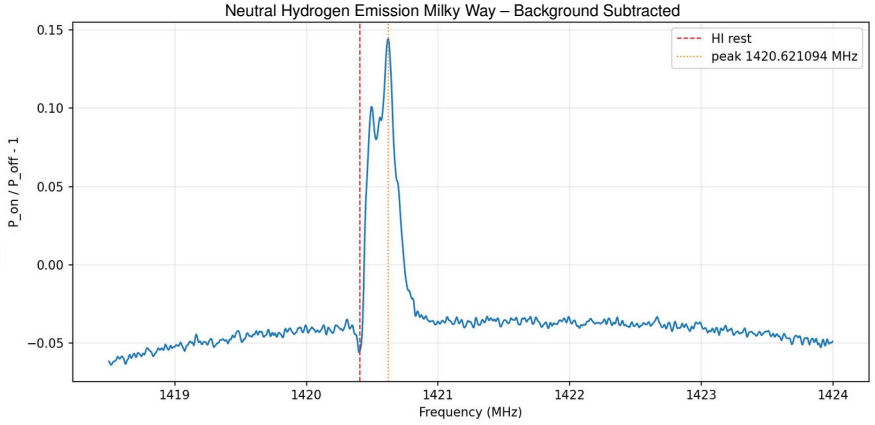


HI Doppler Shifts Across Galactic Longitudes







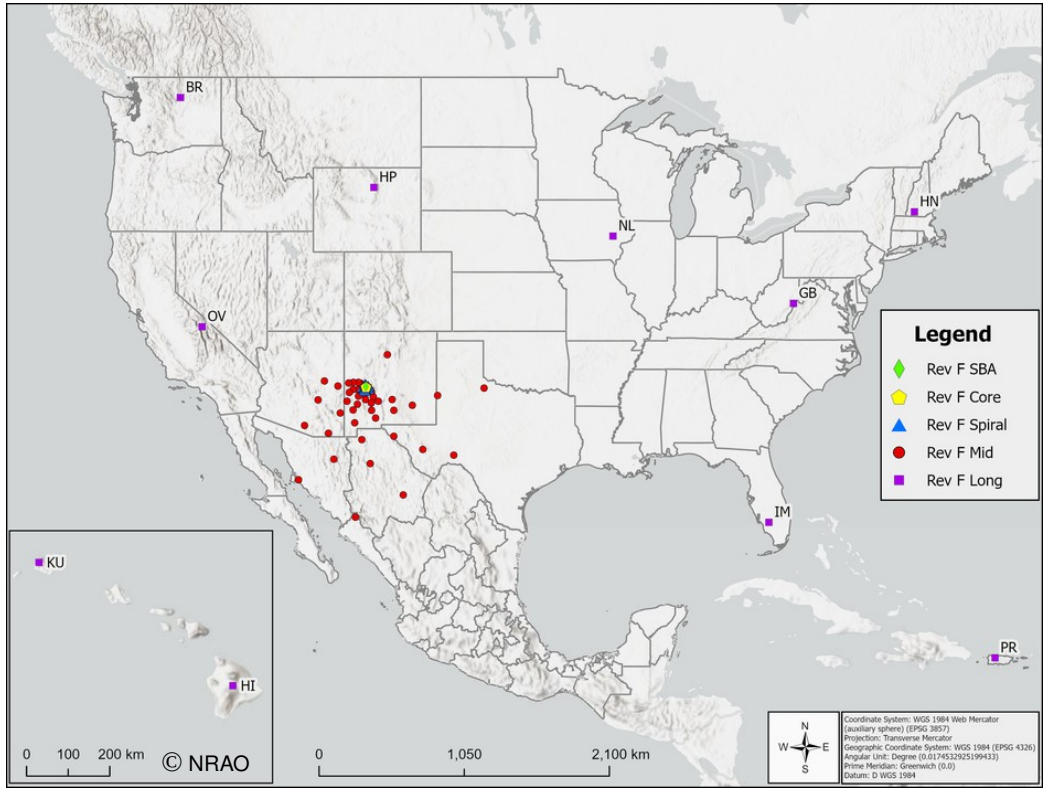


≈ 42 km/s

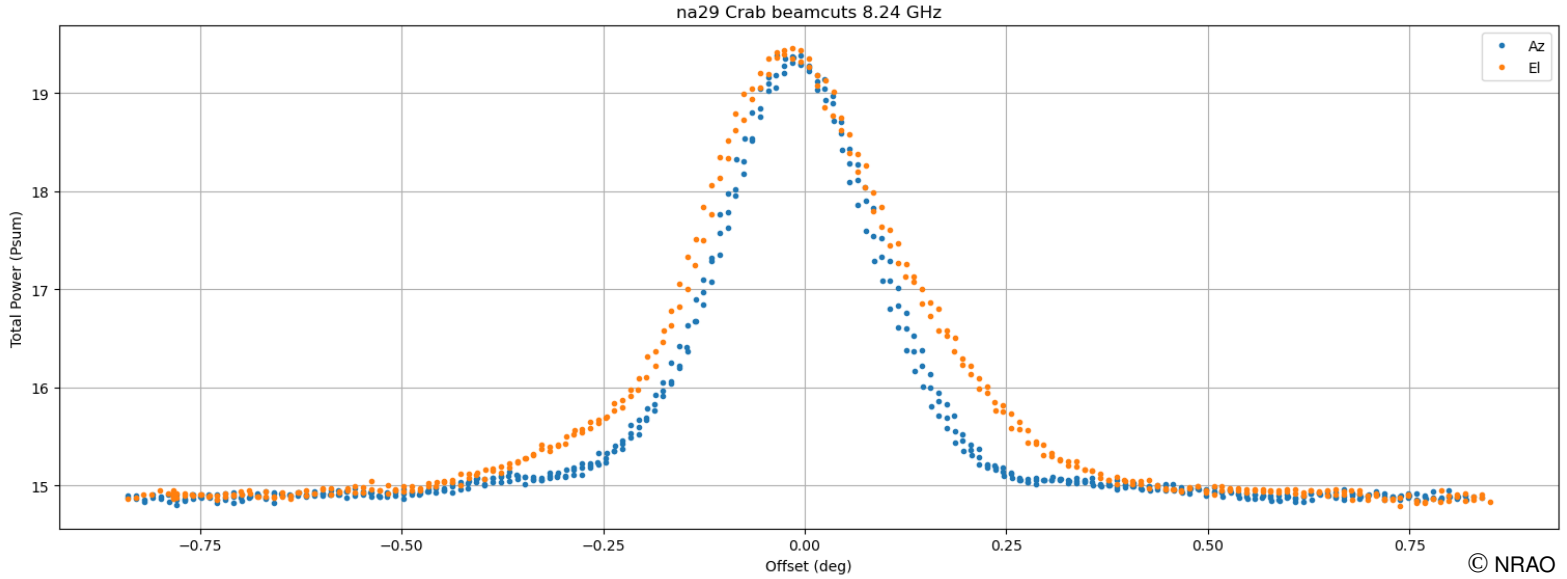
The ngVLA – Overview and Capabilities

- 1.2 GHz – 116 GHz
- 260+ Antennas (SBA, Main, Long)
  - 19 × 6 m antennas | Baselines: 11–60 m
  - 214 × 18 m antennas | Baselines: 40 m–1200 km
  - 30 × 18 m antennas | Baselines: 500–8600 km
- Offset Gregorian Design

© NRAO



Outlook Master's Thesis – Calibration Pipeline



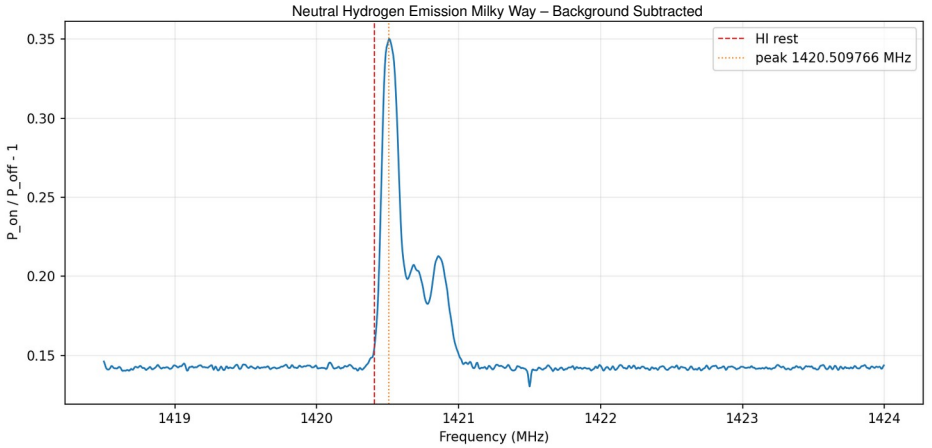
Goals: - Establish flux calibration pipeline for ngVLA prototype dish
- Performance estimate in comparison with the Effelsberg 100-m Radio Telescope

WMT: - Transfer of calibration strategies and operational experience
- Preparation for commissioning of the WMT

Summary

Hettstadt 3-m Radio Telescope

- Detection of **galactic neutral hydrogen** (HI) emission
- **Solar continuum** observations
- Outlook: Establishing a **student laboratory experiment**



Support with Commissioning of the ngVLA Prototype Dish

- Establish **flux calibration pipeline** for ngVLA prototype dish and WMT
- **Performance estimate** in comparison with the Effelsberg 100-m Radio Telescope
- **Preparation for commissioning of the WMT**