ALFALFA Undergraduate Activities

R. Koopmann, Union College

ALFALFA White Paper 2003:

"In accordance with the agency requirements of both NAIC and the U.S. NSF-funded participants, education and outreach activities should be incorporated into E-ALFA activities."

Shared NAIC and E-ALFA responsibilities for education/outreach:

- Establishing educational opportunities for undergrads, grads, postdocs
- Developing educational materials for K-12, undergrads, grads
- Providing public information and outreach materials.

Activities

- Annual ALFALFA Undergraduate Workshop
- Observing at Arecibo
- Research Projects
  - summer
  - senior
  - course credit

1st ALFALFA Undergraduate Workshop

Union College
6 - 7 July 2005

(NSF/Brinson)

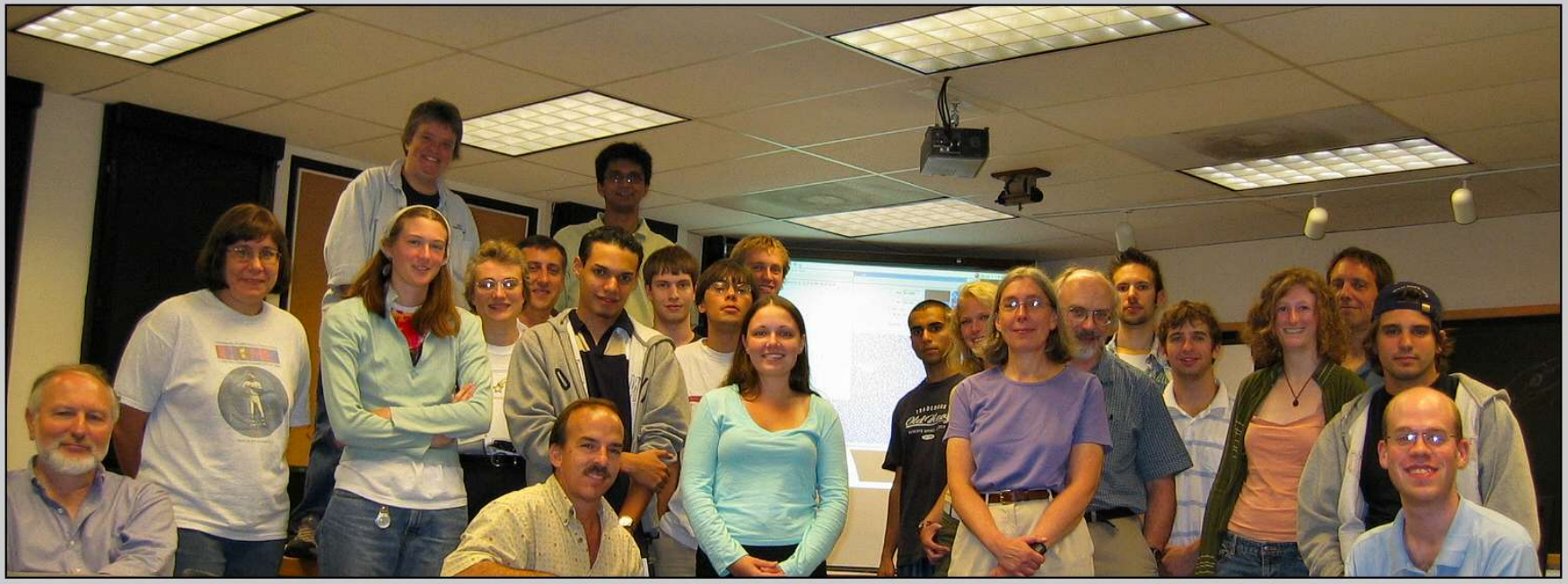
First ALFALFA Undergraduate Workshop

Goals:

- To provide the undergraduates involved in summer research related to ALFALFA lectures covering the science background and technical details, to expose them to the nature of large legacy style surveys, and to give them the opportunity to exchange their experiences with their peers

- To provide the framework for exchanging materials (lecture PPT, handouts, exercises) among participants as well as others.

Location: Union College, Schenectady, NY



UNION COLLEGE

First ALFALFA Undergraduate Workshop
Schenectady, New York
July 2005

25 Participants

14 Undergrads:

Colgate, Lafayette, Union, Bryn Mawr

Cornell, U. Puerto Rico, U. Wisconsin

Day 1 Agenda

Talks:

- Introduction to ALFALFA and the Arecibo Telescope
- Fundamentals of Radio Astronomy
- Overview of the Arecibo Telescope
- Using ALFA for ALFALFA
- Introduction to CIMA and Remote Observing

Remote Observing

Students collaboratively wrote observing proposal:

ALFALFA: The Arecibo Legacy Fast ALFA Survey
The 2005 Summer Undergraduate Observing Program
30 June 2005

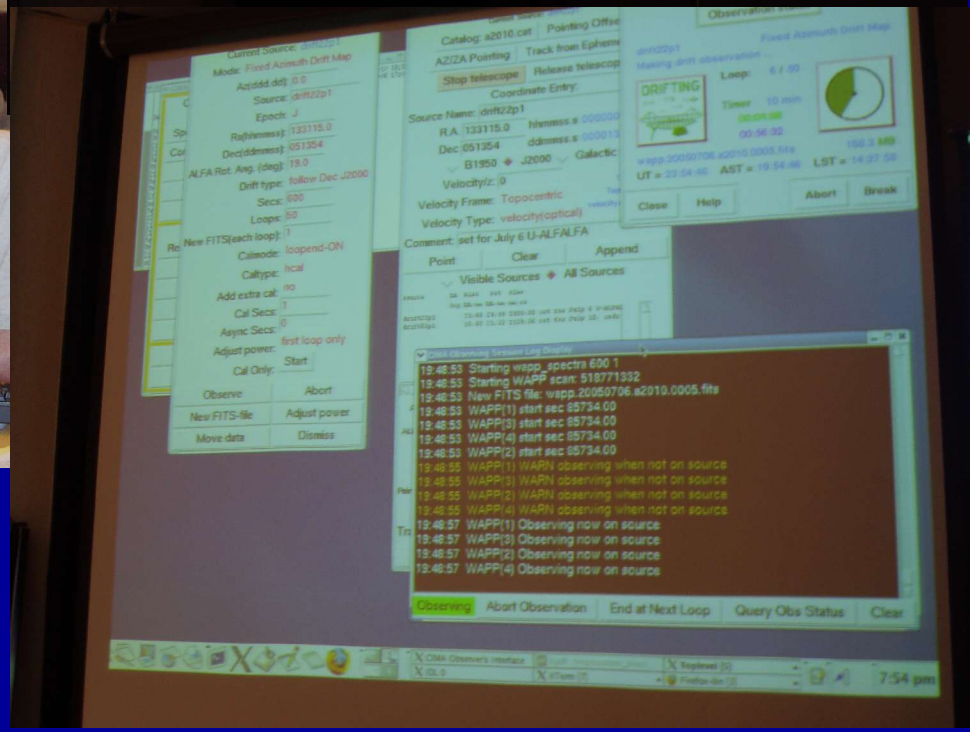
Adrienne Stilp	Cornell & U. Wisconsin
Neil Patel	Cornell
Adeel Altaf	Lafayette
John Ayala	U. Puerto Rico
Christi Forsyth	Colgate & Bryn Mawr
Michael Gillin	Union
Josh Goldstein	Lafayette
Bilal Mahmood	Union
Brendan Mullan	Colgate
Jay Read	Union
Brian Walsh	Colgate
Steph Wortel	Colgate

Abstract

The Arecibo Legacy Fast ALFA (ALFALFA) project is a blind HI survey covering 7000 $\deg^2$ of the sky and is expected to detect at least 20,000 HI sources. In addition, ALFALFA will contribute to the understanding of the evolution of galaxies in relation to their environments. Following the same techniques and procedures as the general ALFALFA survey, we plan to observe a nearby loose group of galaxies, LGG 362. This group should have at least six HI sources. At the distance of the group (12.59±1.74 Mpc), we expect to find HI masses as low as 1.2×10^7 $M_\odot$ for a 3σ detection. Compared to current ALFALFA data on parts of the dense Virgo cluster and a nearby void, this subset of data will contribute to the survey by providing observations of an intermediate galaxy density environment.

Remote Observing

Loose Group LGG 362

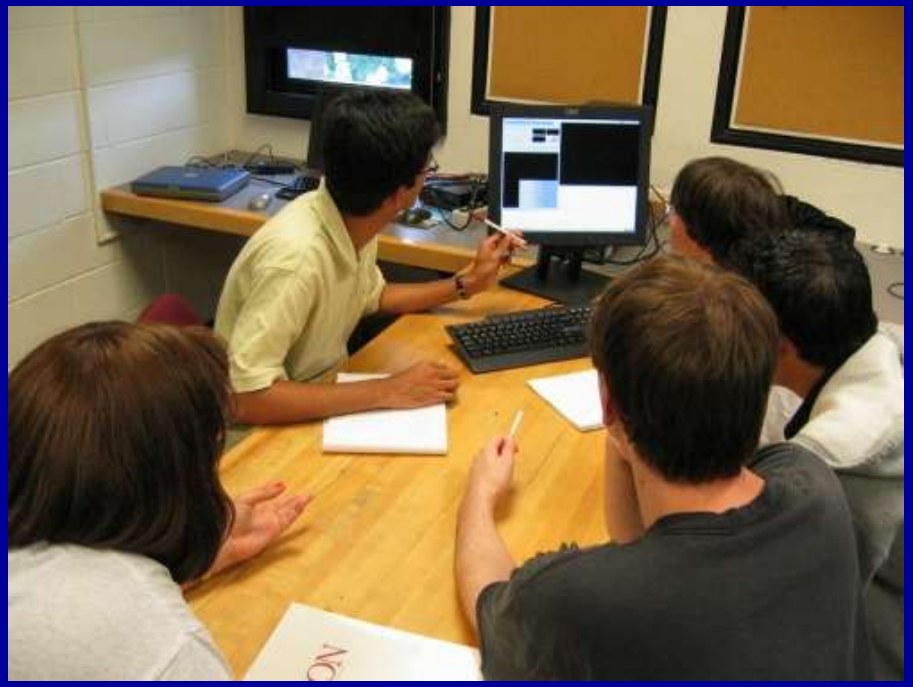


Day 2 Agenda

Talks

- Overview of the Local Universe
- Overview of Extragalactic HI
- Optical Counterparts of HI-rich Galaxies
- ALFALFA in 2005: Results and Plans

Data Reduction Sessions



Workshop presentations publicly available

The Arecibo Legacy Fast ALFA Survey - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://egg.astro.cornell.edu/alfalfa/news/mtgs/union05talks/index.php

Red Hat, Inc. Red Hat Network Support Shop Products Training

July 05 undergraduate ALFALFA workshop talks

Union College, July 6-7, 2005

- Workshop home page
- Workshop agenda
- List of participants

The following talks were given as part of the 2005 ALFALFA workshop for undergraduates at Union College on July 5, 2005.

Title	Who	PPT	PDF
Introduction to ALFALFA and the Arecibo Telescope	Riccardo Giovanelli	PPT	PDF
Fundamentals of Radio Astronomy	Lyle Hoffman	PPT	PDF
Overview of the Arecibo Telescope	Sabrina Stierwalt		
Using ALFA for ALFALFA	Martha Haynes	PPT	PDF
Overview of the Local Universe	Brian Kent	PPT	PDF
Overview of Extragalactic HI	Riccardo Giovanelli	PPT	PDF
Optical Counterparts of HI-rich Galaxies	John Salzer	PPT	PDF
ALFALFA 2005: Results and plans	Martha Haynes	PPT	PDF

The U-ALFALFA page

Done

- Workshop experience was a highlight of the students' summer research projects
- Remote observing and proposal-writing excited students and encouraged group effort

After Workshop

- Students continued to meet electronically throughout summer - “Scavenger Hunt”
- Several students pursued ALFALFA work as senior or other term projects
- Several students have observed at Arecibo

Senior Thesis Projects:

Analysis of Workshop Remote Observations
John Ayala, U. Puerto Rico (Pantoja)

Rich Groups in the ALFALFA Survey
Brian Walsh, Colgate (Balonek)
(grad school: Boston University)

Low-mass CDM halos in Group-Free Environments
Adeel Altaf, Lafayette (Hoffman)
(grad school: Purdue)

Mass distribution, density and dynamics of the anomalously large HI disk of NGC 5701
Amy Furniss & Arik Mitschang,
Humbolt (Kornreich)

Summer Project Sampler:

Blended HI signals from distant clusters
Josh Goldstein, Lafayette '07 (Hoffman)

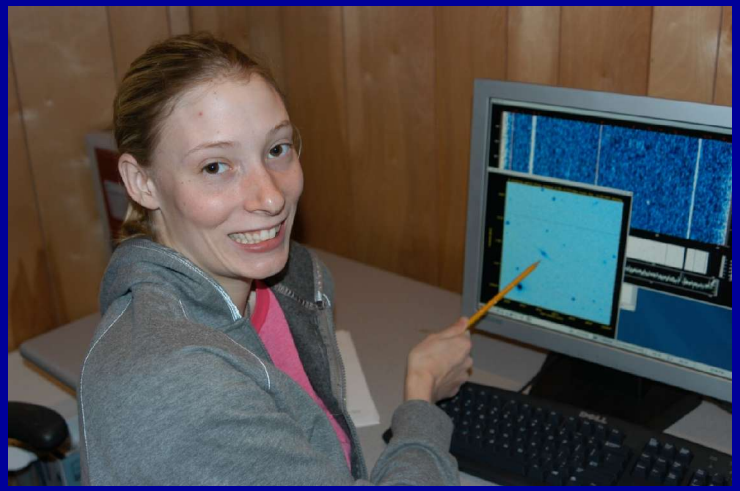
Structure in the Virgo Cluster
Bilal Mahmood, Union '08 (Koopmann)

Identification of groups and clusters in ALFALFA
Walter Hopkins, RIT '07 (Cornell REU, Haynes)

Software development for ALFALFA
Louis Schneider, Cornell '07
Kevin Moore, Cornell '07

Undergraduate projects are contributing to ALFALFA!

Observing @ Arecibo



Amy Furniss (Humboldt)

Bilal Mahmood (Union)

Arik Mitschang (Humboldt)

Sabrina & Brian Walsh (Colgate)

2nd ALFALFA Undergraduate Workshop

Union College
12 - 13 July 2006

13 - 17 students

Colgate
Cornell
Lafayette
RIT (REU)
Skidmore
St. Lawrence
Union
Wellesley (REU)
Wesleyan

Remote Observing
July 12

(Virgo Southern
Extension)

NSF