REU and Summer Research Undergrads
Poster Session and Final Presentations

Clare Burhenne: The 21 cm line and the Tully Fisher Relationship to Find Redshift-Independent Measures of Distance and Peculiar Velocity
Jonathan Davis: Constraining Cosmological Parameters using the kSZ Effect
Alexandra Dobbs: Geomorphologic Characterizations of Comet 67P/Churyumov–Gerasimenko
Carlos Llorente: Effects of High and Low Pressure on Exoplanetary Spectroscopy
Nicholas Merritt: Using VIMS Stellar Occultation’s to Investigate Geostrophic Winds in Saturn’s Stratosphere
Andrew Nowak: Backscatter Curves for Specific Morphological Units on Titan
Elizabeth Post: Using Far-Infrared Spectroscopy to Study Stellar Populations
Cameron Riley: Source Finding for the VLA Sky Survey
Hannah Tidwell: Calibrating ZEUS-2 to Study Star Formation in the Early Universe
Joseph Vazquez: Backscatter Curves for Specific Morphological Units on Titan
REU Student Talks

Catherine Ball, Dominik A. Riechers and Riccardo Pavesi, *Spatially Resolved Analysis of the Interstellar Medium in the Cosmic Eye, a Lensed Lyman Break Galaxy at z=3.074*

William Braverman, Bryce Cousins and Hewei Jia, *A Search for Cosmic String Loops Using GADGET-2 Cosmological N-Body Simulator*

Bryce Cousins, Hewei Jia, William Braverman and David Chernoff, *Priming the search for cosmic superstrings using GADGET2 simulations*

Elizabeth E. Finney and Martha P. Haynes, *The Baryonic Tully Fisher Relation for the ALFALFA 100 Sample*

Logan Hess, *Deriving Stellar Masses for the ALFALFA 100 Sample*

Mrcele Howard, *Using Far-Infrared Fine Structure Lines for Dating Stellar Populations and the Interstellar Medium in Nearby Galaxies*

Ali Hyder, Jonathan Lunine, and Dong Wang, *Latitudinal Variation of Germane in Jovian Atmosphere*

Nicole T. Moon, *Mapping the Habitable Zone of Exoplanets with a 2D Energy Balance Model*

Fiona Nichols-Fleming, *Tracking Seasonal Variations in Titan's Haze Distribution with SINFONI VLT*

Diego Tapia Silva, *A Northern Sky Census for Bow Shocks.*

Stephen Thornton, Robert Wharton, James Cordes and Shami Chatterjee, *Development of Pulsar Detection Methods for a Galactic Center Search*

Kelly Waldvogel, Gordon Stacey, Thomas Nikola and Stephen Parshley, *Determining the Optimal Design for a New ADR Mechanical Support*
REU Final Presentations!

**Monday, August 8**

Wenrui Xu  
Inclination excitation by mean motion resonance

Renato Mazzei  
AGN contamination in far-infrared determined star formation rates

Matthew Abruzzo  
Characterizing the region around FRB 121102

Travis Rogowski  
Preparing ZEUS-2 for observing run at APEX

Patrick Dahlin  
MISE: A Search for Organics on Europa

Kelly Whalen

**Tuesday, August 9**

David Bernal  
Identifying HI-rich Ultra Diffuse Galaxies

Rikley Buckingham  
Identification and Analysis of Features in Saturn’s B-Ring

Caitlin Witt  
Space Velocities of Millisecond Pulsars

Junellie Gonzalez Quiles  
Characterizing the Habitable Zones of Exomoons through Illumination Constraints

Carly Snell  
Modeling Exoplanet Climates at Varying Obliquities

**Space Sciences Building 622**

2:00 to 3:00 pm

All are welcome to attend!
REU Final Presentations!

Tuesday, August 4

Clare Miller
Modeling H II Regions

Sheri Lopez
Spatially Resolved SED Fitting for Pixel Analysis

Brennan Langenbach
A Detection Algorithm for Gravitational Waves from Cosmic Strings

Wenrui Xu
Secular nodal-apsidal resonance: eccentricity libration and resonant trapping

Nicole Wallack
The Effect of Atmospheric Hydrogen on Exoplanet Albedos and Surface Temperatures

Caitlin Witt
Searching for Correlations Between Pulses of the Galactic Center Magnetar

Thursday, August 7

Christie Trimble
Analysis and Dynamics of a New Saturnian Satellite

Joseph Mullen
Advanced Altimetry Processing on Titan

Gigja Hollyday
Constraining the Composition of Titan’s Hydrocarbon Lakes: A Phase Diagram Approach

Brent Shapiro-Albert
Determining Pulsar Trajectories: The Common Origin of B2020+28 and B2021+51

Ariel Donlin
Searching for variability in the Pistol Star

All are welcome!
REU Final Presentations

Tuesday July 29
Alison Farrish  
*Data Reduction and Analysis of LBW Observations*  *1:20 in room 301*

Thursday Jul 31
Amin Nikbin  
*Streamlining the Analysis of Gravitational Wave Simulations*  *after M. Haynes talk in 622*

Tuesday August 5
Laiya Ackman  
*Preparations for Observing with ZEUS-2 at APEX Telescope: Calibration System and Source Selection*

Jaclyn Bradli  
*Star Formation Properties in Gravitationally Lensed Early Universe Galaxies*

Molly Finn  
*Hunting for Pulsars in VLA Data Sets*

Daniel Krolikowski  
*Detecting Traces of Life in the Plume of Enceladus*

Ethan Arnault  
*Wisps in the Outer Edge of Saturn’s Keeler Gap*

Thursday August 7
Brandon Curd  
*A Survey of Cassini’s Equinox Data: Density Waves and Vertical Structure in Saturn’s Rings*

Christian Klein  
*Instrument Design for Remote Sensing of Europa and Titan*

Taylor Morris  
*Searching for cosmic superstrings via microlensing*

Margot Paez  
*Finding Cosmic Superstrings and Collecting a Nobel Prize*

Loren Matilisky  
*Exploring the Effects of Rossby Waves in Thin Keplerian Disks*

Allegra Moran  
*Tracking Propellers in Saturn’s A Ring*

All are welcome!
REU Final Presentations

Tuesday August 6
Rachel Salmon  Features of Saturn’s B Ring
Paul Zivick  Uranian Satellite Spectral Extraction or: How I Learned to Stop Worrying and Love the PSF
Cansu Culha  Double Ridges on Europa Accommodate Some of the Missing Surface Contraction
Robert McGehee  Numerical Methods for Isometric Embeddings

Thursday August 8
Victoria Calafut  Simulating a Non-Gaussian CMB Sky
Jeff Gerber  Mass Transfer and Tidal Dynamics in White Dwarf Binaries
Alber Douglawi  Instrumentation for Submillimeter Astronomy
Zac Pontrandolfi  The Deceptive D Ring: The Strange Dynamics of a Couple Backwater Ringlets
Sam Moore  Single-Pulse Analysis to Improve Pulsar Precision Timing for Gravitational Wave Detections
REU Student Presentations

August 2

Katie Gosmeyer - Erupting Enceladus
Andrew Weis - A Study of Spitzer IR Spectra of Carbon-Rich Targets
Abhimat Krishna Gautam - B2224+65 and the Guitar Nebula
Alex Streicher - Visualizing Black Holes and Neutron Stars from Supercomputer Simulations

August 9

Denise Schmitz - Angular Momentum of Binary Galaxies
Clara Thomann - Cold Case: RADAR Investigation for Ammonium Sulfate Cryovolcanism on Titan
Matt Hankins - SOFIA Science: Studying Massive Stars Near The Galactic Center Region
Brent Harris - Wavelet Analysis of Density Waves in Saturn’s Rings
Ani Chiti - Searching for Radio Transients in the Galactic Center with the VLA

All are welcome to attend!
Cornell University
Department of Astronomy
Summer 2011

2011 Summer Student Presentations

Tuesday, August 2
Andy Bass
Searching for VLA Transient Sources

Thursday, August 4
Andrew Quick
Mapping Comets: Tempel 1 and Hartley 2
Julia Stone
The Modulation Index: A New Method in Narrowing the Search for Fast Radio Transients
Scott Suriano
The Effect of Cluster Environments on Galaxy Properties

All are welcome to attend!
REU Student Presentations

July 29 (Space Sciences 622)
Coralie Jackman - Improved Shape Measurement of Irregularly Shaped Solar System Bodies

August 5 (Space Sciences 622)
Tyler Pauly - Modeling Ice Formation in Molecular Clouds
Keri Hoadley - Flying High! Early Science Planning for FORCAST/SOFIA

August 10 (Space Sciences 105)
Wenli Mo - ZEUS-II: The God of Submillimeter Instruments-II
Dominic Ludovici - Exciting Infrared Spectra of Boring Stars
Chris Faesi - Near- and Mid-Infrared Variability of Young Stellar Objects in Rho Ophiuchus

August 12 (Space Sciences 105)
Bryant Garcia - Simulating Extreme Spacetimes:
Black Holes Ain’t So Black
Morgan Rehnberg - The Shapes of the Saturnian Satellites Pallene, Methone, and Anthe
Annabelle Batista - A Tale of Two Landing Sites:
Possible Hydrovolcanism at Gusev Crater and a Survey of Meridiani Impact Crater Planforms

All are welcome to attend!
REU Final Presentations

July 30

Wavefront Sensing for Sparse Aperture Telescopes – Breann Sitarski
Violet and Extrasolar Atmospheres – Katie Hamren
Selection Effects and Distances to Dusty Stars – A. J. Riggs

August 4

Characterization of the Equatorial Zone of Jupiter – Jenny Kulow
Cloud Height and Cloud Formation on Jupiter – Greg Tierney
Isolation of stellar signals in a binary star: Occultation of Saturn’s rings – Bill Freeman
Polarization and Albedo Reconnaissance of Saturn’s Moons: Rhea, Dione, Iapetus, etc. – Kaylan Burleigh

August 6

Electrons! Tracers of the Galaxy – Jean McKeever
ZEUS and the Investigation of Submillimeter Galaxies – Ryan Lau
Large Scale Structure in the ALFALFA Sky – Tess Senty

Please join us. All are welcome to attend!