



LORAIN, OHIO

# GUIDESCOPE

<http://junior.apk.net/~arstar50/BlackRiver.index.html>

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Welcome to the first electronic edition of the [GUIDESCOPE](#)

## October 2004

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## B.R.A.S. Officers

**President: Mike Harkey**

**Vice President: Dave Lengyel**

**Treasurer: John Reising**

**Secretary: Dave Gulyas**

## Meeting Dates

° Regular Monthly Meeting at the Carlisle Visitor's Center Oct 6, 2004

7:00 PM

° Monthly Board Meeting at the Blue Sky Restaurant Oct 14, 2004 7:00

PM

° Planning Committee at Lorenzo's Oct 16, 2004 Noon

## Observing Dates

° Nielsen Observatory "Fall sky beauties " Oct 15, 2004 9:00 - 11:00 PM

° Nielsen Observatory "Total lunar eclipse" Oct 27, 2004 9:00 - 11:00 PM

° Nielsen Observatory Solar Observing Oct 31, 2004 1:00 - 4:00 PM

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## Location Sites

Nielsen Observatory is located at the Lorain Metro Parks Equestrian Center on Diagonal Road in Carlisle Township

**Carlisle Visitor's Center is located at 12882 Diagonal Road in Carlisle Township**

**Blue Sky Restaurant is located on Rt 58 just north of Rt 2 on the east side of the street in Amherst**

**Lorenzo's Restaurant is located in Oberlin in the SW quadrant of Rt 58 and College St behind the storefronts. There is a large parking lot, and access can be gained from both Rt 58 and College St**

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## **Sale & Trade**

**Apogee 15 mm 70 deg wide field eyepiece in near new condition. Price: \$40.00 John Reising Tel: 440-327-3301**

**Orion 4.5 XT Dobsonian in excellent condition. F8 , includes 26mm and 9mm eyepieces and 6x25 erect image finder. Price: reduced ! now \$150.00**

**Barb Hubal Tel: 440-230-1836 -or- 330-794-6382**

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## **Whats Happenin**

### **Club dues are due in October**

**Club elections for board members will also occur at the October meeting. Terms that are up this year : Jim Cunningham, Dave Lengyel, Dave Metz, Mike Plas, and a replacement for Tim Longwell. The following people have chosen to run: [Jim Cunningham](#), [Dave Lengyel](#), [Tom Janus](#), [Tim Kreja](#), [Mike Plas](#)**

**The OTAA wingding at the Birmingham Methodist Church Hall was a huge success. Thanks to everyone who attended. A special congratulations to Liz Scott who won the Hardin 6" reflector.**

**The attendance was up from a year ago and the skies provided everyone with the opportunity to do some good viewing. Now if we can only find a way to keep the dew off.**

**An entertaining musical program was provided by Dave Lengyel, Liz Scott and Kathryn French who , once again, proved that astronomers can sing ! Below are a few pictures of the event**



Setting Up



Looking for deals



day

The best part of the



Ready for action

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## Articles

### **NASA Space Place Column**

#### **Hunting Gravitational Waves: Space Technology 7**

Among the mind-blowing implications of Einstein's general theory of relativity, direct verification is still missing for at least one: gravitational waves. When massive objects like black holes move, they ought to create distortions in space-time, and these distortions should spread and propagate as waves--waves in the fabric of space-time itself.

If these waves do exist, they would offer astronomers a penetrating view of events such as the birth of the Universe and the spiraling collisions of giant

black holes. The trick is building a gravitational wave detector, and that's not easy.

Ironically, the gravitational waves spawned by these exceedingly violent events are vanishingly feeble. Gravitational waves exert a varying tug on objects, but this tug is so weak that detecting it requires a device of extraordinary sensitivity and a way to shield that device from all other disturbances.

Enter Space Technology 7 (ST-7). This mission, a partnership between NASA's New Millennium Program and the European Space Agency (ESA), will place a satellite into a special orbit around the Sun where the pull of the Earth's and Sun's gravities balance. But even the minute outside forces that remain -- such as pressure from sunlight -- could interfere with a search for gravitational waves.

To make the satellite virtually disturbance-free, ST-7 will test an experimental technology that counteracts outside forces. This system, called the Disturbance Reduction System (DRS), is so exquisitely sensitive that it can maintain the satellite's path within about a nanometer (millionth of a millimeter) of an undisturbed elliptical orbit.

DRS works by letting two small (4 cm) cubes float freely in the belly of the satellite. The satellite itself shields the cubes from outside forces, so the cubes will naturally follow an undisturbed orbit. The satellite can then adjust its own flight path to match that of the cubes using high-precision ion thrusters. Making the masses cube-shaped lets DRS sense deviations in all 6 directions (3 linear, 3 angular).

ST-7 is scheduled to fly in 2008, but it's a test mission; it won't search for gravitational waves. That final goal will be achieved by the NASA/ESA LISA mission (Laser Interferometer Space Antenna), which is expected to launch in 2011. LISA will use the DRS technology tested by ST-7 to create the ultra-stable satellite platforms it needs to successfully detect gravitational waves.

If ST-7 and LISA succeed, they'll confirm Einstein (again) and delight astronomers with a new tool for exploring the Universe.

Read more about ST-7 at <http://nmp.jpl.nasa.gov/st7> . For kids in a classroom setting, check out the "Dampen that Drift!" article at [http://spaceplace.nasa.gov/en/educators/teachers\\_page2.shtml](http://spaceplace.nasa.gov/en/educators/teachers_page2.shtml) .

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

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Editor's Note: This is the first electronic version of the Guidescope . I would appreciate any feedback on this initial effort. Did you have any

problems receiving it ? Were you able to see the pictures that were inserted ? And by the way, feel free to send me interesting links or stories that you discover on the web, or interesting things that have happened to you in your journey through the stars. This is your newsletter, and I would like to include as many of you in the forthcoming issues as I can. Thanks ,  
Jim Lengyel email: [homegrown@eriecoast.com](mailto:homegrown@eriecoast.com)  
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