Business

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S. Texas has been rocked by oil busts
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BUSINESS

Billionaire Sid Bass buys into Blue Bell
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METRO

'Mockingbird' sequel has fans flocking to bookstores
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Justin Tallis / Getty Images

San Antonio Express-News

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Iran nuke accord at issue

Secretary of State John Kerry leaves after a group photo was taken in Vienna marking an accord on Iran's nuclear ability. In Washington, GOP lawmakers lined up against the deal while Democrats said they'd consider it. **A8**

Local delegation reacts: San Antonio-area members of Congress split on Iran deal **A8**


Carlos Barria / New York Times

Report on Jade Helm is due daily

Texas State Guard will conduct briefings

By Peggy Fikac
AUSTIN BUREAU

AUSTIN — After a wave of national attention, the Texas State Guard's monitoring of the Jade Helm 15 military exercise will amount to daily briefings here, Gov. Greg Abbott's office said Tuesday.

The military routinely conducts summer exercises, and Jade Helm, though large, isn't unusual. But Abbott more than two months ago drew headlines and even a mocking comic strip when he directed the Guard to monitor the operation, partly to assure Texans that their "civil liberties will not be infringed."

His directive came after plans for the exercise were taken by conspiracy theorists on websites and talk radio as a possible precursor to the federal government imposing martial law, seizing guns and using closed Walmarts for detention camps.

Critics of Abbott's action said he was pandering to an extreme anti-government fringe.

Report continues on A10

New Horizons spacecraft survives Pluto encounter


NASA / Johns Hopkins University Applied Physica Laboratory / Southwest Research Institute

Scientists from Southwest Research Institute designed three of the seven instruments aboard the New Horizons spacecraft that helped it take the flyby past Pluto and send back images such as this one.

Anxious hours of waiting and hoping for best

Eric Berger
HOUSTON CHRONICLE

Like all the other planetary scientists in a Maryland mission control room Tuesday night, Alan Stern watched and waited, helpless, for a ping from the depths of space.

Earlier in the day, he and his colleagues had cheered, holding small U.S. flags aloft in triumph, as the small New Horizons spacecraft sailed past Pluto, the dwarf planet at the solar system's edge.

Or so they hoped.

In a remarkable feat of engineering New Horizons had launched nearly 10 years earli-

Pluto continues on A10


Kin Man Hui / San Antonio Express-News

Guests lean to look at a presentation given by Southwest Research Institute personnel regarding the New Horizons trip.

ExpressNews.com

More coverage: Everything you need to know about the distant dwarf planet.

Interactive: Learn more about New Horizons' 3 billion-mile journey

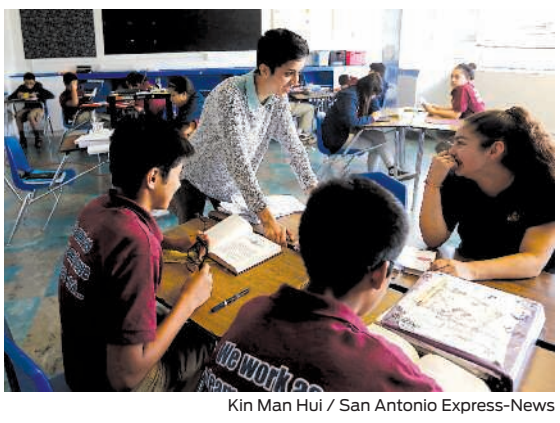
Southwest Research helped give us the view

By Daniel Pérez
STAFF WRITER

Shortly after the New Horizons spacecraft began to transmit spectacular photographs from its close flyby of Pluto on Tuesday, scientists at San Antonio's Southwest Research Institute gathered to celebrate.

After 15 years of work, the scientists explained to a crowd of about 200 at San Antonio College that they designed three of the spacecraft's seven instruments, which helped take New Horizons on a flyby past Pluto and send back images of what until now has been an unknown world.

SwRI continues on A10


Kin Man Hui / San Antonio Express-News

Krystal Lazaro is a seventh-grade reading teacher at KIPP Aspire Academy, which gives students more classroom time.

Money is key in debate over more class time

By Marco Poggio
STAFF WRITER

Until two years ago, Kaylin Hernandez, 12, attended a Catholic school on the South Side that let out at 3 p.m.

But after transferring to KIPP Aspire Academy, she started the school day at 8:20 a.m. and stayed until 4:55 p.m., including a 90-minute period in the afternoon that students can use for tutoring or to work on the school's newspaper.

"I've grown so much. I read (at) like a 10th-grade reading level," said Hernandez, a seventh-grader who enjoys math, reading and singing in the school's choir.

She's one reason why some educators believe that they have found a simple, effective way to enhance student performance: Keep them in

Learning continues on A11

WEATHER

HIGH 95 LOW 75 Partly sunny
Full report, C8

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FROM THE COVER

Photos by Kin Man Hui / San Antonio Express-News

Rain Bradbury, 10, of Universal City looks through a Gallilean telescope while attending Plutopalooza at San Antonio College.

SWRI

From page A1

"It been really exciting to work on this mission for the last 15 years," said Scott Weidner, a Southwest Research engineer. "But now it's all worth it.

"It was great to find out that it phoned home," he said. "And we're excited to receive this data and scientists are going to be digging through it for years. We're going to be discovering secrets of the universe, one planet at a time."

In addition to the instruments' design, Southwest Research's scientists also lead the spacecraft's science team and payload operations, while Johns Hopkins University's Applied Physics Laboratory designed and built New Horizons.

As Southwest Research engineers explained the instruments they designed to their rapt guests, many children in the audience asked questions.

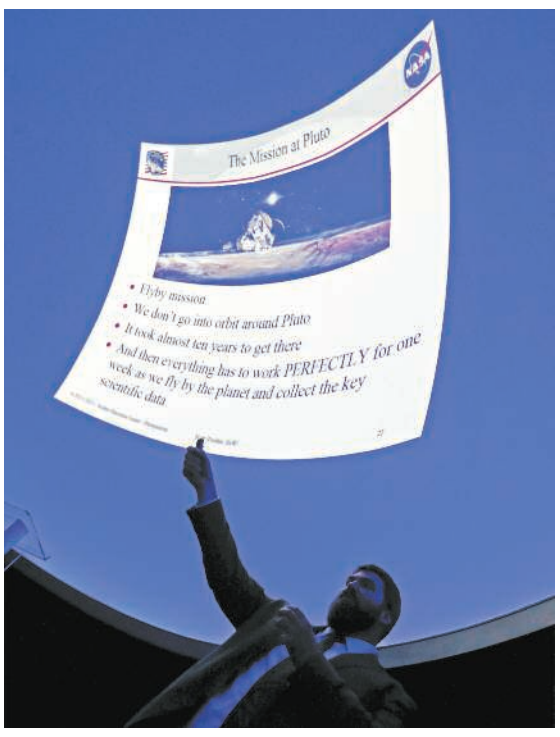
Southwest Research's team of scientists say they seek to understand Pluto's atmosphere and how it interacts with its surroundings to get a clearer picture of the solar system in its infancy.

"Understanding the universe I think is really important thing for all of us," Weidner said. "I think of Columbus going out on voyages of discovery. The important part of what he discovered is something completely different than what he intended. Science is like that too."

Weidner is the chief engineer on the Solar Wind Around Pluto instrument, also known as SWAP, that measures the speed of the solar wind and calculates solar density — protons that are streaming out of the sun. It also measured how much solar wind slows down near Pluto, which allows scientists to understand escape rate of Pluto's atmosphere.

Different versions of the technology used on SWAP have been used on other space missions, including Rosetta, which landed a probe on a comet last Nov. 12, and it will be on the Europa mission gathering data about Jupiter's largest moon.

The Southwest Research team also contributed two onboard instruments known as ALICE and RALPH, named in honor of the characters on the old "Honeymooners" television show.



Southwest Research Institute engineer Scott Weidner, who was responsible for the Solar Wind Around Pluto instrument aboard the New Horizons, begins a presentation on the trip to Pluto and his role in it during the event at SAC's Scobee Learning Center.

"I built a lot of the instruments here. It'll do nothing but enhance our prestige," said Michael Davis, instrument scientist on ALICE.

"We've got a lot of experience. We've done it before. We work hard, and we're persistent."

Weidner and Davis also said that the success of this mission could lead to more scientific exploration being led by San Antonio research firms.

dperez@express-news.net

PLUTO

From page A1

er and traveled some 3 billion miles to fly within 7,700 miles of Pluto's surface.

But to maximize the small spacecraft's ability to take pictures and data during the flyby, all of its instruments, along with its antenna, had been turned toward Pluto for the main event.

So while New Horizons zipped by Pluto at tens of thousands of miles per hour Tuesday morning, scientists wouldn't get any data back until Tuesday night. And only then if they could reconnect with their distant machine.

"It's a low probability," Stern said Tuesday, of a calamity like a large dust particle from Pluto striking the spacecraft. They'd run countless scenarios and estimated the chance of something catastrophic happening to New Horizons during the encounter as about one in 5,000.

Finally, about 8 p.m., the spacecraft sent a brief stream of data, indicating it had survived the flyby.

Just in case it hadn't, before ending communication with New Horizons on Monday night, the science team members had downloaded what they called "fail-safe" data — photos and science information collected from about 500,000 miles out.

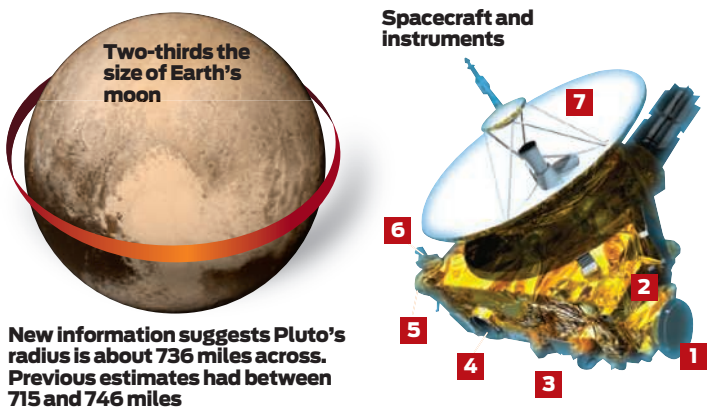
It was hard for the scientists in the flight control room to say goodbye, to put the spacecraft on autopilot and trust New Horizons would make it through the flyby in one piece on its own.

"I am feeling a little nervous, just like you would when you send your child off," said Alice Bowman, the mission operations manager.

The fail-safe data provided some spectacular imagery, but the flyby data promised images 10 times better and information about topography and other surface features that would explain whether the dwarf planet was tectonically active, and covered in nitrogen snow.

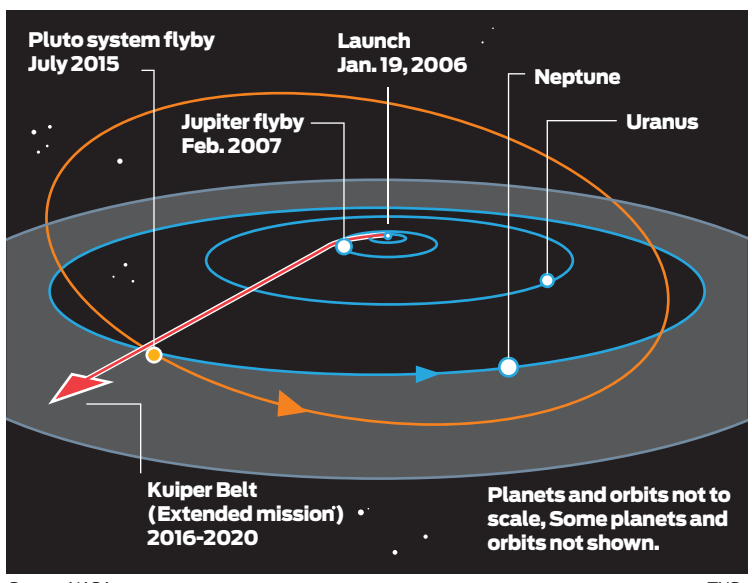
New Horizons' close encounter

After a decadelong, 3-billion-mile journey, New Horizons made its closest approach to Pluto on Tuesday, about 7,750 miles above the surface — about the same distance from New York to Mumbai, India. The dwarf planet is now the most distant object ever visited by humanity.



New information suggests Pluto's radius is about 736 miles across. Previous estimates had between 715 and 746 miles

1. **RALPH:** Visible and infrared imager/spectrometer; provides color, composition and thermal maps.
2. **ALICE:** Ultraviolet imaging spectrometer; analyzes composition and structure of Pluto's atmosphere and looks for atmospheres around Charon and Kuiper Belt Objects.
3. **SDC:** (Student Dust Counter) Built and operated by students; measures the space dust peppering New Horizons during its voyage across the solar system (lower deck).
4. **LORRI:** (Long Range Reconnaissance Imager) Telescopic camera; obtains encounter data at long distances, maps Pluto's far side and provides high resolution geologic data.
5. **SWAP:** (Solar Wind Around Pluto) Solar wind and plasma spectrometer; measures atmospheric "escape rate" and observes Pluto's interaction with solar wind.
6. **PEPSSI:** (Pluto Energetic Particle Spectrometer Science Investigation) Energetic particle spectrometer; measures the composition and density of plasma (ions) escaping from Pluto's atmosphere.
7. **REX:** (Radio Science EXperiment) Measures atmospheric composition and temperature; passive radiometer.



Source: NASA TNS

These are the kinds of questions scientists have dreamed about for the better part of a century, since Clyde Tombaugh discovered Pluto in 1930.

Stern, a planetary scientist, was a graduate student the last time a NASA spacecraft flew to a major world in the solar system, Neptune, in 1989. He recalled wondering at the time when NASA would get together a mission bound for Pluto.

Eventually the mission got approved, and scientists hurried to launch it in 2006 so that it could take advantage of a "gravitational slingshot" around Jupiter. Had it not made this Jovian assist it would have taken another four years to reach the distant Pluto.

A "year" on Pluto lasts 248 years. Scientists believe they're catching the planet as it transitions from summer to fall, as the dwarf planet slowly travels out to its furthest distance from the Sun, nearly 5 billion miles. They are hoping to see its thin nitrogen atmosphere before it precipitates out as snow during "winter."

The spacecraft will have lots of data to disgorge. When it launched a decade ago, data storage systems weren't what they are today, but they still were pretty good. However, the internet connection across 3 billion miles of space, relying on NASA's Deep Space Network, isn't the best.

It actually will take New Horizons 16 months to send all of its data back over a connection slower than the first modems used in the 1980s.

Depending on what secrets New Horizons uncovers, Stern already is thinking about the next step. Perhaps an orbiter — a big challenge considering all the propellant needed to slow down a spacecraft traveling in excess of 30,000 mph — or, more ambitious still, getting even closer to Pluto's surface.

"I have secretly been working on a lander proposal," Stern acknowledged Tuesday.

But first that connection had to be made. They needed that data.

Finally, little spacecraft at the edge of the solar system phoned home. Ping.

To which Stern and his sleep-deprived scientists replied with an uproarious cheer.

REPORT

From page A1

G.B. Trudeau's "Doonesbury" comic strip featured the flap in a chat between Mike Doonesbury and his friend, Bernie. The strip also reached back to former Gov. Rick Perry's suggestion that Texas has the right to secede in the face of an overbearing federal government.

"Whatever happened to Texas secession? Such a good idea," said Mike Doonesbury in the strip, to which Bernie responded, "Do you think the detention tunnels have greeters?"

The exercise covers seven states and starts today outside Bastrop, where troops will conduct exercises on private property.

Training in Texas also will take place at Camp Swift near Bastrop and in 12 counties in all, with an airborne operation at Camp Bullis in mid-August. The whole exercise runs until September.

When the military runs exercises, it uses fictitious scenarios. The state is listed as "hostile" territory on a map outlining where exercises are planned, as is Utah and a small slice of southern California marked "insurgent" territory, feeding the alarm from some quarters.

A Wal-Mart in Bastrop was open late Tuesday afternoon, its parking lot packed with cars.

The governor's office said the monitoring will be done by a group of four to five people.

The city's mayor, Kenneth Kesselus, said people were going about their lives with no evidence of unusual activity.

There were no military vehicles or uniformed personnel on the streets, either from the U.S. Army Special Operations Command or the Texas Army National Guard, which operates out of Camp Swift.

Civilians who want to monitor the exercise, including an Arizona-based group calling itself Counter Jade Helm, were to arrive here today.

"What I expect is exactly what's happening today," said Kesselus, a retired Episcopal minister. "People are driving up and down the street, people are going to work, taking their garbage out, the street crews are fixing the streets, the police are patrolling, people are going to the grocery store, children are out playing, people are planning parties.

"They're doing what they always do every single day of the year."

A short drive along Main Street, Matt Torrez was preparing to give a music lesson at the Lumberyard Music Hall, which contains a Republican Party office. It was closed.

"They're doing what they've been doing for hundreds of years, which is protecting us," Torrez, a guitar, bass, piano and drum teacher, said of the special operations troops. "I support our troops 100 percent."

Abbott has emphasized that he respects the military, describing his directive as aimed at gathering and disseminating information to allay concerns.

Texas has more than 100,000 active-duty troops stationed at numerous military installations, including Joint Base San Antonio-Lackland and Fort Sam Houston, Fort Bliss in El Paso and Fort Hood in Killeen.

The governor's office said the state monitoring will be done by a group of four to five people, including one who will act as a liaison to the Texas Department of Public Safety.

They won't observe operations in the field but will be in and out of a joint operations center at Camp Mabry in Austin, coordinating with a military liaison there.

The State Guard will give an update once a day to Abbott's office that includes a look back at the preceding 24 hours of the exercise and a projection 72 hours ahead, Abbott's office said. The job will be covered by existing resources, Abbott spokesman John Wittman added.

"We do not anticipate any additional costs to the state," he said.

pfikac@express-news.net
Staff Writer Sig Christenson contributed to this report from Bastrop.