

## Words to Know

Look for these tricky terms in bold type throughout the issue.

**bureaucracy** (*n*): a system of management with excessively complicated procedures (p. 6)

**Cold War** (*n*): a power struggle between the U.S. and the Soviet Union from 1947 to 1991 (p. 6)

**conservative** (*n*): a person who tends to favor tradition and stability over social and political reforms (p. 12)

**exodus** (*n*): a mass departure of people (p. 11)

**harrowing** (*adj*): extremely distressing (p. 17)

**infrastructure** (*n*): the structures and public works of a society, such as roads (pp. 10 & 23)

**liberal** (*n*): a person who tends to support social and political reforms (p. 12)

**monk** (*n*): a man who devotes his life to prayer and worship (p. 16)

**monopolize** (*v*): to gain or hold complete control over (p. 19)

**net worth** (*n*): the total value of something after debts and other costs have been deducted (p. 19)

**Pentagon** (*n*): the headquarters of the Department of Defense in Arlington, Virginia (p. 6)

**pilgrimage** (*n*): a journey to a sacred place (p. 19)

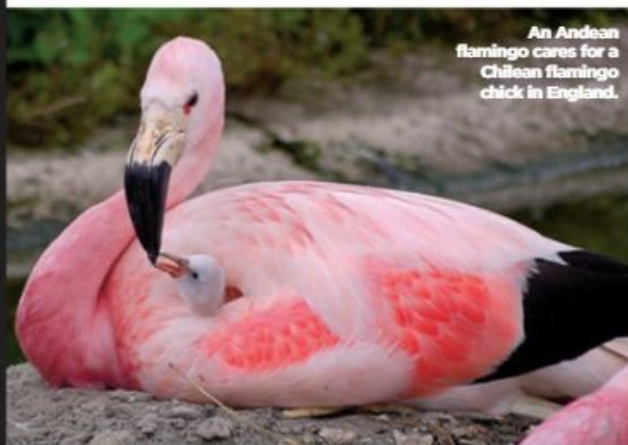
**quarantine** (*v*): to isolate someone to prevent the spread of contagious diseases (p. 17)

**ravage** (*v*): to cause severe and extensive damage (p. 8)

**U.S. territory** (*n*): an area other than a state that is controlled by the U.S. government (p. 9)

IN THE NEWS

▶ Watch a Video



An Andean flamingo cares for a Chilean flamingo chick in England.

## FLAMINGO FOSTER PARENTS

**R**ecord-breaking heat in Europe earlier this summer led to a wildlife surprise. A flock of rare Andean flamingos at a nature reserve in England laid eggs for the first time in 15 years.

The species is native to a hot and humid region in South America that stretches across parts of Argentina, Bolivia, Chile, and Peru. Experts say the unusually high temperatures in Europe may have reminded the birds of their natural tropical habitat—which is the ideal environment for them to breed.

Six of the flamingos laid a total of nine eggs. Unfortunately, none of them hatched. But wildlife conservationists want the captive Andean flamingos to lay more eggs because the pale-pink birds

are at risk of extinction. The International Union for Conservation of Nature estimates that fewer than 40,000 of the exotic birds are left, partly because of habitat loss.

To encourage the birds to continue laying eggs, workers at the reserve hatched a plan of their own. They took a few eggs from Chilean flamingos—which are near relatives of the Andean species—and placed them among the Andean birds. When those eggs hatched, the adult flamingos became adoptive mothers and fathers to the new chicks.

"It's great motivation," Mark Roberts, a manager at the nature reserve, told reporters. "And [it's] enriching for the birds."

**50**  
Number of years  
Andean  
flamingos  
can live

COURTESY: PALDPICHA & WELLS; ANDREW TRUST; ANDREW P. JANNINO

## SPACE FORCE BLASTS OFF?

President Donald Trump wants to create another branch of the U.S. armed forces—and send it into orbit. What would a Space Force do?

BY BRYAN BROWN

**T**HE UNITED STATES armed forces protect the country on the ground, at sea, and in the air. Now President Donald Trump wants to add space to that list of places.

Trump recently instructed the Department of Defense to look into the possibility of a Space Force to promote "American dominance in space." If such a force is approved, it will join the Army, Navy, Marines, Air Force, and Coast Guard as the sixth branch of the U.S. military.

Here is a quick look at what we know about a potential United States Space Force.

▶ Watch a Video

Government/Politics • Space **NATIONAL**

Here, NASA launches satellites into orbit. A Space Force would be tasked with protecting U.S. satellites.

NASA/ARMY GANCON (REUTERS)



## TIMELINE: America's Space Program



**1958**  
**THE BIRTH OF NASA**  
Seeking to win the space race with the Soviet Union, Congress creates NASA, which announces its Mercury program to send Americans into space. Seven Mercury astronauts make six flights from 1961 to 1963.



**1961**  
**SHOOTING FOR THE MOON**  
U.S. President John F. Kennedy sets the goal of putting a man on the moon by the decade's end. Later that year, Alan Shepard is the first American in space. In 1962, John Glenn becomes the first American to orbit Earth.

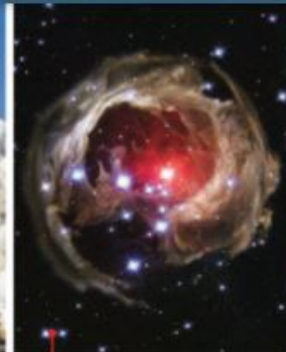


**1969**  
**GIANT LEAP FOR MANKIND**  
During the Apollo 11 mission, Neil Armstrong and Buzz Aldrin (above) become the first humans to step onto the moon. NASA will go on to conduct five more manned missions to the moon. The flights end with Apollo 17 in 1972.

**1983**  
**WOMEN TAKE FLIGHT**  
Sally Ride becomes the first American woman in space, riding aboard the space shuttle *Challenger*. She follows two Soviet women (the first of whom reached space in 1963) and inspires dozens of other U.S. women to follow.



**1986**  
**A TRAGIC LAUNCH**  
Just 73 seconds after liftoff on its 10th mission, the space shuttle *Challenger* explodes, killing all seven of its crew members. The space shuttle program is grounded for years while officials look into what went wrong.



**1990**  
**PHOTOS FROM AFAR**  
The Hubble Space Telescope is released into orbit by the Space Shuttle *Discovery*. It will transmit many images from space, including those of the most distant galaxies ever seen. The Hubble is expected to operate until at least 2020.



**2000**  
**GLOBAL EFFORTS**  
American Bill Shepherd and two Russians become the first crew to spend time on the International Space Station (ISS). A cooperative effort among 15 countries, the ISS took 13 years to build, beginning in 1998.

**2016**  
**A RECORD-SETTING MISSION**  
American Scott Kelly (left) and Russian Mikhail Kornienko (right) end a record 340 consecutive days aboard the ISS. Kelly is part of a study to examine how spending long periods of time in space affects the body.

### Q Why might the U.S. need a Space Force?

**A** In short, say experts, to protect our satellites—spacecraft that have been launched into Earth's orbit to collect and transmit data. "If a country wants to fight the United States, one of the first things it will want to do is disrupt or destroy our satellites," says Todd Harrison of the Center for Strategic and International Studies. "Satellites allow our bombs and missiles to hit targets accurately [as well as] send information to our military forces around the world."

Russia and China, which have the ability to destroy satellites or jam their signals, pose the biggest worries to the Pentagon, Harrison says.

Right now, protecting satellites is mainly the U.S. Air Force's job. Critics of a Space Force say creating a new armed services branch would take crucial funds from the Air Force. They also fear it would add another layer of bureaucracy to the military. But supporters of a Space Force say the Air Force isn't focusing enough on space.

Harrison notes that other functions of space security are now divided among different armed forces. He says, "A Space Force would integrate all of them into one chain of command."

### Q What would a Space Force be like?

**A** You might picture astronauts armed with lightsabers or battling spaceships. Not so, says Harrison: "The people protecting our satellites would be working on the ground." They would be in mission control centers and labs, as drone pilots are now.

At least at first. "If we establish a base on the moon, the Space Force would probably station a few space cadets there," says Howard McCurdy, a professor at American University in Washington, D.C.

Still, it's unlikely that a Space Force would be traveling farther into our solar system anytime soon, Harrison believes: "That's still science fiction at this point."

### Q Does the military have a presence in space now?

**A** "The military has been in space from the beginning of space exploration," says professor Michael Dodge of the University of North Dakota. Historians often set that beginning as October 1957. That is when the Soviet Union, America's Communist rival during the Cold War (1947-1991), launched Sputnik,

the first artificial satellite. The move sparked a contest to dominate the cosmos known as the space race.

In 1958, the U.S. answered with its own satellite. That same year, it created the National Aeronautics and Space Administration (NASA). While NASA's mission is primarily peaceful exploration, the U.S. military has used the space program to conduct defense research and spy on other countries. According to Harrison, the militaries of Russia and China have even larger roles in the space programs of those countries.

### Q Are there any laws that regulate space?

**A** Several international laws and treaties control the use of space. The most important, experts say, is the Outer Space Treaty of 1967, which the U.S., Russia, China, and other nations have agreed to.

The treaty states that all countries are free to access space for peaceful purposes. It doesn't ban all military uses of space, but does set limits on them. "A Space Force would not be able to place weapons of mass destruction in orbit, for instance, or build military fortifications on Mars," says Dodge.

**107**  
nations have formally recognized the Outer Space Treaty

SOURCE: United Nations

### Q How would a Space Force be created?

**A** Only Congress can establish a new branch of the military. The last time that happened was in 1947, when an independent Air Force was split off from the Army.

Until recently, many key military officials had resisted the creation of a separate Space Force. That appears to be changing, however. This past August, the Pentagon gave Congress the outline of a plan that would first

create a U.S. Space "Command"—meaning a fighting force dedicated to outer space. Experts say that such a unit would probably remain within the Air Force for the time being. It would then gradually lead to an independent Space Force.

Harrison believes that's what the Pentagon is "building the foundations" for. Right now, Congress is divided over creating the separate force. "But I think the odds are good it will eventually happen," he says.

Whatever the case, says McCurdy, the U.S. is clearly looking to the future: "Outer space is as natural a realm of national ambition as the air." ♦



#### WRITE ABOUT IT!

How necessary is a Space Force? What might be its benefits—and its downsides?

**803**  
The number of working American satellites now orbiting Earth

SOURCE: Union of Concerned Scientists

MERCURY: WASSILY TERESH; NASA; ALL OTHER PHOTOS