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POPULATION GROWTH

Dallas: the new millennial hub

Tax laws, growing tech scene drawing in young professionals

By **DOM DIFURIO**
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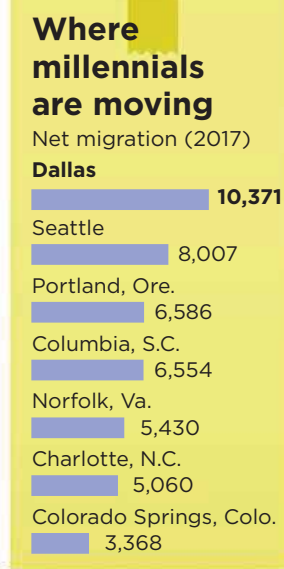
Dallas grew its millennial population more than any other city in the U.S., a new analysis of Census Bureau data shows.

Personal finance website

SmartAsset analyzed migration rates and found that the net population of millennials in Dallas grew by 10,371 in 2017, the most recent data available. It defined millennials as those between the ages of 20 and 34.

SmartAsset examined 173 cities. Other popular spots for millennials on the move were Seattle, Portland,

See **MILLENNIAL** Page 7A



SOURCE: SmartAsset Staff Graphic

DALLAS COUNTY | POLICE BRUTALITY COMPLAINT

DA won't charge DeSoto officers

Creuzot's office cites lack of evidence of a criminal offense

By **MILES MOFFEIT**
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Civil rights leaders have waited seven months for Dallas County District Attorney

John Creuzot to publicly address the fate of six DeSoto police officers accused of brutalizing a mother and her family in response to her 911 call in August.

The violence, captured on video, drew widespread condemnation and raised a raft of questions.

Would the officers be

charged for drawing weapons on the family and slamming the mother to the street? For using a Taser on her son after he had complied with orders to lie on the ground? For arresting that son and his brother, though they did nothing illegal?

See **CIVIL** Page 7A

MOON LANDING ANNIVERSARY

Remembering a 'giant leap for mankind'



Alex Brandon/The Associated Press

President Donald Trump met with astronauts Michael Collins (left) and Buzz Aldrin (right) and members of the late astronaut Neil Armstrong's family on Friday to commemorate the 50th anniversary of the Apollo 11 moon mission. Aldrin and Armstrong, who died in 2012, became the first men to land on the moon 50 years ago Saturday as Collins orbited overhead in their command module. **(Story, 3A)**

MIDDLE EAST

Iran adds to tension by seizing U.K. ship

Second vessel also briefly detained in Strait of Hormuz

By **GREGORY KATZ**
The Associated Press

LONDON — Iran seized a British-flagged oil tanker Friday and briefly detained a second vessel in the Strait of Hormuz, intensifying tensions in the strategic waterway, which has become a flashpoint between Tehran and the West.

The seizing of the British tanker marked perhaps the most significant escalation since tensions between Iran and the West began rising in May. At that time, the U.S. announced it was dispatching an aircraft carrier and additional troops to the Middle East, citing unspecified threats posed by Iran.

The ongoing showdown has caused jitters around the globe, with each maneuver bringing fear that any misunderstanding or misstep by either side could lead to war and disrupt the flow of oil from the region.

Details of what took place Friday remained sketchy after Iran reported that it had seized a British oil tanker in the Strait of Hormuz. The strait at the mouth of the Persian Gulf is a shipping channel for one-fifth of all global crude exports.

The tanker Stena Impero was taken to an Iranian port because it was not complying with "international maritime laws and regulations," Iran's Revolutionary Guard declared.

A statement from Stena Bulk, the company that owns the seized tanker, said it was unable to make contact with the ship

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From analog tape to the world

UTD team made sure voices of space missions carried through history

By **EMMA RUBY**
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It took seven years to put a man on the moon. But it would have taken 172 years

to digitize the audio recordings of all of the manned Apollo missions without help from the University of Texas at Dallas.

July 20 marks 50 years since Neil Armstrong became forever famous for being the first man to walk across the moon's surface. Back on Earth, the University of Texas at Dallas is celebrating its role in supporting NASA and America's spa-

cefering efforts.

Teams at UTD created equipment that analyzed the moon's atmosphere so that NASA would know what to expect when astronauts got there, and they also developed gear that allowed three manned Apollo missions and the Gemini 8 mission recordings to be digitized in five years.

"Being able to hear Neil Arm-

strong and Buzz Aldrin speak was a big eye-opening moment," said John Hansen, an associate dean of research at the University of Texas at Dallas. "The Eagle has landed" and "One small step for man," those are big words."

The moon landing has captivated audiences since the day it was

See **UTD** Page 3A

Partly cloudy, hot



Metro, back page

LATE SCORES

For results from last night's games, go to sportsdaydfw.com/scores.

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METRO & BUSINESS

State jobless rate sets new record

Texas' unemployment rate fell to a new historic low of 3.4% in June, when employers added 45,000 jobs. **3B**

Design of new Corvette takes turn

The new 2020 Corvette is radically different from its predecessors — more European in styling. **5B**

Big ranch carries big price

Huge and historic, the Ford Ranch is on the market for \$52.5 million. **4B**

More delay likely for Paxton case

The drawn-out criminal case against Texas Attorney General Ken Paxton was further complicated this week as lawyers on both sides filed motions. **1B**

SPORTSDAY

Spieth gains at British Open

Jordan Spieth of Dallas had a good round at the British Open to put himself into contention, 3 strokes off the lead. **1C**

Ranchview junior thinks big

Golfer Bohyun Park is only a junior at Carrollton Ranchview, but she has her sights set high. **1C**

SOCIAL MEDIA

Trump's attacks reinforce rhetoric

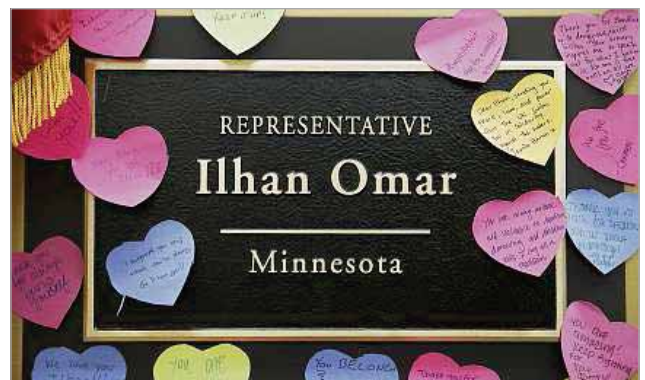
Tweets, harsh comments about 'squad' elevate online racism, conspiracy theories

By **JILL COLVIN**
The Associated Press

WASHINGTON — Long before President Donald Trump turned up the heat on four Democratic congresswomen of color, saying they should "go back" to their home countries, hateful rhetoric and disinformation about the self-described "squad" was lurking online.

Racist, inflammatory and inaccurate content has circulated on far-right blogs, news sites and social media accounts about Rep. Ilhan Omar of Minnesota and her three freshman colleagues since they ran for public office.

With his tweets and harsh comments, Trump has elevated that rhet-



Jacquelyn Martin/The Associated Press

oric, playing into a conspiratorial feedback loop that reared its head repeatedly during his campaign and presidency.

Trump rose to conservative prominence by falsely claiming that former President Barack Obama, the first black president, wasn't born in the United States. Since then, he has promoted claims and memes that origi-

nated in the darkest corners of the internet while fueling new ones of his own.

His latest targets are Omar and Reps. Alexandria Ocasio-Cortez of New York, Ayanna Pressley of Massachusetts and Rashida Tlaib of Michigan.

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UTD has vast space legacy

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broadcast live around the world, and the Apollo 11 mission symbolizes an advancement that has created a ripple effect in the science world that is still felt decades later.

In 2012, Hansen, an electrical engineering professor who does speech research, had one question: How do people work together in teams to solve problems?

Few problems are bigger than getting a man to the moon. Hansen and a team of research students decided to answer his question by processing and analyzing the recordings of Apollo 11.

While the question seemed simple enough, Hansen and his students arrived at the Johnson Space Center in Houston and were met with hundreds of analog tapes that contained the mission recordings.

"We were not expecting that they hadn't digitalized any of it," Hansen said.

So, they set out to digitize the tapes themselves. To do so, the space center pointed the team to a machine called the soundcriber, but the antiquated technology proved ineffective.

19,000 hours of tape

The team had 19,000 hours of analog tape, which, using NASA's 1960 soundcriber, would have taken 172 years working 24/7. But instead of calling it quits, Hansen and his students rewired and modernized the machine and began the process of digitization.

What NASA's soundcriber would have taken 172 years to accomplish, Hansen's rebuild did in only five. Hansen said that as the rebuilt soundcriber began digitizing the Apollo 11 tapes, the emotional impact of the whole endeavor became apparent.

"It was going to be a preservation effort," Hansen said. "The heroes behind the heroes. The people who worked behind the scenes to make the Apollo missions successful."

Although the 10,000 hours of Apollo 11 recordings seemed daunting enough, the team ad-

ditionally transcribed 7,000 hours of the Apollo 13 mission, and select tapes from the Apollo 1 and Gemini 8 missions. Armstrong was part of the crew of Gemini 8, one in a series of missions that were a precursor to Apollo.

Hansen said the digitization project proved a testament to his belief that "open-ended problems are not something to shy away from."

Looking back

But UT-Dallas' relationship with NASA didn't start with Hansen.

Before UT-Dallas was a university, it was the Southwest Center for Advanced Studies, a research institution funded by the founders of Texas Instruments. In 1962, Francis "Frank" Johnson joined the research center's space and atmospheric sciences department and was asked by NASA to design instruments that could detect the lunar atmosphere in preparation for the first manned moon landing.

Rod Heelis, who joined Johnson's team of engineers and scientists in 1973, said that Johnson's work on detecting the lunar atmosphere proved pivotal when it came to putting men on the moon.

"One of the big questions that we wanted to answer ... was the notion of putting humans and maybe habitats on the moon," Heelis said. "Is there an atmosphere on the moon? And what does it look like, what does it consist of?"

Thanks to the "fundamental guidance" offered by Johnson, the research center's instruments sent into space revealed the "tenuous" nature of the lunar atmosphere to NASA scientists well before men went to the moon in 1969.

Less than two months after Apollo 11, the Southwest Center for Advanced Studies evolved into UT-Dallas. Johnson became president of the center during the period in which it attained university status.

He and his team of scientists continued to participate in NASA endeavors, sending equipment into space on the Apollo 12 through 17 missions,



Research for the Apollo 11

mission took place in the Founders Building on the University of Texas at Dallas' Richardson campus. The building has seen updates since that time.

An instrument that

detected the lunar atmosphere during the Apollo 17 mission is on display in the physics building on the University of Texas at Dallas campus.



Photos by Ashley Landis/Staff Photographer

as well as the Pioneer and Phoenix missions.

Heelis, who is the director of the William B. Hanson Center for Space Sciences, said none of the men and women working alongside NASA in the 1960s and '70s could have imagined how rapidly space exploration and its associated technology would advance.

"I think it's really gratifying to be involved in an activity that has come such a long way in such a short time," he said.

'Explore Apollo'

Hansen's team didn't stop

after they digitized the audio tapes. They then wrote an algorithm and created software that could help answer the original question about team problem-solving. The software took the digitized audio and began transcribing it, while also identifying who was speaking, in a process known as diarization.

It was then that the full extent of the number of people who contributed to the Apollo 11 mission became clear.

As the diarization of the tapes came to a close, Hansen's team decided to make their work public. They launched a

website called Explore Apollo, which takes listeners through every step of the Apollo 11 mission.

They also created a database that allows anyone to download 100 hours of audio at any given time.

As the publicized tapes gained traction, Hansen began receiving requests from family and friends of mission control members asking for specific audio tapes of their loved ones speaking. Hansen obliged, and began building on his prior idea of highlighting the "heroes behind the heroes."

"Anyone that can identify a

person that they know worked there, we can find all of their appearances in audio and place it on the website," Hansen said.

He said the latest project will give people a "permanent spot where people can listen to that person's contribution" to the mission.

Hansen said his biggest takeaway from the project is his hope that it will encourage people to "think more about new directions."

"You don't have to take steps on the moon to have an impact on society," he said.

Twitter: @emmaeruby

Apollo 11 astronauts reunite on 50th anniversary of moonshot

Aldrin, Collins gather in Oval Office as talk turns to the next frontier: Mars

By **MARCIA DUNN**
The Associated Press

CAPE CANAVERAL, Fla. — Apollo 11 astronauts Buzz Aldrin and Michael Collins reunited Friday on the eve of the 50th anniversary of humanity's first moon landing.

They gathered in the Oval Office with President Donald Trump, who got a rundown on his administration's plans to get astronauts back on the moon in the 2030s.

"We're bringing the glamour back" to the space program, Trump said.

Both sons of the late Neil Armstrong, the first man to step onto the moon, on July 20, 1969, also attended, as well as first lady Melania Trump, Vice President Mike Pence and NASA Administrator Jim Bridenstine.

The moon versus Mars debate as astronauts' next destination arose again Friday.

The president asked if astronauts could get to Mars without first going back to the moon.

Collins, 88, who circled the moon in the command module while Armstrong and Aldrin descended in the Eagle, told the president that he supports going directly to Mars and bypassing the moon.

"It seems to me Mars direct, who knows better than these people?"

Trump said.

Bridenstine, though, stressed the importance of the moon as a training ground and noted that because of the planetary alignment, launches to Mars can occur only every 26 months, and even then the trip is seven months each way.

Aldrin, 89, said he's disappointed with the state of human space exploration the past 10 or 15 years. "We were able to achieve so much early," he said.

Aldrin doesn't like NASA's idea for a small space station around the moon, called the Gateway, from which to stage lunar landings and, eventually, Mars trips. He noted that the Apollo 11 command module and attached lunar module went straight into lunar orbit and even separated and re-docked around the moon.

"We have the No. 1 rocket right now in the U.S., and we have the No. 1 spacecraft, and they cannot get into lunar orbit with significant maneuvering capability," Aldrin pointed out.

Aldrin and Armstrong, who died in 2012, landed on the Sea of Tranquility at 4:17 p.m. on July 20, 1969. "Houston, Tranquility Base here. The Eagle has landed," Armstrong radioed.

Armstrong was the first to climb down the ladder, stepping onto the lunar surface at 10:56 p.m. His "That's one small step for man, one giant leap for mankind," is arguably the most famous space line of all time.

The vice president is commemo-

rating Saturday's anniversary at Florida's Kennedy Space Center, visiting the launch pad where Apollo 11 blasted off.

Museums and towns across the country geared up for their own golden anniversary celebrations, including Wapakoneta, Ohio, Armstrong's hometown, which was serving up "cinnamon pancakes" and "buckeye on the moon sundaes." The U.S. Postal Service, meanwhile, issued its "1969: First Moon Landing" Forever stamps Friday at Kennedy Space Center.

NASA televised a two-hour show Friday afternoon remembering Apollo 11 but also looking forward to its future moon plans. At the end of the program, Bridenstine revealed the new logo for the moon program, called Artemis after the twin sister of Greek mythology's Apollo.

Besides Wapakoneta and Kennedy, the program went live to Johnson Space Center in Houston, home to Mission Control; the U.S. Space and Rocket Center, next door to Marshall Space Flight Center in Huntsville, Ala.; and the National Air and Space Museum in Washington.

In Houston, Apollo 7 astronaut Walter Cunningham said the moon landings will be remembered hundreds of years from now and Armstrong, in particular, will go down in history.

"Here we are 50 years later, and I never in my life could have projected this amount of interest and association with what we were doing back then," Cunningham said.

AT A GLANCE North Texas Moon Day events

America won the space race on July 20, 1969, when Apollo astronauts Neil Armstrong and Buzz Aldrin became the first men to walk on the moon. Here are six North Texas Moon Day events to mark the 50th anniversary on Saturday.

MOON DAY

Engineer your own stomp rocket or moon landing, snap a photo with a costumed spaceman or giant inflatable moon, and see robots created by the First Lego League and First Tech Challenge teams. There will also be a story time, demos and more lunar activities throughout the museum. Saturday, 10 a.m. to 2 p.m., Perot Museum of Nature and Science, 2201 N. Field St., Dallas. Free with museum admission. perotmuseum.org.

MOON DAY 2019

Get immersed in the science behind space flight at this annual STEM-focused expo featuring more than three dozen exhibitors. Get close to a moon rock, the only lunar sample on display in North Texas, and other space flight artifacts. See the actual Apollo 7 spacecraft, a Mars rover and the Circle Ten STEM Scouts' mobile laboratory. At 1 p.m., astronaut John Blaha will talk about his experiences aboard Space Station MIR. The first 200 students through the door will receive a complimentary lunar sample bag. Saturday, 10 a.m. to 4 p.m., Frontiers of Flight Museum, 6911 Lemmon Ave., Dallas. Free with museum admission. flightmuseum.com.

FREE MOON LANDING CELEBRATION

The West Irving Library celebrates with free, space-themed activities for all ages from 10 a.m. to 3:30 p.m., including a visit from the Perot Museum's Tech Truck from 1 to 3 p.m. A Star Party in the parking lot kicks off at 8:30 p.m. with the Fort Worth Astronomical Society. Look at the moon and stars through a variety of telescopes, take a space selfie in the photo booth, play games, enjoy pizza, moon pies and more. Saturday, 10 a.m.

to 10 p.m., 4444 W. Rochelle, Irving. cityofirving.org.

FREE SKYWAY

The museum offers docent-guided spotlight tours of Robert Rauschenberg's "Skyway." Originally commissioned for the 1964 World's Fair, the mixed-media piece features iconic images from the 1960s, including floating astronauts and spinning planets. Tours take place at 11:30 a.m. and 1 p.m., and each is limited to 30 guests. Check in at the visitors desk. Saturday, 11:30 a.m. and 1 p.m., Dallas Museum of Art, 1717 N. Harwood, Dallas. Museum admission and tour are free. dma.org.

FREE APOLLO 11: 50TH ANNIVERSARY OF THE FIRST LUNAR LANDING

The celebration kicks off with a short talk by Dr. John Hansen of the University of Texas at Dallas on the digitization of sound recordings from the Apollo 11 and 13 space flights. Families can also take a photo with a life-size cutout of an astronaut and make a commemorative craft. Saturday, 2 to 4 p.m., J. Erik Jonsson Central Library, 1515 Young St., Dallas. dallaslibrary.org.

APOLLO 11

The new documentary features never-before-seen, large-format footage of the moon mission shot by astronauts Neil Armstrong, Buzz Aldrin and Michael Collins. The 93-minute film received a special jury award for editing at the 2019 Sundance Film Festival, which said, "The footage is so clean and vibrant, it is as if you are standing at the base of the rocket." Saturday, 3:40 p.m. at the Texas Theatre, 231 W. Jefferson Blvd., Dallas. \$10.75. thetexas theatre.com.

Norma Cavazos