

Creating Effective Poster Presentations

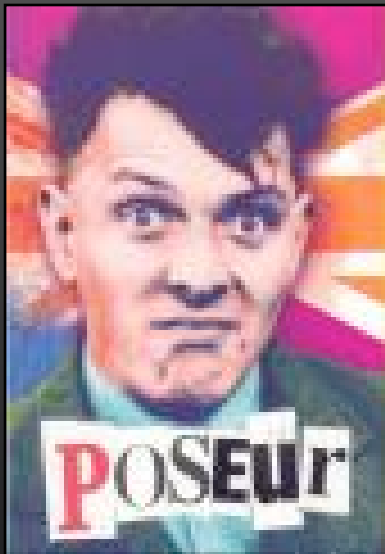
For Fun and Profit!



Aaron Price, AAVSO
95th Spring Meeting of the AAVSO
Rockford, IL

Poster, not Poseur!

- Posters are legitimate forms of publication
- Many important discoveries begin as posters
- They are published and indexed in ADS



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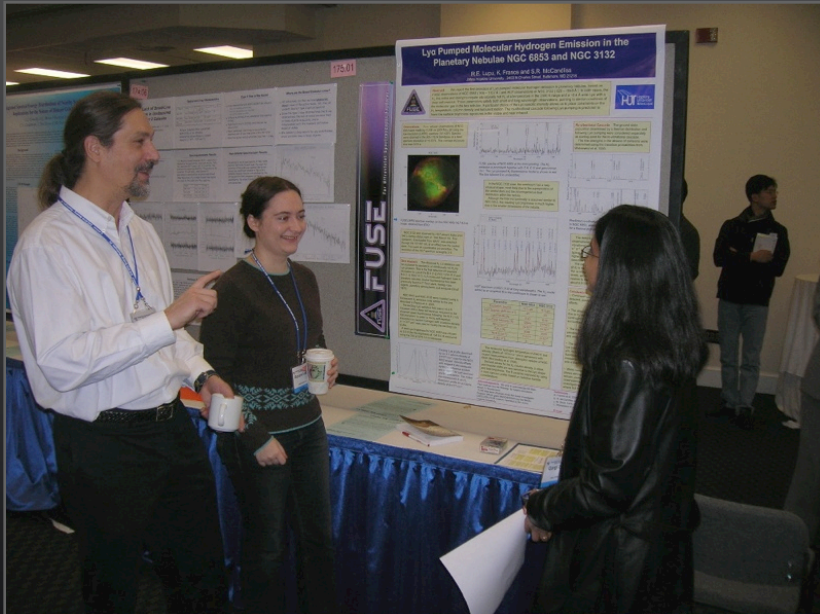
Title: BZ UMa and Var Her 04: Orphan TOADS
Authors: [Price, A.](#); [Howell, S.](#)
Affiliation: AA(AAVSO), AB(NOAO)
Journal: American Astronomical Society Meeting 206, #42.03
Publication Date: 05/2005
Origin: AAS
Abstract Copyright: (c) 2000: American Astronomical Society
Bibliographic Code: 2005AAS...206.4203P

Abstract

Both BZ UMa and Var Her 04 are cataclysmic variable stars without a home. Neither fit easily into current classification systems so may extend the

To *pose* a question: Why?

- Early results
- Easier to prepare than a paper
- Not referee'd*
- More details than a presentation
- Social interaction/networking
- Reuseable
- AAS Awards



AAS January 2005

Search for Superhumps in Possible SW Sextantis Stars

A.J. Carver (UW-Madison), Alan Whiting (CTIO), Linda Schmidtobreick (ESO)

Abstract

In the 2005 CTIO REU research projects, we searched for permanent superhumps in two variable stars: AH Men and V393 Hya. H 0551-819 and V393 Hya are cataclysmic variables in the 3-4 hour period range and therefore likely members of the SW Sex population. There might be a connection between this population and systems showing superhumps resulting from high mass transfer and large discs. To test this idea we obtained images using the 0.9m Cassegrain telescope on Cerro Tololo to determine light curves of these stars by differential photometry. Approximately 4.25 orbital periods of AH Men were observed over two nights and 3 orbital periods of V393 Hya were observed over three nights. Superhumps were not observed in V393 Hya. Evidence for superhumps was observed in AH Men in agreement with previous observations. Power spectra of AH Men also qualitatively agree with the power spectra from past observations. The National Science Foundation supported this research with grant no. 0353843

Cataclysmic Variables

- Red Dwarf (RD) and White Dwarf (WD) (Fig 1)
- RD fills its Roche lobe and loses matter to WD
- Matter forms a disc around WD
- Matter hitting disc creates 'hot spot'
- Unique opportunity to study accretion disks
- Changes observed on short time scales

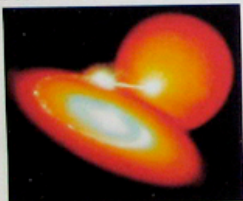


Figure 1: Artists conception of a close binary system

SW Sextantis Stars

- Subset of Nova-Like Variables, typically eclipsing
- High velocity emission line wings
- Line core absorption near phase 0.5
- Orbital periods of 3-4hrs

The Project

- Search for superhumps in possible SW Sextantis Stars
- Selected four stars to observe: AH Men, V1193 Ori, IM Eri, and V393 Hya
- Searching for new systems to observe that can help constrain disc models

Superhumps

- Are light curve features (Figure 2)
- Period slightly longer than CV orbital period
- Often triangular in shape
- Thought to be caused by energy dissipation of colliding disc orbits

WZ Sge Superhumps

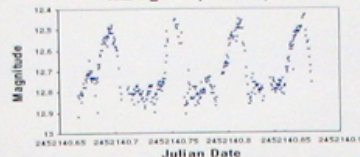


Figure 2: Superhumps in WZ Sge

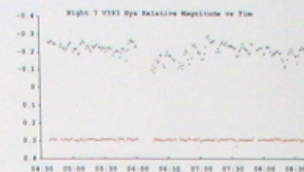
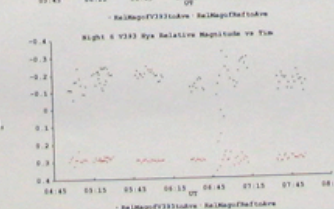
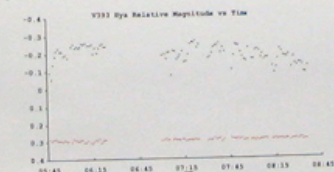
Photometry by AAVSO Observer, Lew Cook (COO)

Observing & Reduction

- Seven observing nights: Jan 25 - Jan 31, 2005
- .9m Cassegrain, 2048x2046 CCD w/ quad readout
- 1024x1024 ROI, 30 sec exposures
- V filter (5443Å peak 1060Å FWHM)
- AH Men 936 images, V393 Hya 386 images
- Reduced Image = (Raw Image - Bias)/Flat Field
- Averaged 43 dome flats (from nights 2, 4, 5, 6, 7)
- Averaged 63 biases (from nights 2, 4, 5, 6, 7)

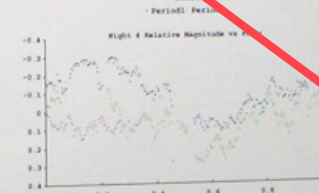
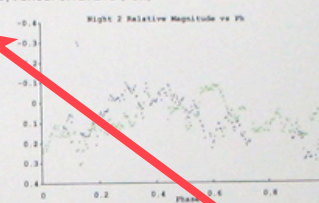
V393 Hya

Other Name: EC 10578-2935, RA: 11:00:17.45, DEC: -29:51:58.9, Galactic Longitude: 276, Galactic Latitude: 27, Object Type: NL, Magnitude Range: 15.9V, Period: 0.135d (~3h 15m)



AH Men

Other Names: Men1; 1H 0551-819; RA: 06:11:44.07, DEC: -81:49:24.1; Galactic Longitude: 294; Galactic Latitude: -28; Object Type: NL/DQ; Magnitude Range: 13.2 V -14.0 V; Period: 0.12721d (~3h)



Summary and Conclusions

- Flickering observed in V393 Hya light curve
- Superhumps not observed in V393 Hya light curve
- Flickering observed in AH Men light curve
- Broad features observed in AH Men light curve
- Superhump candidates in AH Men
- AH Men has been observed before

Future Work & Acknowledgements

- Observe more systems
- Synchronous photometric and spectroscopic observations

The National Science Foundation supported this research with grant no. 0353842. A.J. Carver has also been supported by the Wisconsin Space Grant Consortium. Thank you Alan Whiting, Linda Schmidtobreick, Don McCarthy, Bob Morse, Ken Nordsieck, Cary Forest, Aaron Steffen, Mike Stamatikos, Stefan Gerhardt, and Masaaki Yamada.

Correspondence to A.J. Carver: ajcarver1@gmail.com

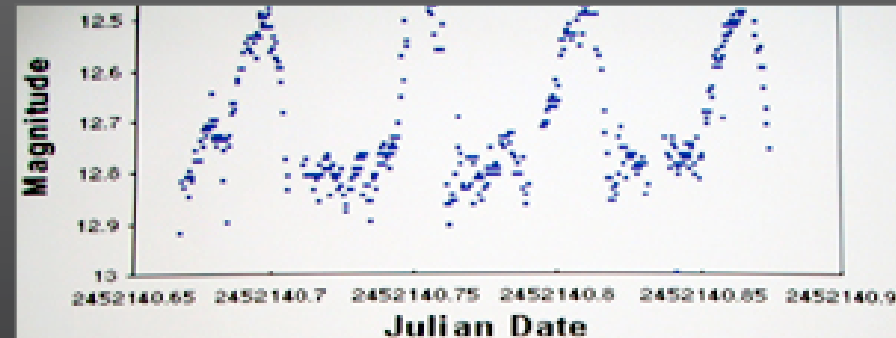
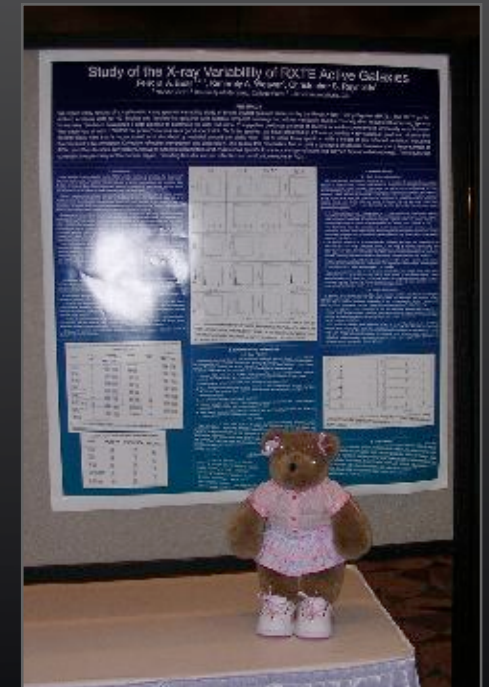
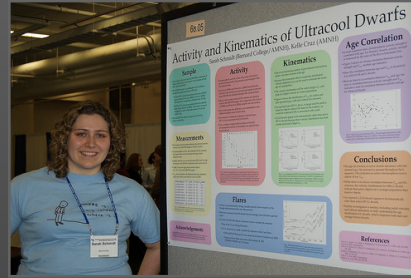
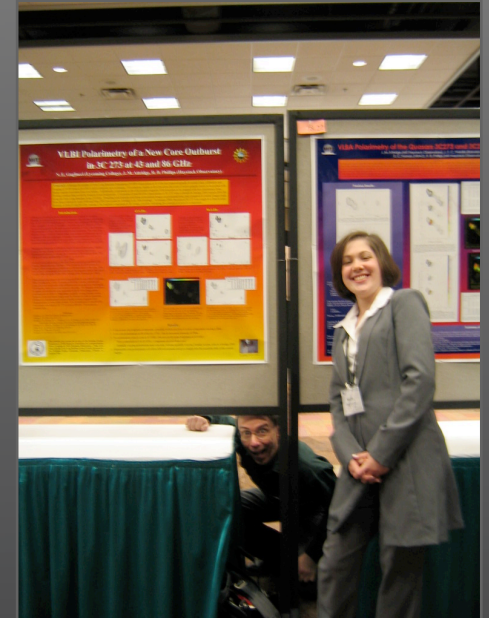


Figure 2: Superhumps in WZ Sge

Photometry by AAVSO Observer, Lew Cook (COO)

Strike a pose!




Content

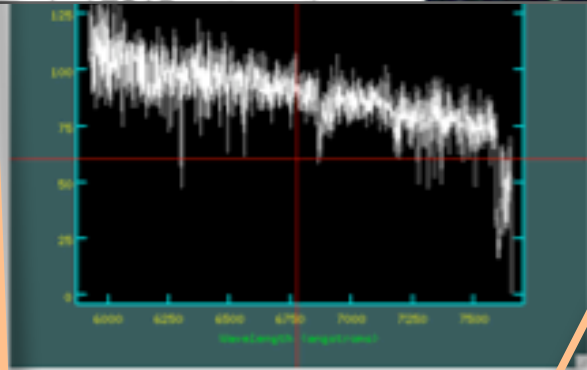
- Header: Who, Where, When
- Middle: Why, What, How
- Footer: Acknowledgements, Reference Citations

Var Her 04


What's Cool & Mysterious About Var Her 04
* One of the shortest period CVs known



Var Her 04 Field



Spectra of G companion to Var Her 04



Preliminary Var Her 04 spectrum (red bottom) showing a high-frequency signal (optically-thin CV with some emission over a prominent M3 star). Observations by Paula Szkodny at APO. Quick radial velocity measurements give an orbital period of 1.5 mins. Further reduction and analysis of enough radial velocity measurements is in progress.

Online At:

The AAVSO thanks the following observers for significant CCD contributions to these campaigns:

B. Aquino, M. Armstrong, J. Bedient, J. Blackwell, D. Boyd, S. Brady, T. Crawford, R. Corlan, L. Cook, S. Dvorak, J. Foster, J. Graham, T. Harrison, B. Harris, A. Henden, R. Huziak, T. Itkonen, R. James, Z. Kereszty, C. Knapp, R. Koff, M. Koppelman, J. Mattei, J. McClusky, D. Messier, R. Miles, M. Nicholas, N. Quinn, A. Oksanen, P. Paakonen, J. Pittichová, C. Pullen, S. S. Simonsen, D. Starkey, D. Tandy, P. Tikkanen, G. Walker, D. Wells, D. West, T. Vanmunster, R. Zissell

Some equipment used in this campaign was funded by a grant from the Curry Foundation and analysis done with software developed with support from the AAS Small Research Grant program.

References

Ciardia, D.R., Wachter, S., Hoard, D.W., van Belle, G., Howell, S.B. 2004, Amer. Astr. Soc. Meet. 205, #19.12

Foster, G. 1995, Acta Astr. 45, 199-1999

Patterson, J. 1998, PASP, 110, 1132

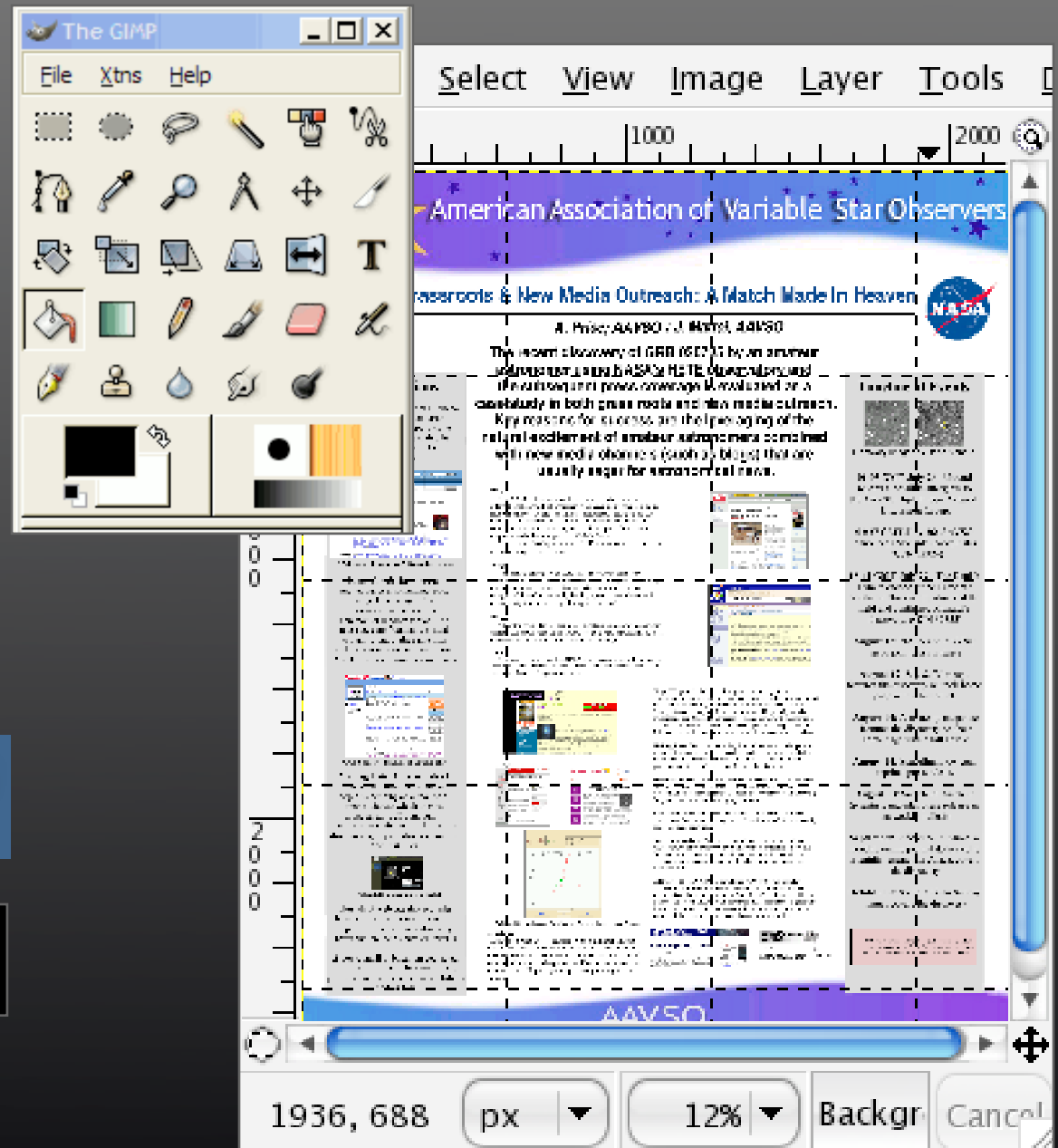
Price, A. 2004, PASP, 116, 826.

Binnewald, E. A., Thorne, J. D.

Table

Software

- Adobe InDesign (\$\$\$)
- Adobe Photoshop (\$\$\$)
- Microsoft PowerPoint (\$\$)
- Apple Aperture (\$\$)
- Shareware: Paint Shop Pro (Windows) (\$)
- Freeware: GIMP (OS X, Linux, Windows)
- Good hardware
- Ask for help!



GimpFAQ.org 

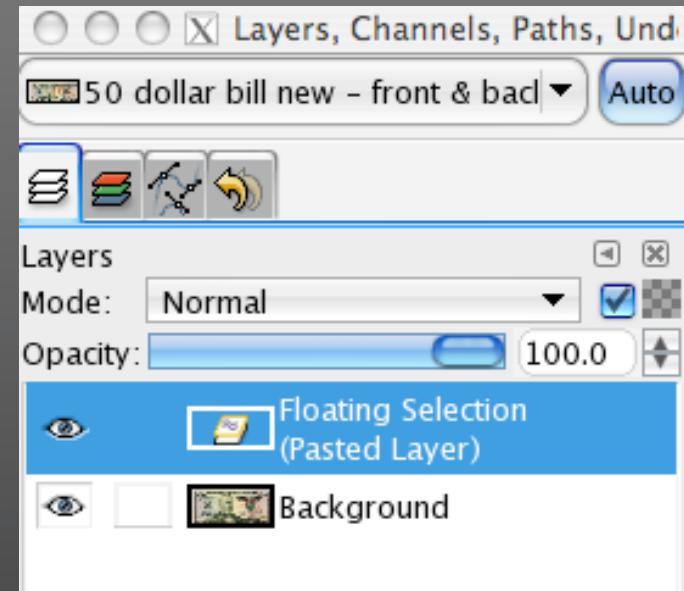
Photoshop911.com

The
Photoshop
Blog



Wanna be a player? Then Layer.

Layers allow you to make changes easily and try out design ideas.



Rules of Thumb

- Each meeting has its own guidelines, read up!
- AAVSO: Flexible
- AAS: 44" x 44" inches
- Bring thumbtacks
- Photos > 3" x 3"
- Text > 18pt
- Sans serif fonts such as Helvetica for short text
- Serif fonts such as Times New Roman for long text
- DON'T SCREAM!
- Don't underline



Layout

- Short summary!
- Title
- Pictures
- Abstract
- Conclusion
- Present logically
- View at 100%
- Large margins
- Use bullets, *style*, and **color**!
- Ask a non-astronomer

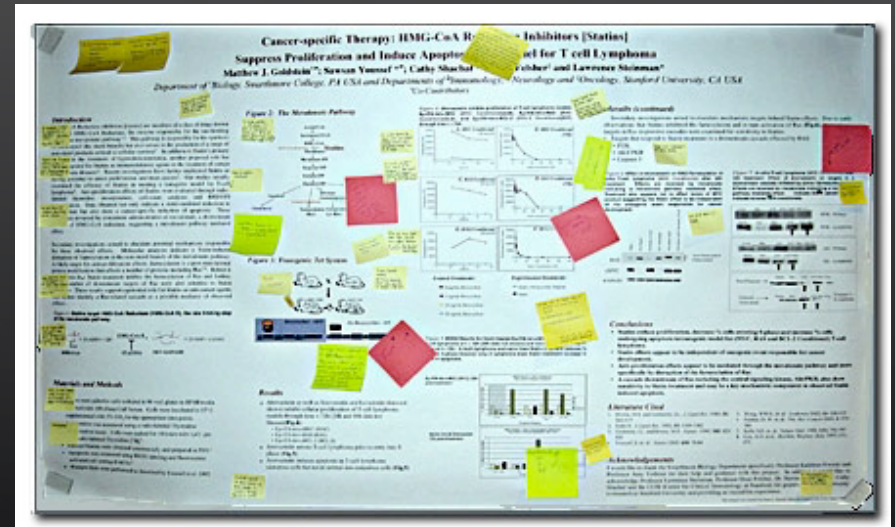


Photo By Colin Purrington
From Swarthmore College

<http://www.swarthmore.edu/NatSci/cpurrin1/posteradvice.htm>

Alignment

Balance

Full left justification

Around the rough and ragged rock the ragged rascal randomly ran.

Around the rough and ragged rock the ragged rascal randomly ran.

The screenshot shows the AAVSO website with a balanced layout. It features a header with the AAVSO logo and navigation links. The main content is organized into several columns: 'Advantages For Pros' on the left, 'Major Works' in the middle, and 'Quality Coverage' on the right. The footer contains contact information and the AAVSO logo.

The diagram illustrates a routing process with three numbered steps. Step 1 is 'Authoring (Price)', step 2 is 'Signing (Allen)', and step 3 is 'Routing (Seaman)'. Each step is accompanied by a brief description of the process. The diagram uses arrows to show the flow from step 1 to step 2, and then to step 3.

- 1. Authoring (Price):** A perl script and HTML interface was written to create the XML packets based on a recent real event.
- 2. Signing (Allen):** A digital signature was assigned to the XML packet using an x509 certificate with the W3C XML signature schema.
- 3. Routing (Seaman):** The shareware routing system Elvin was used to distribute the packets. Open source alternatives to Elvin include Apache Pubsub, ICE, JMS, Mule and Jabber.

Align Columns



Streams of Neutral Hydrogen in the M81 Group of Galaxies

K. Rubin (Yale), G. I. Langston (NRAO), and F. Walter (NRAO)



ABSTRACT

The nearby M81/M82 group of galaxies is embedded in a cloud of neutral hydrogen that traces the history of the interaction between these galaxies. At ~ 3.5 Mpc the M81/M82 group is one of the closest groups.

A complete census of dwarf galaxies and high velocity clouds (HVCs) in the M81 group is important for understanding the mass distribution of this group. We set a 6σ detection limit for H_I of $3 \times 10^6 M_\odot$. This study has relevance to studies of our own Galaxy/Local group. The exact location of HVCs surrounding our galaxy still remains a puzzle. Our observations show the M81/M82 group has connected streams of hydrogen, not isolated clouds.

J1021+6842

IC2574



Introduction

The nearby ($D \sim 3.5$ Mpc) M81/M82 group of galaxies is a *prime laboratory* to study dwarf galaxies. This group harbors some 40 known dwarf galaxies of all morphological types (dIrrs, dSphs/dEs as well as a tidal dwarf). Since the distance to all group members is approximately the same, galaxy properties can be compared directly. A detailed

Observations

We observed between 1385.4 and 1435.4 MHz using the GBT spectrometer. This allows us to see velocities between 7380 km/s and -3170 km/s with 0.6 km/s resolution. We present data between channels 3388 and 6480, averaging bins of 40 channels. With this spectral resolution we may detect features greater than 25 km/s wide in images with an rms level of 10 mJy/beam.

We first imaged a 2×2 degree region centered on M81. An “on-the-fly” mapping procedure with integrations of 5 seconds, declination steps of $4'$ and a rest frequency of 1420.4058 MHz was used. We mapped the entire M81/82 region by dividing the 22.5×9 degree region into 6 adjacent sections.

M81

NGC3077

25kpc

Data Reduction

Each of the 45 scans of the map were calibrated using the following equation:

$$S(RA, Dec, \nu) = T_{reference}(\nu) \frac{C_{signal} - C_{reference}}{C_{reference}}$$

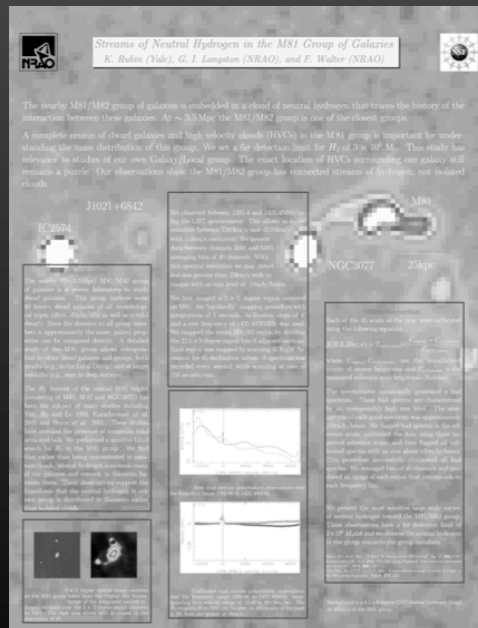
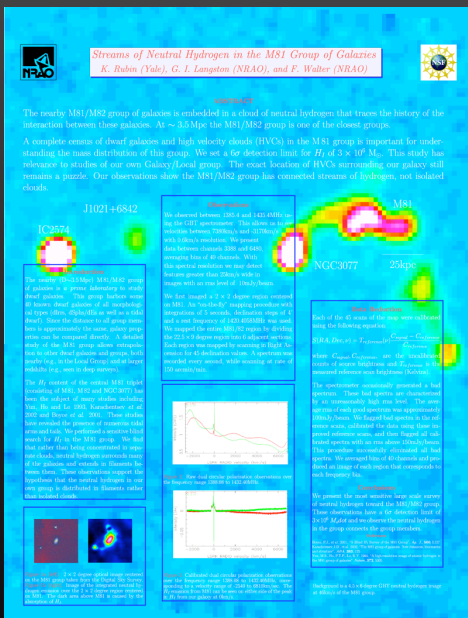
Color

Contrast

Test in black and white
Color blindness (avoid red-green differentials)

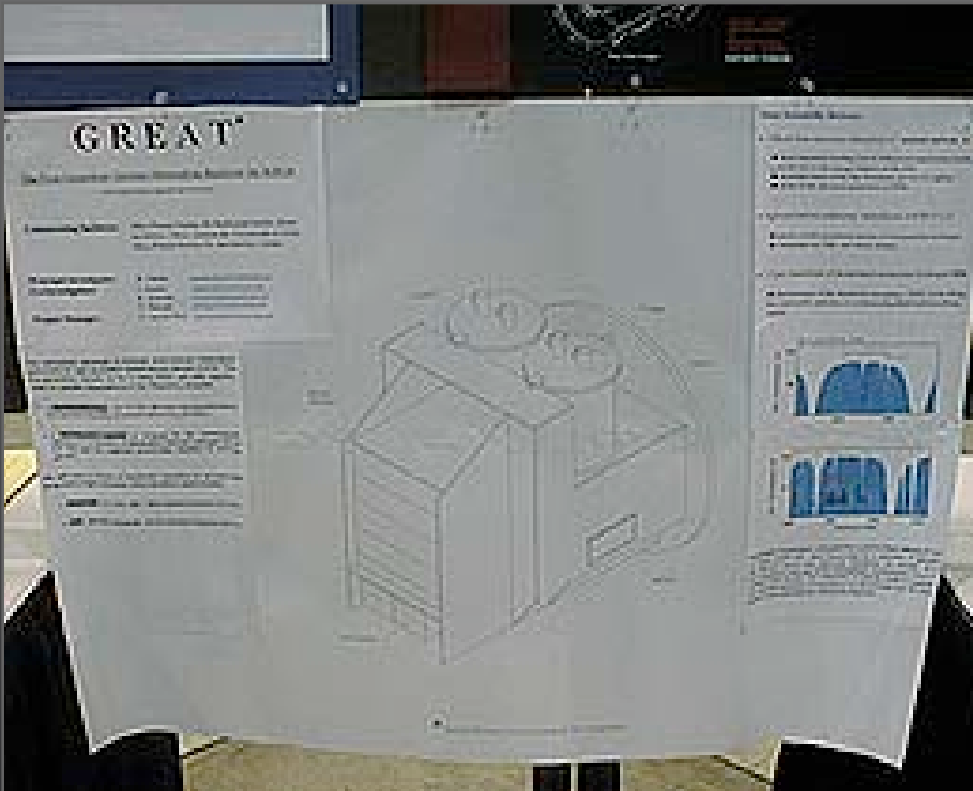
Be consistent: hot, warm, cool, cold palletes

Normal	Protan	Deutan	Tritan
000000	000000	000000	000000
000033	000E1F	000F1A	001111
000066	001D3E	001F34	002223
000099	002C5D	002F4F	003335
0000CC	003B7C	003F69	004447
0000FF	004A9C	004F84	005559



From Designing for Color Challenged
http://www.internettg.org/newsletter/mar99/color_challenged_table.html

GREAT vs. GLAST



Gamma-ray Large Area Space Telescope

GLAST

The GLAST Education and Public Outreach Program

Education Public Outreach

Sonoma State University

P. Phib T. Graves S. Silva A. Simionnet G. Spitzer L. Connorsky

Introduction

The Gamma-ray Large Area Space Telescope (GLAST) is a high-energy astronomical satellite due for launch in 2007. It will study gamma rays from exotic sources such as supermassive black holes, gamma-ray bursts, pulsars, and perhaps even dark matter. The GLAST project has a dedicated Education and Public Outreach (E-PO) program based at Sonoma State University (SSU). The type of science GLAST will do naturally excites the public about astronomy, and the E-PO program produces a wide variety of public and classroom educational materials to encourage this excitement and curiosity.



E-PO team members

Block Hole Project

Fitting in now underway by Thomas Leuss Productions on a 1-hour show for PBS-NOVA about black holes. GLAST E-PO provided the startup funding, which led to additional NSF funding for an accompanying large format planetarium show and associated classroom materials. The "Black Hole Project" shows and educator guides are being developed in partnership with the Denver Museum of Nature and Science.



Black hole visualization

Educator Ambassadors

Ten master educators from across the country and Canada have been chosen to help develop, test, review, and disseminate GLAST educational products. These award-winning GLAST Educator Ambassadors (E-As) undergo rigorous bi-monthly training at SSU, to prepare them to train educators to use GLAST and other NASA educational materials.



Educator ambassadors

Educator Training

GLAST E-PO is committed to training educators in the math and science of high-energy astronomy. The E-PO group, along with the Educator Ambassadors and the Suna Cruz Institute for Particle Physics Outreach Program, gave presentations and workshops at 40 national and regional educators conferences in FY 2004, reaching nearly 6000 teachers directly, and 40,000 indirectly. GLAST E-PO also contributed to a short-course entitled "Modeling the Universe" that is given to local teachers at various scientific conferences.



Educator training session

GTN

The Global Telescope Network (GTN) is a consortium of small telescopes around the country that will observe GLAST and other high-energy astronomical sources. The GLAST Optical Robotic Telescope (GORT) at SSU is the flagship observatory for the GTN, and has already begun operations. For more information, see <http://gtm.ssu.edu>



GTN telescope

SLAC Virtual Visitor Center

As part of the SLAC Virtual Visitor Center web site, GLAST E-PO is developing a simulation of GLAST Large Area Telescope (LAT) that will allow users to learn about the physical processes operating in a pure-conversion telescope. The LAT simulation will be targeted for use in formal education and is currently being developed for the high school and college physics students at community college.



SLAC Virtual Visitor Center simulation

Printed Materials

TOPS Learning Systems, Inc. is developing a series of lesson modules based on the science and technology of GLAST. The first module, "Far Out Math," was published in 2003, and the second module, "Scale the Universe," will be available in spring 2005. The third module, about angles and apparent size, is currently being written.



Printed materials

For younger students, we are creating a pop-up book showing the anatomy of an active galaxy. It also includes a story entitled "How the Galaxy Got its Juice," and the Early Active Galaxy activity where students can build (and eat!) a model of an AGN.



Pop-up book

Space Mysteries

GLAST and the XMM-Newton mission are jointly sponsoring a set of classroom activities teaching students about "supernovae and supernova remnants. The first activity, simulating a supernova light curve using inductive decay, is currently nearing completion.



Space Mysteries activity

Public Outreach

A public brochure has been designed to describe the GLAST mission and its instruments. The brochure was extensively reviewed by the science and E-PO teams, and is now being distributed at science and educator meetings.



Public brochure

"GLAST Race"

"GLAST Race" is a board game in which players compete to be the first to build the GLAST satellite and use it to observe five astronomical targets.



GLAST Race board game

Mission Site: <http://glast.gsfc.nasa.gov>

E-PO Site: <http://glast.ssu.edu>

SONOMA STATE UNIVERSITY

Don't *Postpone*

- Kinko's: ~\$80-\$140
- PDF format or 300dpi TIFF
- Submit via Internet
- Two CDROMs
- Respect Uncle Murphy!
Expect Kinko's et al. will make a mistake.
- Plan at least 2 business days for printing.
- DIY



More Info

AAVSO posters are on our web site - send us yours!

<http://www.aavso.org/vstar/posters.shtml>

Variable Star Posters and Talks

The following posters focus on variable stars. If you have a poster you would like to add to this list, please [let us know](#). The Talks listed here were NOT given at an aavso meeting. To access those talks, visit the [meetings archive pages](#).

[Photometric Surveys and Variable Stars](#) (ppt file), Matthew Templeton, AAVSO, Presented at the USNO Flagstaff Station, February 24, 2006.

[Preliminary Results from the AAVSO Infrared Photometry Group](#) (3.3 MB, pdf) - by M.R. Templeton, J.D. West (AAVSO), D. Terrel (SWRI), W.D. Hodgson, M.D. Koppelman, K.D. Luedeke, J.E. Wood, and A.A. Henden (AAVSO); January 2006 AAS Meeting



V838 Mon and its Light Echo
Credit: [Hubble Heritage Team](#),
[ESA](#), [NASA](#)

Advice on designing scientific posters

<http://www.swarthmore.edu/NatSci/cpurrrin1/posteradvice.htm>

Internetworking: Designing for Color Challenged

http://www.internettg.org/newsletter/mar99/color_challenged_table.html

Tips for creating scientific posters

http://bildmakarna.kib.ki.se/posters/tips/index_en.html

fin.

Where's the Fun?

- Use all parts of the brain
- Nice shoes!
- Handouts

Where's the Profit?

fghfttyyytttt

- hj