

Launched in 1998, the International Space Station (ISS) has long symbolized global cooperation in space. NASA and its partners plan to retire it around 2030, paving the way for private commercial platforms. The station will be safely deorbited into the Pacific Ocean.



Portrait of the prime crew of the Apollo 11 lunar landing mission. From left to right: Neil A. Armstrong, Michael Collins, and Edwin E. Aldrin Jr. (CNP/NEWSCOM/SIPA)



The Kennedy Space Center Visitor Complex in Florida. (Paul Hennessy / ANADOLU AGENCY / AFP)



Yuri Gagarin before a space flight aboard the Vostok spacecraft. April 12, 1961. (RIA Novosti/SPUTNIK/SIPA)



Apollo 11 Mission Moon Landing. (NASA/Cover Images/SIPA)



(Anna-Karin Nilsson/Expressen/TT NEWS AGENCY/TT News Agency via AFP)

THE GUARDIAN | OLIVER HOLMES

'We're in a new era': the 21st-century space race takes off'

« Nous sommes entrés dans une nouvelle ère : la course à l'espace du XXI^e siècle décolle. »

Les vols spatiaux connaissent actuellement un regain d'intérêt, apportant une énergie nouvelle qui n'avait plus été observée depuis l'époque du programme Apollo. Alors que l'humanité entre dans ce que l'on appelle désormais la « troisième ère spatiale », ce sont les entreprises privées, et non les gouvernements, qui mènent la danse.



SUPPLÉMENT VIDÉO

Le mois dernier, la fusée Starship de SpaceX a décollé et atterri avec succès lors de son 11e lancement, rapprochant ainsi l'entreprise de son objectif de renvoyer des humains sur la Lune, puis à terme sur Mars.

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If the 20th-century space race was about political power, this century's will be about money. But for those who dream of sending humans back to the moon and possibly Mars, it's an exciting time to be alive whether it's presidents or billionaires paying the fare.

2. Space flight is having a renaissance moment, bringing a fresh energy not seen since the days of the Apollo programme and, for the first time, with private companies rather than governments leading the charge. A series of recent milestone missions, not least the increasingly successful test flights of the largest rocket ever made and the first privately built probe to land on the lunar surface, have embedded a growing idea that humans are entering what has been termed the "third space age".

3. "To say we're in a new era, that's absolutely fair," said Greg Sadlier, a space economist and the co-founder of the know.space consultancy. "We're in the era of competition, or the commercial era. The barriers to entry are lower, the costs have fallen, which has opened the doors to a much larger pool of nations," he said. "It's the democratisation of space, if you like."

4. Today, more than 70 countries have space programmes, but for a long time, the US and the Soviet Union were the only big players. Humanity's first space explorer, the Soviet cosmonaut Yuri Gagarin, orbited around the globe in April 1961. A year later, US President John F Kennedy gave his famous "we choose to go to the moon" speech, promising to get an American man on the lunar surface by the end of the decade ahead of a "hostile flag of conquest".

5. "To be sure, all this costs us all a good deal of money," Kennedy acknowledged, but the Cold War motivated him to spend the modern-day

equivalent of hundreds of billions in US taxpayers' money to win the space race. The end of the Cold War in 1989 brought a brief moment of global optimism, leading to the second, more collaborative space age. The International Space Station was assembled over 13 years and, since 2000, people of multiple nationalities have been living in space constantly, working together on experiments in the orbiting laboratory.

6. However, this second era also saw a dip in efforts to get humans farther out into space, symbolised by Nasa's space shuttle programme that never sent people beyond Earth's orbit and was eventually disbanded in 2011, in large part because the US government did not want to keep bankrolling its high costs. Afterwards, Washington had to rely on Moscow's Soyuz rockets to get its astronauts into space.

7. Yet those high costs have now been driven down by private businesses entering the scene, often as government contractors. In the past few years, some of these businesses have started to make money, although not from headline-grabbing reasons such as space tourism but mostly for sending up communication satellites, especially broadband internet. Many estimates suggest the global space industry could generate revenues of more than \$1tn within the next two decades.

8. In an article published in 2023 by the influential strategy and management consultancy McKinsey & Company, global managing partner Bob Sternfels and his colleagues wrote to CEOs: "If space isn't part of your strategy, it needs to be."

9. Elon Musk's SpaceX has been at the forefront of this movement, launching 96 times last year with its reusable rockets. The company's largest

system, called Starship, has been marketed as an interplanetary explorer. Musk says he built the 120-metre rocket so that humans can colonise Mars.

10. Before then, Nasa has contracted SpaceX to land astronauts, including the first woman, on the moon this decade. As a business venture, it could make money well before then by serving as the equivalent of a flying cargo ship. Starship has a payload of up to 150 metric tonnes, five times the load the space shuttle could carry.

11. Scientists are nervous about both the politicisation and the commercialisation of space, especially with talk of future "mining" operations on the pristine, untouched moon. Advocates of space exploration, however, point to advancements made so far. The CT scan, a critical medical device that can identify tumours, traces its origins to pre-Apollo mission research; astronauts on the space station have been using the unique microgravity environment to better understand diseases such as Alzheimer's.

12. For economists like Sadlier, the third space age creates an unprecedented situation – one that could upend the very foundations of the market system. "In economics, we assume that resources are limited; land is limited; natural resources are limited," he said. "With space, it allows us to change that." ●

1. **whether** que ce soit... (ou) / **billionaire** milliardaire / **fare** prix du billet.

2. **to lead, led, led the charge** mener la charge / **milestone** décisif, important / **increasingly** de plus en plus / **large** grand / **rocket** fusée / **probe** sonde / **to land** se poser / **to embed** ancrer / **growing** grandissant.

3. **fair** juste / **founder** fondateur / **competition** concurrence / **pool** ensemble.

4. **speech** discours / **decade** décennie / **ahead of** devant / **flag** drapeau.

5. **a good deal of** beaucoup de / **to acknowledge** reconnaître, admettre /

taxpayer contribuable / **global** international / **experiment** expérience.

6. **dip** creux, ralentissement / **farther out** plus loin / **shuttle** navette / **eventually** finalement / **to disband** démanteler / **to bankroll** financer / **afterwards** par la suite / **to rely on** compter sur.

7. **yet** cependant / **to drive, drove, driven down** réduire / **business** entreprise / **contractor** sous-traitant / **headline** gros titre / **to grab** captiver, attirer; ici, **headline-grabbing** qui fait la une des journaux / **broadband** haut débit / **tn = trillion** mille milliards / **within** en l'espace de.

8. **consultancy** cabinet de conseil / **CEO = Chief Executive Officer**, PDG.

9. **forefront** premier plan.

10. **business venture** projet commercial, entreprise (risquée) / **cargo ship** navire de marchandises / **payload** charge utile / **to carry** transporter.

11. **mining** exploitation minière / **pristine** pur, intact / **advocate** défenseur / **to point to** attirer l'attention sur / **CT scan** scanner / **critical** essentiel, indispensable / **device** appareil / **disease** maladie.

12. **to upend** bouleverser / **to assume** partir du principe que / **to allow** permettre.



SUR LE BOUT DE LA LANGUE

test

test flight (♫ 2) vol d'essai

test bed banc d'essai

test bore essai de forage

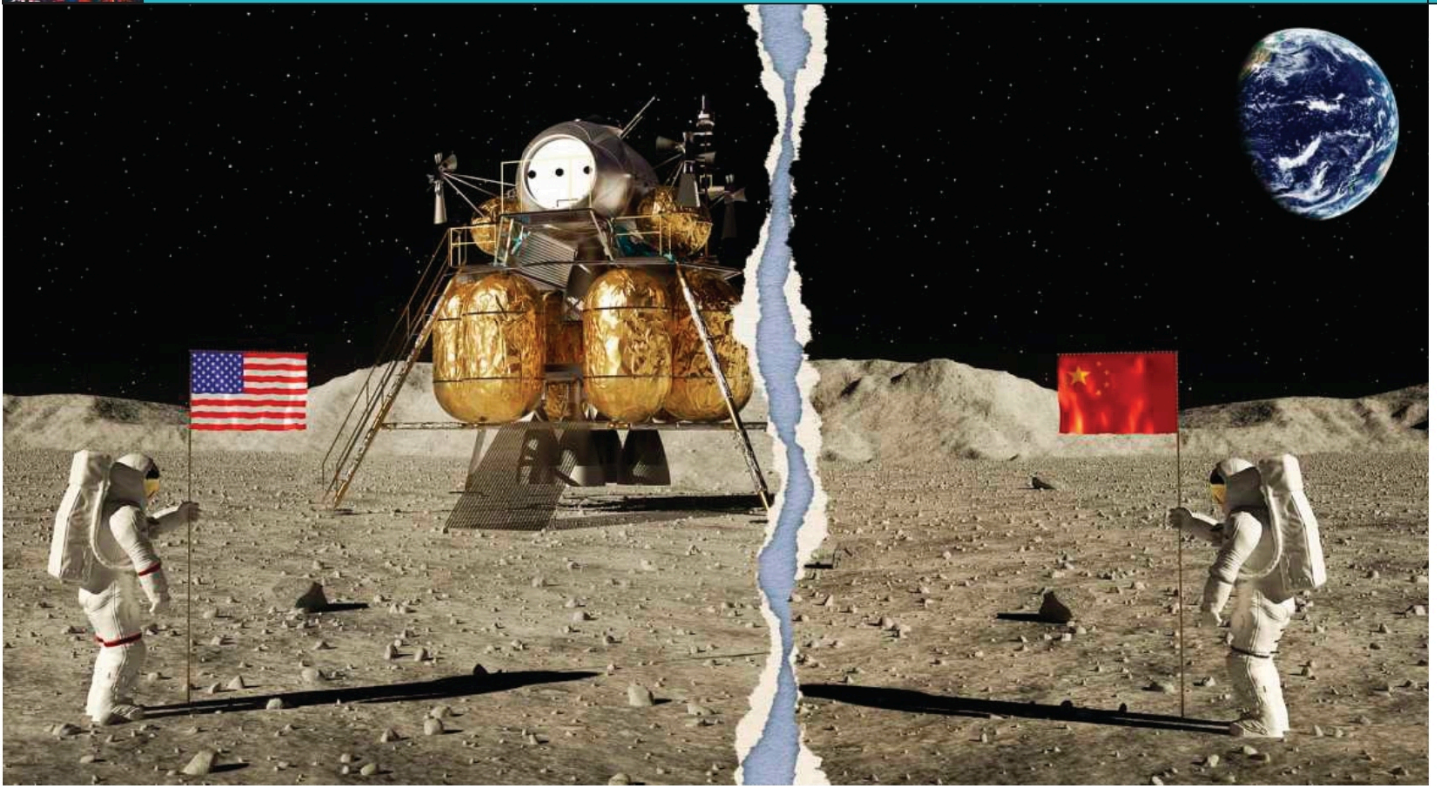
test paper sujet d'examen, papier réactif

test run période d'essai



1957: Sputnik 1 (USSR) — first satellite.
1961: Yuri Gagarin (USSR) — first human in space.
1969: Apollo 11 (USA) — first Moon landing.
1971: Salyut 1 (USSR) — first space station.
1975: Apollo–Soyuz — first US–USSR space cooperation.

1986: Mir (USSR) — long-term space station.
1998: International Space Station (ISS) — global collaboration begins.
2020: SpaceX Crew Dragon — first private crewed spaceflight.



Both the U.S. and China seek to establish a lunar base that would test humanity's ability to live beyond Earth. (Istock)

THE LA TIMES MICHAEL WILNER

In a race back to the moon, U.S. and China see a fast-approaching finish line

Dans cette nouvelle course vers la Lune, les États-Unis et la Chine voient la ligne d'arrivée approcher à grands pas.

Les États-Unis et la Chine se livrent une course acharnée pour retourner sur la Lune et y établir une base permanente. Relancé par Donald Trump avec le programme Artemis, ce projet fait face à de sérieux défis alors que Pékin avance à grand pas vers le pôle Sud lunaire, théâtre d'une nouvelle rivalité stratégique.

Early in his first term, President Trump held a modest ceremony directing NASA to return humans to the moon for the first time in 50 years. Whether to return to the lunar surface at all — or skip it to focus on Mars — was a long-standing

debate governing the division of resources at NASA, where every project is precious, holding extraordinary promise for the knowledge of mankind, yet requiring consistent, high-dollar funding commitments from a capricious Congress.

2. Eight years on, the debate is over. Trump's policy shift has blazed a new American trail in space — and spawned an urgent race with China that is fast approaching the finish line. Both nations are in a sprint toward manned missions to

1. term mandat / **to hold, held, held** ici, organiser / **to direct** ici, demander / **to return** renvoyer / **to skip** éviter; ici, renoncer à / **long-standing** ici, qui existe depuis longtemps /

to hold, held, held ici, avoir / **mankind** humanité / **yet** néanmoins / **consistent** régulier, constant / **high-dollar** important, conséquent / **funding commitment** engagement financier.

2. eight years on huit ans plus tard / **over** fini, terminé, clos / **policy** politique (ligne d'action) / **shift** changement / **to blaze** ici, ouvrir, inaugurer / **trail** chemin, voie / **to spawn** engendrer, donner naissance à / **race** course / **manned** habité /



A ÉCOUTER SUR LE COMPLÉMENT SONORE- SÉQUENCE CONVERSATION

L'infini... ou la dernière frontière ? Le comédien, enseignant et bénévole **Damian Corcoran** et notre hôte Shelly De Vito discutent des ressources terrestres et galactiques, d'Elon Musk et de la mission Apollo 11.
CD audio ou téléchargement MP3 (sur abonnement)

the lunar surface by the end of this decade, with sights on 2029 as a common deadline — marking the end of Trump's presidency and, in China, the 80th anniversary of the People's Republic.

3. It is a far different race from the original, against the Soviet Union, when U.S. astronauts inspired the world with a televised landing in 1969. This time, Washington would not just plant a flag and return its astronauts home. Instead, the Americans plan to stay, establishing a lunar base that would test humanity's ability to live beyond Earth.

4. China has similar plans. And with both countries aiming for the same strategic area of the surface — the south pole of the moon, where peaks of eternal light shine alongside crevices of permanent darkness, believed to store frozen water — the stakes of the race are grounded in national security. Whichever nation establishes a presence there first could lay claim to the region for themselves.

5. Advocates of the U.S. effort, called the Artemis program, increasingly fear that delays at NASA and its private sector partners, coupled with proposed funding cuts to NASA from the Trump administration, could ensure China's victory in a race with broad consequences for U.S. interests. While U.S. intelligence officials have assessed that Beijing is on track to meet its goals, NASA veterans say that accomplishing a manned mission before the Chinese appears increasingly out of reach.

6. "It's a stretch," said G. Scott Hubbard, a leader in human space exploration for the last half

to have, had, had one's sights on avoir en ligne de mire / **deadline** échéance.

3. **landing** atterrissage; ici, alunissage / **flag** drapeau / **to establish** créer, fonder / **ability** capacité, faculté / **beyond** au-delà de, en dehors de / **Earth** (la) Terre.

4. **to aim for** viser / **peak** sommet / **to shine, shone, shone** briller / **crevice** crevasse / **darkness** obscurité / **to store** conserver / **frozen** gelé / **stake** enjeu / **to be grounded** ici, être ancré dans / **to lie, lay, lain claim to** prétendre à, revendiquer.

5. **advocate** défenseur, partisan / **to fear** craindre / **delay** retard, report / **coupled with** ajouté à / **cut** coupe (budgétaire) / **to ensure** garantir, assurer / **broad** de grande ampleur / **intelligence** renseignements (espionnage) / **official** (haut) fonctionnaire, responsable / **to assess** évaluer / **to be on track to** être en bonne voie pour / **to meet, met, met a goal** atteindre un objectif / **out of reach** hors de portée.

6. **to be a stretch** ne pas aller de soi, être difficile à atteindre /



A SpaceX Falcon 9 rocket lifts off from launch pad 40 at Cape Canaveral. (Scott Schilke/Sipa USA)

century who served as NASA's first "Mars czar" and former director of the Ames Research Center in Mountain View, Calif. "Bottom line, yes, it is doable. It'll take an intense effort by the best engineers, and appropriate funding. "It's not inconceivable," he added.

7. The White House said Trump is committed to making "American leadership in space great again," noting his first-term push to return U.S. astronauts to the moon and his efforts to deregulate the U.S. space industry. But officials declined to comment on a timeline for the mission or on China's steady progress.

8. "Being first and beating China to the moon matters because it sets the rules of the road," Sean Duffy, Transportation secretary and acting NASA administrator, told The Times. The success of the Artemis program, Duffy said, is about ensuring the United States leads in space for generations to come. "Those who lead in space lead on Earth," he added.

9. NASA officials, granted anonymity to speak candidly, expressed concern that while leadership on the Artemis program has remained relatively stable, talent on robotics and in other key areas has left the agency at a critical time in

to serve as faire office de / **czar** tsar, grand pontife / **former** ancien(-ne) / **bottom line** point essentiel / **doable** faisable, réalisable.

7. **to be committed to** s'être engagé à / **to note** ici, relever / **push** initiative, campagne / **to deregulate** déréglementer, libérer / **to decline** refuser, s'abstenir de / **timeline** calendrier, échéancier / **steady** constant.

8. **to beat, beat, beaten** battre, dépasser / **to matter** avoir de l'importance / **to set, set, set** définir, déterminer / **rules** règles / **secretary** ici, ministre / **acting** ici, par intérim / **to lead, led, led** dominer, arriver en tête.

9. **to grant** accorder / **candidly** ouvertement, franchement / **concern** crainte, préoccupation /

the race, with potentially less than two years to go before China launches its first robotic mission to the south pole — a scout, of sorts, for a manned landing to follow.

10. Beijing conducted a series of tests over the last several months viewed in Washington as crucial milestones for China on its journey to the moon. Unlike in the United States, China's manned space flight program is housed within its military. China initially set a goal for its manned mission by 2035, but has since moved up its plans, an expression of confidence from Beijing and an unusual break from typical party protocol. Now, China aims not only to have completed that mission, but to begin establishing an International Lunar Research Station on its surface, in conjunction with

to launch lancer, déployer / **scout** éclaireur / **of sorts** en quelque sorte / **to follow** à suivre.

10. **milestone** ici, événement marquant, tournant / **journey** trajectoire, parcours / **to be housed** être logé/ici, intégré / **to move up** avancer (date) / **confidence** confiance, assurance / **break** ici, entorse (fig.) / **to complete** achever, aller jusqu'au bout / **in conjunction with** en collaboration avec /



office

the president's term of office le mandat présidentiel

to come into office prendre ses fonctions

when he was in office lorsqu'il était président

in his first term lors de son premier mandat

a five-year term of office un quinquennat



SUPPLÉMENT VIDÉO

Le 20 juillet 1969, Neil Armstrong et Buzz Aldrin posent le pied sur la lune. Revivez ce moment historique unique à travers des images d'archives. www.vocable.fr/videos-anglais



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>>> Russia, by 2030. They are expected to target the south pole.

11. Since his first term, Trump and his aides have sought to avoid a showdown on the lunar surface, drafting a new set of international rules to govern an otherwise untamed frontier. The Artemis Accords "set out a practical set of principles to guide space exploration," according to the State Department. President Biden embraced and extended the initiative, growing the list of signatories to 56 nations.

12. But China is not one of them, prohibited by Congress during the Obama era from cooperating with the United States in space after attempting to steal U.S. technology on intercontinental ballistic missiles and thermonuclear weapons. Instead, Beijing has recruited a small list of countries to join its lunar base program, including Russia, Venezuela, Pakistan, Egypt, Nicaragua, Belarus and South Africa.

13. Last month, Duffy warned NASA staff that the Trump administration suspects Beijing is planning to deliver a nuclear reactor to power a long-term presence at its lunar base by 2029. He ordered the agency to collect proposals by October on delivering a U.S. reactor to the surface no later than that year.

14. The administration's success relies on a man whose relationship with Trump has crashed spectacularly to Earth. Starship, a super heavy-lift launch vehicle produced by Elon Musk's SpaceX, is the rocket Trump is relying on to accomplish the Artemis mission. Yet repeated setbacks in the

to be expected to devoir (selon les prévisions) / to target cibler, viser.

11. aide conseiller, collaborateur / to seek, sought, sought to chercher à / to avoid éviter / showdown épreuve de force, bras de fer / to draft rédiger / set ensemble / otherwise autrement / untamed indompté, sauvage / to embrace adopter (fig.) / to extend développer.

12. to be prohibited from doing sth se voir interdire (de faire) qqch / to attempt to tenter de / to steal, stole, stolen voler / weapon arme / Belarus Biélorussie.

13. to warn avertir, mettre en garde / to deliver fournir, livrer / to power alimenter en énergie / to order ordonner / to collect recueillir / proposal proposition.

14. to rely on reposer sur / to crash s'effondrer / heavy-lift à charges lourdes / launch vehicle lanceur (aéronautique) / rocket fusée / to rely on ici, compter sur / setback revers, difficulté /



Destination Lune avec Tom Hanks

Tom Hanks n'a jamais caché sa passion pour l'espace. Après Apollo 13 et From the Earth to the Moon, l'acteur américain embarque le public dans une nouvelle aventure : Destination Lune – un voyage immersif avec Tom Hanks. Jusqu'en décembre, l'Atelier des Lumières se transforme en vaisseau spatial. Co-écrit par Hanks et l'écrivain Christopher Riley, ce show spectaculaire retrace l'épopée des missions Apollo jusqu'au programme Artemis. Entre images d'archives restaurées, projections monumentales et bande-son envoûtante, l'expérience nous plonge au cœur de la conquête spatiale. Une invitation à rêver, portée par la voix française de Tom Hanks.

Jusqu'au 4 décembre à L'Atelier des Lumières, 75011 Paris. Plein tarif : 18€

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Starship program have raised alarm at NASA over its fundamental constitution.

15. A concerning series of tests have already delayed the U.S. manned launch, known as Artemis III, toward the end of Trump's term. Whether the Trump administration will commit to the funding and leadership necessary for the mission is an open question. The White House declined to say who within the West Wing is leading the effort. Trump has not named a permanent NASA administrator for Senate confirmation.

16. Success on the moon is meant to provide a testing ground and a launching

to raise alarm susciter l'inquiétude.

15. funding financement / West Wing aile ouest (bâtiment abritant les bureaux du Président à la Maison-Blanche) / to name nommer.

16. to be meant to être destiné à / testing ground terrain d'essai /

pad for more ambitious, challenging manned missions to Mars. But Trump's commitment to those ventures are equally in doubt. "I've been on the inside of it – you waste enormous amounts of time just trying to find workarounds to get funding in to stay on schedule," Hubbard said. "If you really, really want to beat the Chinese, give NASA the funding and some stability – because you're not going to beat them if every day, week or month, there's a different direction, a different budget, a different administrator. And China may still win. It would be another claim that they're the dominant power in the world." ●

launching pad plateforme de lancement, ici base, point de départ / challenging difficile, délicat / venture entreprise (risquée), projet / equally également / to waste gaspiller, perdre / amount quantité / workaround solution de rechange, alternative / on schedule dans les temps / claim affirmation; ici, preuve.

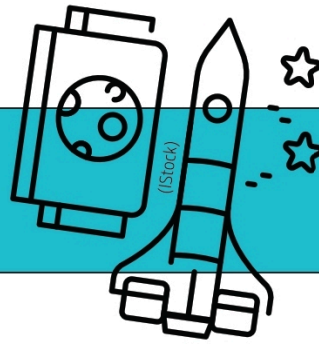
Testez-vous

Avez-vous bien compris l'article ? Cochez la bonne réponse.

1. What happened nearly 80 years ago (1949)?
 - a. First astronauts landed on the moon.
 - b. Proclamation of the People's Republic of China.
 - c. Launch of the first satellite into space.
2. Who, according to this article, is, at present, most likely to reach the south pole of the moon first?
 - a. Russia
 - b. The U.S.
 - c. China
3. What is the name of the current US space program?
 - a. Hubbard
 - b. Artemis
 - c. SpaceX
4. What is Sean Duffy's role?
 - a. Acting NASA administrator
 - b. CEO of SpaceX
 - c. Director of the Ames Research Center

SOLUTIONS : 1. b ; 2. c ; 3. b ; 4. a

Focus



The rise of space tourism

Depuis le premier voyage privé vers la station Mir en 1986, le tourisme spatial est devenu une industrie florissante. Aujourd'hui, plusieurs entreprises proposent des missions payantes aux civils, tandis que le secteur, estimé à plus d'un milliard de dollars en 2025, continue de croître malgré les critiques sur son coût et son impact environnemental.



U.S. multimillionaire Dennis Tito gives a thumbs up shortly after his landing onboard the Russian Soyuz capsule. (AP Photo/Mikhail Metzel)

Pioneers in space tourism

Space tourism has its origins in 1986 with the launch of the Mir space station, which later became the first orbital platform to host nonprofessional astronauts. In 2001, American entrepreneur **Dennis Tito** became the first private individual to pay for a trip to space, marking the official start of the space tourism era. Since then, **63 individuals** have traveled to space as private citizens, with notable increases in 2021 and 2022 as commercial missions became more frequent.

space ici, spatial / **platform** station / **to host** accueillir / **private individual** particulier / **trip** voyage / **citizen** citoyen / **notable** important / **increase** augmentation.

Blue Origin NS-31 – April 14, 2025

Blue Origin made history with its first **all-female crew**, including **Katy Perry**, journalist **Gayle King**, and pilot **Lauren Sánchez (Jeff Bezos' wife)**. The flight lasted about **11 minutes**, reaching **107 km** above Earth's surface. Passengers experienced a few minutes of weightlessness before safely returning to the Texas desert. The mission was praised for promoting diversity and public interest in private space travel.

to make, made, made history entrer dans l'histoire / **crew** équipage / **to reach** atteindre / **Earth** Terre / **to praise** faire l'éloge de, applaudir.

The major players

- Blue Origin** – Founded by Jeff Bezos
Spacecraft: New Shepard
First crewed flight: NS-16 Mission (July 2021)
- Virgin Galactic** – Founded by Richard Branson
Spacecraft: SpaceShipTwo
First commercial flight: Galactic 01 (June 2023)
- Space Adventures** – Founded by Eric C. Anderson and Peter Diamandis
Spacecraft: Soyuz
Notable mission: MZ Mission (December 2021)
- SpaceX** – Founded by Elon Musk
Spacecraft: Crew Dragon
First private mission: Inspiration4 (September 2021)
- Axiom Space** – Founded by Kam Ghaffarian
Spacecraft: Crew Dragon (partnering with SpaceX)
First mission: Axiom-1 (April 2022)

player ici, acteur (fig.) / **crewed flight** vol habité (**crew** équipage).

A growing industry

In 2025, space tourism is estimated to be worth **over \$1 billion**, with forecasts suggesting it could exceed **\$10 billion by 2030**. Companies are investing heavily in reusable spacecraft and training programs to make these journeys safer, cheaper, and more frequent.

to be worth représenter, valoir / **billion** milliard / **forecast** prévision / **to exceed** dépasser / **heavily** fortement / **reusable** réutilisable / **safe** sûr, sans danger.



(© Felix Kunze/Blue Origin/ZUMA Press Wire)

Preparing for the journey

Space tourists must complete short but intensive training programs. They practice handling **g-forces** during takeoff, experience **weightlessness** on parabolic flights, and learn basic spacecraft safety and communication procedures.

journey voyage, périple / **training** entraînement / **to handle** faire face à, mener à bien / **G-force** force gravitationnelle, pesanteur / **takeoff** décollage / **weightlessness** apesanteur / **spacecraft** vaisseau spatial.

Criticisms and challenges

Despite its promise, space tourism faces criticism for its **exclusivity**, **environmental impact**, and **ethical implications**. Ticket prices still reach hundreds of thousands—or even millions—of dollars, putting the experience far out of reach for most people. Environmentalists also warn that rocket launches contribute to pollution high in the atmosphere, while others argue that such vast sums could be better spent solving issues here on Earth.

criticism critique(s) / **challenge** défi, difficulté / **out of reach** hors de portée, inaccessible / **environmentalist** écologiste / **to warn** avertir, prévenir / **rocket launch** lancement de fusée / **to argue** affirmer, soutenir / **issue** problème.