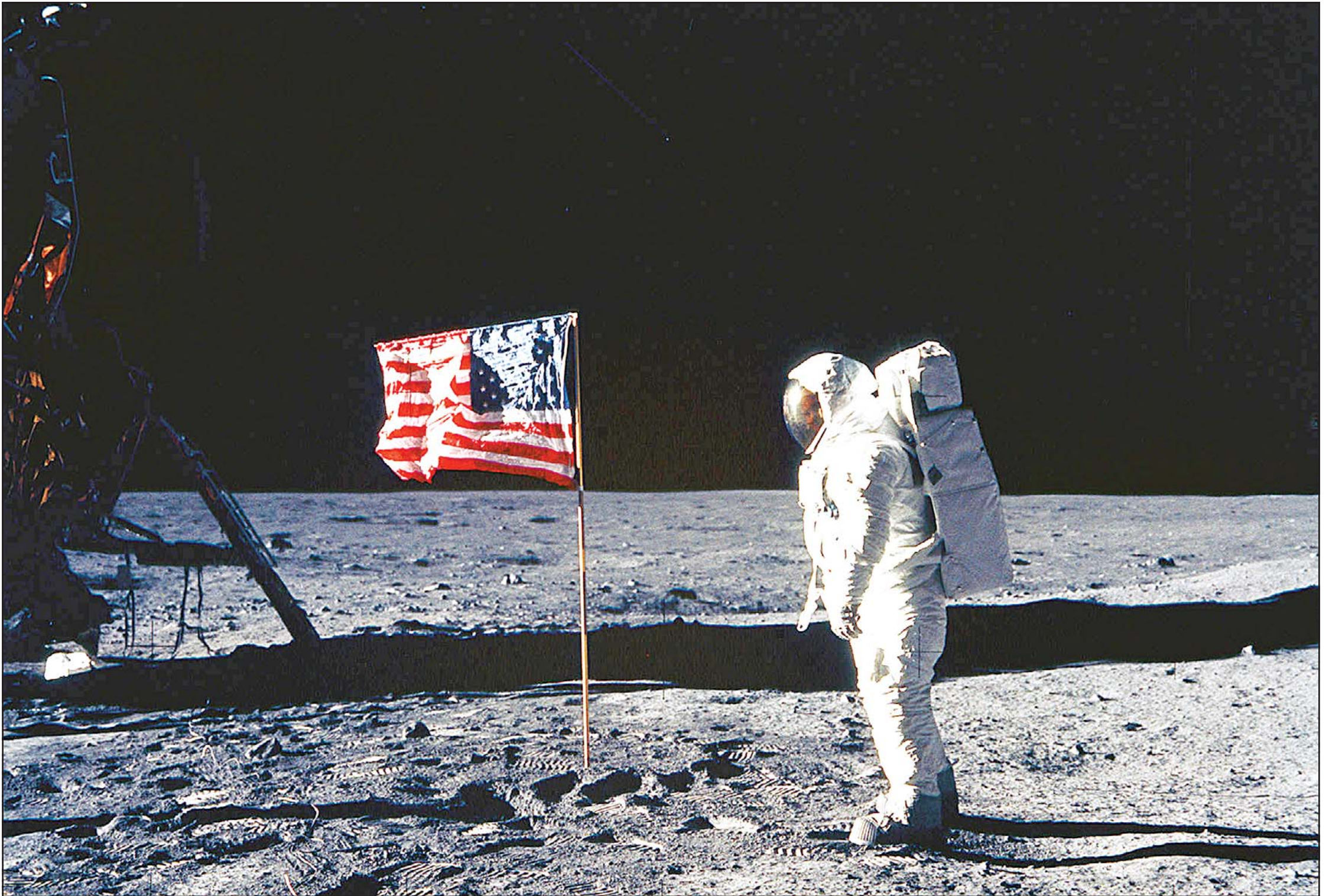


## World News Roundup



In this file photo taken on July 20, 1969, astronaut Edwain E. Aldrin, Jr., lunar module pilot of the first lunar landing mission, poses for a photograph beside the deployed US flag during Apollo 11 Extravehicular Activity (EVA) on the lunar surface area called the Sea of Tranquility. The Lunar Module (LM) is on the left, and the footprints of the astronauts are clearly visible in the soil of the Moon. Astronaut Neil A. Armstrong, commander, took this picture with a 70mm Hasselblad lunar surface camera. NASA is celebrating its 60th anniversary. The National Aeronautics and Space Act, creating NASA, was signed into law by US President Dwight D. Eisenhower on July 29, 1958. (AFP)

## NASA

## Northrop CEO grilled

## Price tag of delayed telescope skyrockets

WASHINGTON, July 29, (RTRS): Northrop Grumman Corp CEO **Wes Bush** faced tough questions from US lawmakers about the delays and growing price tag for NASA's James Webb Space Telescope and rebuffed the idea that the company, rather than taxpayers, should pay an \$800 million cost overrun.

Northrop is the primary contractor for the project. NASA's long-planned successor to the orbiting Hubble Space Telescope, but the Webb telescope's overall mission price tag has skyrocketed over the years and is now pegged at \$9.66 billion.

Bush acknowledged in testimony in Washington to the House of Representatives science committee that Northrop "human errors" contributed to the telescope's rising costs and delays. But Bush said Northrop is "fully committed" to the project's success.

The telescope's development costs of \$8.8 billion have exceeded an \$8 billion funding cap set by Congress. NASA is asking lawmakers to approve funding to cover the \$800 million difference.

Asked by the committee's Republican chairman, Lamar Smith, whether he would agree to pay the extra \$800 million instead of the taxpayers, Bush said "that would be the wrong approach" and would "significantly impede and impair the relationship between NASA and Northrop Grumman."

## Justified

Having the company pay "would be justified given the poor record and given the poor management," Smith responded.

"I only wish that Northrop Grumman was willing to take responsibility and show a little bit more good faith, both to the taxpayer and for the cost overruns," Smith added.

A June 27 report by an independent review board set up by NASA described "human-induced errors" and other problems that forced a postponement of the planned launch by 29 months from October 2018 to March 2021 — at a cost of an extra \$1 billion. The problems included loose nuts and bolts, the wrong solvent being used to clean propulsion valves and improper test wiring that caused excess voltage to be applied to devices called transducers.

"Having been delayed 14 years, and now costing 19 times the original cost, is just probably the worst example of bad management any of us have ever seen or heard about," Smith told Reuters in an interview.

During the hearing, Republican Representative Dana Rohrabacher noted that other deserving NASA missions may have lost out on funding because of this project's ballooning costs.

"Your group that was handling this, and your company, failed. They failed us, and they failed the American people. ... The question is it worth all those other projects that we've been unable to fund in this committee because you have failed your job?" Rohrabacher asked Bush.



Bush



Members of the American Airlines grounds crew seek cover their heads as they walk across the tarmac on July 25, at Sky Harbor International Airport in Phoenix. For the third straight day, Phoenix has hit a record high temperature as Sky Harbor reached 115 degrees last Monday and Wednesday afternoon, according to the National Weather Service. (AFP)

## Discovery

**Islands fight fuel poverty:** Solar panels and smart batteries could help cut electricity bills by almost half for people on the Isles of Scilly, a British energy storage provider said as it launched a renewable energy programme on the group of Cornish islands.

The Smart Energy Islands project aims to slash climate-changing emissions, improve the power supply and lower costs for "fuel-poor" residents of five inhabited islands, 45 km (28 miles) off England's southwest coast, energy firm Moixa said.

The Isles of Scilly aim to generate 40 percent of their energy from renewable sources, and make 40 percent of vehicles driven there electric or low-carbon by 2025. A 55-km undersea cable is now the only connection between the Isles of Scilly and the UK's national grid. Last year, islanders had to rely on diesel generators for almost two weeks after the cable was damaged by a fishing boat.

The combined technologies, due to be installed by this autumn, will provide islanders with a reliable electricity supply year-round, and could reduce their bills by as much as 40 percent, said **Chris Wright**, Moixa's chief technology officer. (RTRS)

**Study on sugar-harvest calendar:** Cuba is studying whether to adjust its sugar-harvest calendar in response to damaging changes in the island's climate, an official newspaper reported Saturday.

The Caribbean island, once the world's leading sugar producer, is suffering through a years-long decline in production even as its socialist leaders struggle to modernize a sluggish economy.

Cuban president **Miguel Diaz-Canel** ordered state sugar monopoly Azcuba to undertake the climate study in coordination with the Ministry of Science, Technology and the Environment, and to carry out any necessary remedial measures, the newspaper Granma said.

"The seasons are changing and we have to be able to adapt," Diaz-Canel was quoted as saying.

He said the traditional sugar-growing season, lasting from November to April, might have to be adjusted.

The 2017-18 harvest produced "something more than a million tonnes of sugar,"

## Climate

## All-time temperature records set across the globe

## Climate change worsens heat, fires

CALIFORNIA, July 29, (AP): Heat waves are setting all-time temperature records across the globe, again. Europe suffered its deadliest wildfire in more than a century, and one of nearly 90 large fires in the US West burned dozens of homes and forced the evacuation of at least 37,000 people near Redding, California. Flood-inducing downpours have pounded the US East this week.

It's all part of summer — but it's all being made worse by human-caused climate change, scientists say.

"Weirdness abounds," said Rutgers University climate scientist Jennifer Francis.

Japan hit 106 degrees on Monday last week, its hottest temperature ever. Records fell in parts of Massachusetts, Maine, Wyoming, Colorado, Oregon, New Mexico and Texas. And then there's crazy heat in Europe, where normally chill Norway, Sweden and Finland all saw temperatures they have never seen before on any date, pushing past 90 degrees.

So far this month, at least 118 of these all-time heat records have been set or tied across the globe, according to the National Oceanic and Atmospheric Administration.

The explanations should sound as familiar as the crash of broken records.

"We now have very strong evidence that global warming has already put a thumb on the scales, upping the odds of extremes like severe heat and heavy rainfall," Stanford University climate scientist Noah Diffenbaugh said. "We find that global warming has increased the odds of record-setting hot events over more than 80 percent of the planet, and has increased the odds of record-setting wet events at around half of the planet."

Climate change is making the world warmer because of the build-up of heat-trapping gases from the burning of fossil fuels like coal and oil and other human activities. And experts say the jet stream — which dictates weather in the Northern Hemisphere — is again behaving strangely.

"An unusually sharply kinked jet stream has been stuck in place for weeks now," said Jeff Masters, director of the private Weather Under-

ground. He says that allows the heat to stay in place over three areas where the kinks are: Europe, Japan and the western United States.

The same jet stream pattern caused the 2003 European heat wave, the 2010 Russian heat wave and fires, the 2011 Texas and Oklahoma drought and the 2016 Canadian wildfires, Pennsylvania State University climate scientist Michael Mann said, pointing to past studies by him and others. He said in an email that these extremes are

## 'Urban island' heat tests Phoenix, other big cities

PHOENIX, July 29, (AP): When temperatures soar as they have this week in downtown Phoenix, homeless people ride the air-conditioned light rail to avoid a heat so brutal it killed 155 people in the city and surrounding areas last year. An occasional siren wails as paramedics rush to help people sick from the heat.

Already devilishly hot for being in the Sonoran desert, Arizona's largest city is also an "urban heat island," a phenomenon that pushes up temperatures in areas covered in heat-retaining asphalt and concrete. Phoenix on Wednesday recorded a sweltering 116 degrees (46 Celsius), setting a new high for the date.

Phoenix officials say they are tackling urban warming, monitoring downtown temperatures, planting thousands of trees and capturing rainwater to cool off public spaces.

Elsewhere, Chicago maintains more than 500,000 trees to offset rising temperatures and is a national leader among cities for so-called green roofs covered with vegetation. Los Angeles adopted an ordinance in 2014 to require reflective "cool roofs" for new homes including rentals, while Seattle is working to restore the city's forested parklands.

But climate specialists like Brian Stone, who runs the Georgia Institute of Technology's Urban Climate

Lab, said more is needed.

In urban heat islands, solar radiation and hot air from vehicles and buildings get trapped between high-rises. There aren't enough trees to provide shade and evaporative cooling that can bring down temperatures.

"We are working against a pronounced warming trend in large cities, and so it will require a substantial resurfacing of urban environments simply to slow the rate of warming," Stone said.

He said the heat island effect prevents a city from peeling off the day's furnace-like heat after the sun sets, driving up temperatures over time. His team's research shows Phoenix temperatures rising nearly 1 degree per decade, consistently placing it alongside Dallas and Louisville, Kentucky, as some of the fastest-warming US cities. He said Phoenix is warming at three times the rate of the planet as a whole.

Stone noted the heat island effect is caused by local land use and energy decisions and is separate from global warming, but said the two often work together.

While the heat increases energy consumption and air pollution, authorities in Phoenix, the hottest of the three cities, worry most about health problems like heat stroke or heat exhaustion.

"becoming more common because of human-caused climate change and in particular, the amplified warming in the Arctic."

Climate scientists have long said they can't directly link single weather events, like a heat wave, to human caused climate change without extensive study. In the past decade they have used observations, statistics and computer simulations to calculate if global warming increases the chances of the events.



Wright



Diaz-Canel

moga district led to unearthing of rockets and shells that were stored by Tipu Sultan for use in wars, according to the state's assistant director of archaeology.

The powerful ruler was killed in the fourth Anglo-Mysore war in 1799 after a string of victories in battle against the British East India Company.

He is credited with developing an early, indigenous rocket known as the Mysorean rocket, a prototype of British Congreve rockets used in the Napoleonic wars. (AFP)