

Celebrating Arbor Day

Beautification group planting trees tomorrow

By **KAYLEIGH SOMMER**
Staff Writer

SAN BENITO – Keep San Benito Beautiful has a heart for Mother Nature. They plan to show just how big that heart is tomorrow when they give 20 trees back to the Earth in celebration of Arbor Day.

The event also is being held to encourage San Benito residents to plant a tree in February.

The event is jointly sponsored by the Parks & Recreation Department and Keep San Benito Beautiful, a relatively new committee dedicated to enhancing the City's appearance.

KSBB Chairman Lynne Pare said she expects more than 100 volunteers Saturday-double the number from last year.

At the tree planting site, volunteers will plant 18 Oak Trees and two Sabal Palm Trees

Volunteers can still sign up now and on the day of the event.

After planting is over, Pare said every volunteer will receive a small package of melon seeds, a "thank you" from KSBB and the city.

"We invite everyone during the month of February to plant a tree as a means of beautifying our community," said Parks & Recreation Director Art Garza. "It's a perfect way to commemorate a loved one, or just to improve the looks of your own yard."

Through education and awareness KSBB aims to get the word out on the efforts of their organization.

Master gardeners will

IF YOU GO

WHAT: Tree Planting
WHEN: Saturday, starting at 8:30 a.m.
WHERE: Heavin Park near the Walking Trail
WHY: Celebrate Arbor Day
Those planning to attend are asked to meet on the South side of the Amphitheater.



be there to hand out educational reading material on everything you need to know about trees.

"Our mission is to educate and engage San Benito community members, residents and visitors to take responsibility for improving our community environment," Pare said.

"A share of our overall plan is to help our community to be responsible for their community and give them even more incentive to assist us and being a part of our programs and events. Tree planting is another great opportunity to bring together our community of San Benito."

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International collaboration proves Einstein correct

UTRGV physicists help observe gravitational waves

By **DANIEL A. FLORES**
Staff Writer

BROWNSVILLE – With a little help from UTRGV, scientists have detected gravitational waves, ripples through the fabric of spacetime, experimentally verifying Albert Einstein's last prediction of general relativity made a century ago.

Months of social media rumors were confirmed during a Thursday news conference, introducing a new way to observe the universe.

University of Texas Rio Grande Valley physicists, some who've worked decades on the project, are among more than 1,000 international collaborators with the Laser Interferometer Gravitational-wave Observatory (LIGO). The Brownsville-based research center has been home to more than 20 authors of a paper published Feb. 11 by the peer-reviewed Physical Review Letters.

"It takes a lot of people to do this," said Gabriela González, spokeswoman for the LIGO scientific collaboration, during the news conference.

Last September, LIGO completed an upgrade to its pair of gravitational-wave detectors located near Livingston, Louisiana, and Hanford, Washington. On Sept. 14, both facilities recorded nearly simultaneous, historic readings.

"What was amazing about this signal is that it was exactly what you'd expect that Einstein's Theory of General Relativity would predict. (There) were two ... massive objects, like black holes, inspiraling and merging together," said David Reitze, executive director of LIGO Laboratory.

LIGO scientists documented the reverberations from the first confirmed binary black holes, two black holes caught in each other's orbit. The pair of about 150-kilometer-wide black holes, each with masses about 30 times the sun, accelerated to half the speed of light 1.3 billion years ago. They spiraled into each other, bending time and space, ultimately colliding to form a larger black hole.

"That's what we saw here," Reitze said. "It's mind-boggling."

General relativity hypothesizes accelerating masses should distort spacetime, sending gravitational waves through the universe at the speed



ABOVE AND LEFT: UTRGV faculty, staff and students listened during a web cast, yesterday about the discovery of black holes colliding and gravitational waves that were recorded Sept. 14, 2014.

BRAD DOHERTY/
STAFF PHOTOGRAPHER

of light.

Each detector contains state-of-the-art laser systems built specifically to observe gravitational wave length fluctuations the diameter of an atom, and are "most precise measuring device(s) ever built," according to Reitze.

"You can't buy low-noise, high-power devices," said Volker Quetschke, UTRGV assistant professor of physics, adding LIGO was defining state-of-the-art in the field.

Lasers stable enough for the dual four-kilometer arms of the interferometer didn't exist when the project began, said Quetschke, who has worked on gravitational-wave sensing hardware since 2000. Development of LIGO technologies were research projects for professors and students, Quetschke said.

"The universities basically take the development role of the project. It is not a turn-key project. You don't go to RadioShack and say, 'I want a \$1,000,000,000 gravitational wave detector. There are a lot of small aspects.'"

UTRGV's Brownsville campus streamed the announcement live, and the event was followed by comments from current and past university officials, as well as physicists

involved in the research.

Havidán Rodríguez, UTRGV provost and vice president of academic affairs, congratulated faculty and student researchers who contributed to the achievement, and Parwinder Grewal, UTRGV College of Sciences dean, emphasized the rarity of the moment.

"Discoveries of this magnitude don't happen every day," Grewal said. "This is an exciting time for humanity, for science (and) scientists."

Grewal highlighted the collaborative nature of the project and the competitive funding record of the physics faculty, calling it comparable to any institution in the nation.

"On average, the dollars that our faculty has received over the last five years is over \$500,000 per faculty member," Grewal said. "This is impressive. I come from Ohio State University. It is the same, so I'd say we're already a research institution," referring to the physics department.

Mario Diaz, director of the Center for Gravitational Wave Astronomy, was in Washington, D.C., for the news conference and echoed Grewal's sentiment, calling the department one of the most com-

petitive in Texas based on research and publication.

The center was made possible by a NASA grant in 2003, and has since brought research in cutting-edge technologies to the Valley, according to Diaz.

"I thought it was important to develop something more applied. That's the way we constructed the optics lab and we opened a line of research into lasers, optics (and) photonics — that is precisely the technology being used at LIGO."

While the discovery will likely contribute to a Nobel Prize, Diaz said the university's investment in this research has already been rewarded.

"In 2006, we hired a new faculty member to come into our center who is a radio astronomer," said Diaz, referring to Fredrick Jenet. "This same faculty member is the same one that led an initiative that attracted SpaceX to the Valley ... because he's going to be developing radio tracking systems for SpaceX spacecraft."

"I think this is a good example of things that are unforeseeable, but are based in the knowledge that you generate and develop."

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Teaming up

Trail planning organization hiring architect for regional concept

By **RICK KELLEY**
Staff Writer

HARLINGEN – The Harlingen-San Benito Metropolitan Planning Organization has been given the go-ahead to hire a consultant to deliver a biking and pedestrian master plan for the region.

J. Joel Garza Jr., the organization's director, told board members Wednesday the staff had narrowed the search to three finalists.

Half Associates, the engineering and architectural firm based in Richardson, topped the list, Garza said.

"Hopefully we can get a contract with them within the next two or three weeks," Garza said, noting his budget for the contract is \$75,000. "They did the Harlingen Trail Master Plan back in 2010. They're currently doing the Cameron County Active Tourism Plan ... and of course they have experience throughout the whole state."

The HSBMPO bicycle and pedestrian plan the consultants arrive at, he said, will inventory what the region has and where it needs to go. Garza said stakeholders, city leaders, and others will have input into how the plan develops.

"After the inventory, they'll go back and do recommendations on how to connect the gaps, look at different modes or destinations, and how we can connect those with areas such as schools and parks."

Garza said the master "bike and ped" plan will explore short-term project of from one to three years, and also have recommendations for longer-term projects, pushing out five to 10 years.

If no contract agreement on the study can be reached with Half, he said the board authorized HSBMPO to then turn to the second firm on its list.

The HSBMPO is a federally-mandated transportation requirement for areas of the country that are deemed to have assumed "metropolitan" status. The organization provides regional transportation planning and serves as liaison with state and federal governments.

The organization consists of the following cities and areas: Harlingen, San Benito, Primera, Santa Rosa, Palm Valley, Rio Hondo, La Feria, Los Indios, Combes and Precincts 3 and 4 of Cameron County.

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