

Bowen Introduces "New" AstroNotes All-Dome Shows

by Brien Barr

With the growing developments in all-dome video star/graphics projection systems, Bowen has decided to convert our existing **AstroNotes** custom showkits (*Mystery of the Missing Seasons, Moonwitch, Lifestyles of the Stars, and Sandy, Pepper, and the Eclipse*) to all-dome video formats. Mike Grznar and myself spent a week in Salt Lake City last fall, working with Evans & Sutherland staff to start converting our custom showkits into the Digistar 3 system format. Not only did we convert to all-dome video format, but we also over-

hauled and improved much of the graphics within the shows as well as created **5.1 surround sound soundtracks**. The shows are also compatible with other all-dome video star/graphics projection systems such as Minolta's Media-Globe; Digitalis Education Solutions' Digitarium Alpha; SkyScan's Definiti PD, Definiti Twin, SkyVision, and DigitalSky; and Spitz's SciDome and Esky. The shows are pre-rendered so that you can load them completely into your all-dome video system for playback. Each show ships with a complete script with visual cues, a complete timecode cue sheet for visual cues, and stereo and 5.1 soundtracks. Narrationless stereo and



surround soundtracks are available for non-English speaking facilities. Since each show is **ready to go "out of the box,"** they are ideal for new or upgraded planetariums that are trying to **get shows in front of audiences quickly**. They allow you to have multiple shows online while you are producing in-house material of your own. These shows offer user-friendly, educational, and entertaining theater material. *Mystery of the Missing Seasons* show will ship starting on September 1, 2005. *Moonwitch, Lifestyles of the Stars, and Sandy, Pepper, and the Eclipse* showkits will be available starting Thanksgiving 2005.

For pricing information and descriptions of each show, visit: www.bowentechnovation.com/planetarium/shows5.htm.

Project Profile: Griffith Planetarium

by Mike Grznar

Bowen Technovation has been selected to provide the master theater control for the refurbished planetarium at **Griffith Observatory** in Los Angeles, California, via our **AstroFX Commander PC Master Control System**. We are excited to be involved with this project that has brought together some of



Griffith Observatory - Photo by Anthony Cook

the highest quality vendors from around the world.

As provider of the master control for the theater, Bowen is responsible for integrating all of the aspects of show performance together into one, easy-to-use interface. As with every AstroFX Commander system, programming is done through a simple drag-and-drop, timeline-based technique, allowing quick and simple creation

of cues to control any aspect of the theater. In the case of Griffith, this allows them to quickly integrate 4 very discrete, yet powerful systems with just a few clicks of a mouse.



Griffith Observatory - Photo by Troy Powers

At the heart of the theater are two separate star projection systems, The **Digistar 3 Laser**, and **Zeiss Universarium**

Mark IX. Bowen worked with both Evans & Sutherland and Zeiss to create
(continued on page 2)

*(Project Profile: Griffith Planetarium
continued from page 1)*

custom-built driver interfaces for both systems. Zeiss testing was completed on-site in May in consultation with **Olaf Kollosche** from Zeiss, and full show control and sync abilities are now certified as functional. Bowen has also been working with E&S since last November to create a complete 2-way communication driver in order to create **seamless control over Digistar 3 systems**. This interface is currently being used in Shanghai, China; Santa Barbara, California; as well as Laredo, Texas where, because of the 2-way communication, they are actually able to control their Commander system through their Digistar Remote.

Additionally, Bowen Technovation provides a series of **custom GUI screens in every Commander system**, and Griffith is no exception. Operators can trigger any show in the system by just the click of a mouse, tap on their touchscreen, or push of a remote button. Lighting and sound can either be pre-programmed or manipulated by on-screen faders and buttons for immediate changes when needed. Zeiss sequences can be played, paused, and stopped right from the GUI, and any Digistar command can either be executed by a button push or by directly typing the command into a text box on screen.

Want one for your theater?

For more information on applying AstroFXCommander to your own theater, check it out at our website at: www.bowentechnovation.com/planetarium/commander.html or contact us at (317) 863-0525.

Bowen Upgrades to a New Enlarged Facility

by Jeff Norris and Diana Bowen

Bowen Technovation is on the move - literally. I guess I have been too...yes, I'm the same Jeff Norris...I am back on staff as a Technovator.

Anyway, Jeff and Diana Bowen recently completed the paperwork to purchase a great building on Indianapolis' northeast side.

The approximately 8,000 square-foot two-story plus building, which was built in 1996, will provide Bowen Technovation (BT) the opportunity to continue the exciting project work that Jeff and his team have been providing for 20 years (**2005 marks our 20th Anniversary in business operations**). It will also provide additional space needed to host focus group studies and conferences.

Everyone at Bowen is excited by the new building, and not just the staff. "The dogs will have more greenspace to walk outside and more room to run indoors," says Diana.

The building will have an **all-new interior** designed to reflect the needs of the BT team. The building is currently divided into two spaces - administrative and warehouse. The administrative part of the building will remain fairly unchanged and will house our offices, design CAD stations, purchasing, client meeting areas, kitchen...

It's the warehouse area that will undergo a major transformation. The shell of the warehouse will remain, but within that shell new, larger system **programming and demo facilities** and a **new audio studio and control room** will be constructed.

Bowen staff members are very excited about what we can do with the new place.

"The larger Demo Room will allow us to maintain more on-line product for testing and client demonstration purposes, as well as making programming more efficient," according to Mike Grznar. "The new demo room space will also allow us to hang and test large scale **exhibit lighting systems** due to the higher 15' exposed steel ceilings," added Dan Ritchie.

Jeff Bowen states, "One of my favorite activities at BT is when an exhibit designer brings their clients, content producers, and **focus test groups** to our place to test the mock up of their new systems. We can now do these with the entire exhibit built up so they can work with the 'real-deal'."

As with all of the previous Bowen locations, the new building will have a state-of-the-art studio and control room. These rooms will not only provide high-quality recording capabilities, they also showcase Bowen Technovation's acoustic design skills and **AstroFXCreator** production packages. These rooms will actually be two free-standing rooms "floating" within the larger warehouse space providing acoustic isolation.

The **video production suite** will be an integral part of the new building. "We will install tie-lines between the video suite, audio control room, and programming/demo rooms allowing digital and analog audio and video signals to be routed to and fro," said Brien Barr.

Michael Phillips gets a large new tech shop with a window! With a large number of CRT, LCD, and DLP projectors installed in planetariums and museums around the world, the **tech shop is the hub of our service department**. It is equipped with all the necessary test gear needed to diagnose and repair potential equipment problems.

The BT team will make good use of increased square footage. In addition to the

“floor” space, there is approximately 2,000 square footage of clean mezzanine storage. Dan wants to put in a swinging grapevine from the second floor of the mezzanine, but actually this large space will enable the BT staff to create **exhibit mock-ups**, fly speakers from the ceiling trusses to test speaker placements and performance, and **test new projector technologies**, such as spherical geometry correction, on a larger scale.

The production space will also provide the Bowen Technovation team with more space to build and test equipment racks and technology packages prior to shipping to customer sites. "The larger assembly space will provide us more room to build racks, which will make the process more productive and time-efficient," according to Michael Phillips.

The new building at 7999 East 88th is located ten blocks from the **BT development and test dome** at Lawrence North High School. This 30' dome has many BT products incorporated into the facility such as a three-channel AstroFXMedia-Manager system, a full version of the AstroFXCreator workstation, AstroFX-Commander, a Barco CRT projector, 2 Sanyo LCD projectors for rear-screen projection, and a 3-color AstroFXAurora incandescent cove light system

In real estate, they say the three most important things in buying a property are location, location, and location. Well, if that's true, then Bowen Technovation has chosen well.



Bowen Introduces the New AstroFX DMP Digital Video & Media Player Family

by Brien Barr

In 1998, Bowen Technovation was first to introduce **affordable digital video technology** for use in the planetarium community with the AstroFX 1.1 and Astro-FX 2.1 players which now have new names. The AstroFX 1.1 and AstroFX 2.1 will now be known as the AstroFX DMP-1 and AstroFX DMP-2.

Brand new to the digital media player family are the AstroFX DMP-LE digital media players. The DMP-LE offers the high-quality audio/MPEG-2 video playback with data rates up to 10 mb/sec that the planetaria have come to know with the AstroFX DMP-1 and AstroFX DMP-2 players. Additionally, your existing MPEG-2 video clips can be played back from the AstroFX DMP-LE with no additional production.

The big news... **The price is about 1/2 the cost of our popular AstroFX1.1.**

There are two versions of the AstroFX DMP-LE. There is a **solid-state card** version of the AstroFX DMP-LE that uses a **standard Compact Flash media card** to house and playback audio/video files. File transfers for the card version can be done via FTP file transfers or by



using a standard Compact Flash card reader. Currently, card version players can support up to 4 GB CF cards.

The second version comes with a 40 GB internal hard drive, expandable up to 137 GB.

More news...In addition to playing MPEG-2 files, the AstroFX DMP-LE is able to playback PCM uncompressed WAV and MPA (mpeg audio) audio files, as well as MPI (mpeg image) still image files. The AstroFX DMP-LE delivers video from composite and S-video outputs and delivers stereo audio via -10 db unbalanced RCA outputs.

The AstroFX DMP-LE is **controllable via RS-232** or via an external, remote button/control panel. This means that the AstroFX DMP-LE can be integrated with your AstroFXCommander show control system or other master control system. DMP-LE units come with a playlist/schedule building software, making it possible to build a playlist/schedule for automatic startup, playback of audio/video, and shutdown of the units like the other players in the AstroFX DMP family.

The AstroFX DMP-LE player is a 1/2 U rack space unit, as opposed to a full 1 U rack space like the other AstroFX DMP players. **Two AstroFX DMP-LE units fit side by side in a 1 U rack space.**



DMP-LE units can be rack-mounted, mounted horizontally, or vertically in exhibits in just about any location you can imagine.

Read about the whole AstroFX Digital Media Player family at:

www.bowentechnovation.com/planetarium/astro.htm.

The Technovators Develop a New Advanced LED Technology

by Dan Ritchie

The well-known Bowen **Astro-FXAurora** line of **LED lighting** has taken a new form through the engineering dedication of the Bowen staff, a major financial investment by Bowen ownership, and with the support of the nation's most experienced LED product manufacturers.

This **new version of our high-resolution 16-bit LED system** works similar to our previous version, but has a few advantages. The light source is a single, newer technology "tri-color" LED unit instead of the 3 individual R-G-B LED's used in the past. The 3 LED's combined into one tri-color unit allows for the colors of light to come **cohesively** from the same point and allows greater LED density per "color" **eliminating any possible scalloping or striping** in the color projection. The units also have been engineered to create an even amount of light from all LED sources making the cove lighting smooth all the way around the cove.

Through the use of this newer technology, we were also able to use a **higher powered LED source**, so overall the output of the strips are brighter than our previous version as well. Clients have always been impressed with how little wire our systems involve, but new power supplies enable us to attach even more strips on a single harness meaning there is **less wiring in the cove** and in the overall installation. One single run of cable will supply 32 strips with everything they need to operate. This cuts down on installation requirements because there is less wire than traditional incandescent lights and less wiring than most LED systems out on the market today.

To respond to requests from clients, we have put together a package of a "completely **LED**" **Dome Tour lighting** solutions for the illumination of the speakers and other points of interest behind the dome. This package can be combined with the **Mike Grznar scripted "Pre-Show Dome Tour" soundtrack** <http://www.bowentechnovation.com/planetarium/shows6.htm> that has been produced for the purpose of showing off the finer points of the planetarium and other large format domed theaters. Stop by our website to take a look at some of these products and features available to you.

Dome Tour:
<http://www.bowentechnovation.com/planetarium/shows6.htm>

Tech Support Call Prep 101

by Michael Phillips

We have a terrific group of folks here at Bowen that are always available to field your technical support calls. Here are **some tips** on how to make your support experience a good one.

1. Take a deep breath and first check all of your device(s) power status and connections. A very important part of this is to **verify that you have power to your equipment**.
2. Check all power switches, power connections, plugs and cables connecting devices together. Make sure that nothing came unplugged that is essential to the proper operation of your system.
3. Once that it has been determined that everything is properly connected and powered on, Power Off your system, wait a couple minutes and then Power On your system again effectively "**Rebooting**" **your system**.

Do not reinstall software without first contacting your Bowen representative.

If you still have functionality issues after rebooting the system, **you should call us and ask for technical assistance**. There are usually several "tricks" that the technical support guys know about that may **save you time and money!**

Once it has been determined that there is no other alternative other than repair, there is important information that you should have readily available to make this happen efficiently. **Bowen Technovation supplies with all of our systems a custom System Documentation binder** that has all of the information you will need for customer support, including all the technical data for your product(s).

Here is a brief checklist that should prepare you for what you will be asked for in dealing with Technical Support.

1. You will need the Model Number, Serial Number and Date of Purchase information available for your device(s).
2. At Bowen Technovation **we will generally handle all issues concerned with contacting the manufacturer for any type of support** and sales issues for our clients. You should never need to call a manufacturer for warranty-period support.
3. If the device is past warranty and post sales support is limited, please ask for additional assistance from your Bowen Technovation representative. Bowen Technovation staff is more than happy to assist you in your time of need.
4. If you decide to proceed on your own and contact the manufacturer for technical support, you will need the same aforementioned device information. If you are successful you should be given all the information needed to send in your device(s) for repair.

This should get you moving in the right direction and I wish you a happy return of your beloved equipment. Have a fantastic day!

EAW to Manufacture Custom Bowen Speaker

by Tony Whitlock

In April of this year, Jeff Bowen and I traveled to the factory of **Eastern Acoustic Works**, located at 1 Main Street, in the small town of Whitinsville, MA. The purpose of the trip was to learn about recent additions to the EAW product line, take a factory tour (including on-site wood and paint shops), and to talk to their engineers about designing a **custom Bowen speaker enclosure** for some of our planetarium, exhibit, and large format film installations.

With over ??? models in their product line, there was a lot to cover (and listen to), but that is exactly what we did for the first day and a half. It was interesting to hear the differences between all of the different models, and Jeff worked with me to explain the use for each of the products we tested. He even pointed out the ones that he had not certified for our installations and told me why.

The EAW factory is exactly what you would want to see when visiting a **high-end speaker builder**: dedicated employees hand building and hand finishing enclosures, followed by rigorous quality control testing. This is not an assembly line type of atmosphere. They start with raw wood in the wood shop and mill the parts to the specs for a particular enclosure. Then it goes to the next area, where it is fully assembled by hand. From there it moves to the paint shop. After it has dried, it moves on to electronics installation. Lastly, the speakers visit the quality control department, where they are tested a final time. It is important to note that **the products are inspected at each stage** in the manufacturing, the pieces coming out of the wood shop are checked for flaws, just as they are coming out of assembly, painting, etc., right up to the

quality control department. EAW has long been considered one of the world's premier speaker builders, and a tour of their factory is all one needs to see how they got there.

Perhaps the most important part of our trip was for Jeff to talk to their engineers about a custom speaker design he wanted them to build. He was looking for something that **could fit into extremely tight spaces** (like behind a dome), has plenty of power, the **right coverage pattern** and frequency response (this is, after all, for program material, not a rock show), and, above all else, a speaker that is **extremely accurate**. The design is comparable to very complex systems where we used multiple speaker enclosures in one location, except this is **all in one box**. This takes care of problems that can arise from multi-box arrayed systems, such as phase coherency, uneven coverage patterns, and higher installation costs.

Although the final specs are not yet available, we do know that its power handling is somewhere in the **700-800 watt** range in single amp mode, and in bi-amp mode, the low frequency power handling will likely double. It puts out about 126 db. Not only **accurate and smooth**...this thing is LOUDDD. We received our prototype model a couple of weeks ago, and no one needs specs to know that **it sounds amazing**.

Actually, this should not be a big surprise...**Jeff has been designing and installing premium grade systems for nearly 25 years** now. With EAW support, he now will have the exact audio tool he has wanted for some time.

Who Ya Gonna Call?

by Jeff Bowen

We have always had a unique message in our web and printed promotional materials, conference displays, and vendor talks. We always make it a point to thank and introduce **our staff members** when talking about our firm. Case in point is that we have featured bios and pics of most of our staff on our web site from the first day it was posted.

Here are some of the people you'll talk with when you call us. They are often assisted by additional full and part time staff and our Bowen trained contractors.

Read more about them on our website, but here are some of our Technovators.

Mark Trotter



Mark has an extensive background in museum and planetarium work that spans twenty-five years. He began his planetarium career as a student worker at Louisiana Tech

University in Ruston, Louisiana and later became director of the university's planetarium. From there he returned to his hometown of Shreveport, LA to direct the city's planetarium for ten years. As the planetarium curator for the Audubon Louisiana Nature Center in New Orleans he was responsible for the programming and financial success of the planetarium as well as maintaining exhibits throughout the center. He also has worked as Operations Director for a major audio visual company. Mark is also a certified Barco CRT Technician.

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Dan Ritchie



Iowa native Dan Ritchie joined the staff in 2000. He attended Waldorf College

working towards a degree in General Engineering, but developed a keen interest in video production and technical theater. He then transferred to Middle Tennessee State University to earn a BS in Sound Engineering. Also an avid photographer with a high level of experience in Photoshop, he also has a keen interest in and skill set for creation and troubleshooting of electronics software and hardware. Dan works extensively with development of our new LED lighting and interactive exhibit systems, and frequently is an on-site project manager and trainer. As an example, Dan recently installed our systems in Shanghai, China and soon will be headed off to Torino, Italy to do the same. Dan is also a certified BSS Soundweb Designer/Programmer as well as a certified Barco CRT Technician.

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Mike Grznar



Mike fits right in at BT as he is an accomplished keyboard artist with degrees in Astronomy and Physics from Ohio

Wesleyan University. He came to us after a great stint at Center of Science and Industry (COSI) in Columbus, Ohio where he kept busy with public speaking and performance, Spitz and Digistar planetarium/theater operation, SPICE automation programming, Digistar programming, script composition and production, electronic repair, and large telescope operation.

At BT he supervises show productions,

designs and programs show control systems for clients, and provides a high level of technical and creative support for all Bowen systems.

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Michael Phillips



Like everyone else at Bowen Technovation, Michael Phillips has varied skill and education levels that culminate in the addition of another flexible, helpful, and valued employee for the Bowen Technovation team.

From 1973 until 1983, he developed as a general machinist and machined parts for the General Electric Turbine Helicopter Engine. During 1977, the family owned machine shop took on a springboard project from an investment group of designers and mechanical engineers. They helped develop a hybrid electric/gasoline powered car shown for the first time at the Indianapolis Auto Show, which also drew local news coverage. Since 1985, he has held an Associates Degree in Electronics Engineering from ITT Technical Institute and is currently our Service Department Manager. He holds the highest level of Barco Certification available, as well as having earned other important equipment design and support certifications.

Michael also has a strong background in the design and operation of analog and digital lighting systems and comes in quite handy as an occasional installer.

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Jeff Norris



Having worked in the audio/visual industry for more than fifteen years, Jeff has done everything from starting out with hotel a/v setup thru currently engineering complex integrated systems for installation.

Some of Jeff's projects include assisting Jeff Bowen with the first three productions and system installation for the first Spitz Electric Sky theater in the Canadian Yukon in 1996, systems at MOSI Tampa, Spacequest Planetarium, Fernbank Science Center, Cumberland Science Museum, and new construction at OBU Planetarium. He also worked with Jeff and other Bowen staff to direct live gameday production of NFL Indianapolis Colts' in-stadium and broadcast elements including scripting, video, audio, lighting, and pyrotechnics.

Jeff is experienced in AutoCad creating architectural markups, system flow diagrams, concept design drawings, installation documentation, and as-built drawings.

Jeff is a Lab retriever nut, so he and Diana get along great sharing "doggie tales."

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Tony Whitlock



Tony joined us after extensive local and road experience with one of the nation's best known A/V rental and staging

firms. He was awarded a Bachelor of Arts in Telecommunications from Indiana University in May 1998 and did a lot of work with WUIS (radio) and WTIU (public television) campus stations while there.

At Bowen, he manages all aspects of purchasing, shipping, receiving, and also assists Jeff with testing and evaluation of new audio and video equipment and with planetarium and exhibit system flow-charting/estimating.

Tony is also an experienced performing musician. If you go to see him perform, you just might see Dan there!

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Brien Barr



Brien very well may be the person who has configured and tested your new Bowen FXCreator audio/video editing system. His solid education in audio and video production began with chasing and receiving a BA in Telecommunications/Minor Studies in Film at Ball State University. He is also a holder of multiple Advanced Master Class Certifications from the well-known Recording Workshop (Chillicothe, OH) including Recording Engineering & Music Production Program, Studio Maintenance & Troubleshooting Program, and Advanced Recording Engineering & Music Production Program.

His knowledge of digital production software is extensive and includes the Adobe Digital Video Suite Pro (Photoshop, Premier, Audition), Illustrator, Media 100, Vegas, ProTools, Avid, 3D Max, Digital

Performer, Peak, and Spark. Brien is also a certified Barco Technician, a Soundweb Designer, and Xantech Design certified.

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Diana Bowen



In 2001, Diana Bowen completed a successful 23 year career as a Vice President and Division

Manager with a large banking corporation, and now manages the daily and strategic finances and contract designs of our company. She is well-known by our vendors and clients as she has handled duties for us on a part-time basis since 1985 and has attended various conferences and trade shows with Jeff. The 1978 graduate of the School of Business and Finance at Anderson University also studied at American University in Washington, DC and worked as a researcher in the Congressional Budget Office.

Passionate about the living conditions of animals and the environment, she typically is accompanied to work by one of the Bowen family pooches.

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Jeff Bowen



Jeff was an honors biochemistry major at the University of Illinois, and

since 1985 has pioneered the concepts of time-code synchronized and interactive audio and video for sound recording, digital video, sports, planetarium, mu-

seum, and educational applications. He speaks often to student groups and conducts sound design workshops at numerous planetarium, video production, and museum conferences. August 1994 marked the release of Jeff's 400 page CD-ROM interactive book "Becoming a Computer Musician". This book is published by Macmillan Computer Publishing in English and Spanish. Jeff is also a former President of the International Television Association, Indianapolis Chapter.

Jeff served as producer of the first three panoramic video multimedia shows to be designed for the new Spitz Electric Sky Immersive Visualization Theatre at the new Northern Lights Centre at Watson Lake in the Canadian Yukon.

Bowen Technovation awards include: Emmy Award; Fellow, International Planetarium Society; Fellow, Great Lakes Planetarium Association; Silver Screen (International Video and Film Festival); New York Film Festival Bronze Apple; ITVA Meritorious Service Award.

You probably are familiar with his work as a composer as he has produced or composed soundtracks for over 300 planetarium, film, and video productions, including many nationally and internationally acclaimed works. Jeff is a BSS Soundweb Designer/Programmer and has designed and programmed many Soundweb surround-sound systems for planetaria and exhibits.

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Bowen Technovation

Moving Sale

As read on page 2 of this newsletter, Bowen Technovation is **moving to a new, larger facility**. There are many items sitting on our shelves that we would rather not have to pack and move. We'd rather have somebody get some good use out of these products. We have demo units, trade-ins, and discontinued items. You can read more about our equipment specials at www.bowentechnovation.com/planetarium/planetariumspecials.htm.

Some of these items include:

- Lighting packages
- Subwoofers and speaker systems
- Audio equipment (mics, mixers, etc.)
- Video decks
- DVD players and much more....

In This Issue

Bowen Introduces "New" AstroNotes All-Dome Shows by Brien Barr.....	page 1
Project Profile: Griffith Planetarium by Mike Grznar.....	page 1
Bowen Upgrades to a New Enlarged Facility by Jeff Norris and Diana Bowen	page 2
Bowen Introduces the New AstroFX DMP Digital Video & Media Family by Brien Barr.....	page 3
The Technovators Develop a New Advanced LED Technology by Dan Ritchie.....	page 4
Tech Support Call Prep 101 by Michael Phillips.....	page 4
EAW to Manufacture Custom Bowen Speaker by Tony Whitlock.....	page 5
Who Ya Gonna Call? by Jeff Bowen.....	page 5
Bowen Technovation Moving Sale	page 8