Pew Research Center

FOR RELEASE JUNE 6, 2018

Majority of Americans Believe It Is Essential That the U.S. Remain a Global Leader in Space

Despite the increasing role of private companies in space exploration, most believe NASA's role is still vital for future

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RECOMMENDED CITATION
Pew Research Center, June 2018, "Majority of Americans Believe It is Essential That the U.S. Remain a Global Leader in Space"

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Majority of Americans Believe It Is Essential That the U.S. Remain a Global Leader in Space

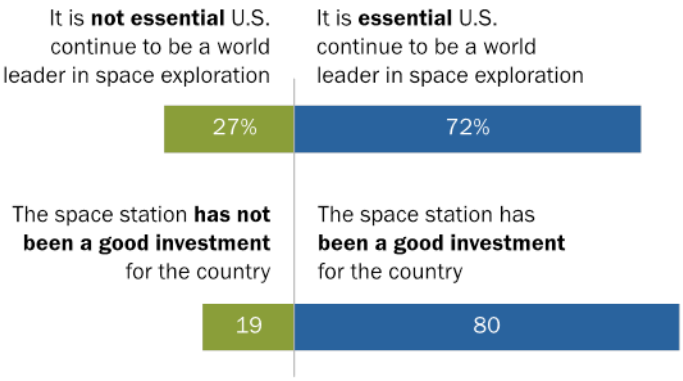
Despite the increasing role of private companies in space exploration, most believe NASA's role is still vital for future

Sixty years after the founding of the National Aeronautics and Space Administration (NASA), most Americans believe the United States should be at the forefront of global leadership in space exploration. Majorities say the International Space Station has been a good investment for the country and that, on balance, NASA is still vital to the future of U.S. space exploration even as private space companies emerge as increasingly important players.

Roughly seven-in-ten Americans (72%) say it is essential for the U.S. to continue to be a world leader in space exploration, and eight-in-ten (80%) say the space station has been a good investment for the country, according to a new Pew Research Center survey conducted March 27-April 9, 2018.

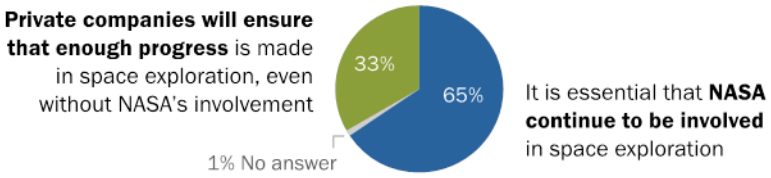
Majority of Americans say it is essential for U.S. to be a leader in space exploration ...

% of U.S. adults who say ...



And that NASA's continued role is also essential

% of U.S. adults who say ...



Note: Respondents who did not give an answer are not shown.
Source: Survey conducted March 27-April 9, 2018.
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These survey results come at a time when NASA finds itself in a much different world from the one that existed when the Apollo astronauts first set foot on the moon nearly half a century ago. The Cold War space race has receded into history, but other countries (including China, Japan and India) have emerged as significant international players in space exploration.

And, as the private sector increasingly ventures into space – through companies such as SpaceX, Blue Origin and Virgin Galactic – 65% of Americans believe NASA should still play a vital role in the exploration of space, while a third (33%) say private companies will ensure enough progress in this area even without NASA's involvement.

Strong public support that the U.S. should continue to be at the vanguard of space exploration is widely shared across gender, educational and political groups. Each generational group, for example, expresses nearly equal levels of strong support for continued U.S. space leadership – from Baby Boomer and older generations (71%) who lived through the "Right Stuff" era that pioneered space exploration to Millennials (70%) who grew up during the space shuttle program. Indeed, on most issues regarding NASA and space exploration, there are no more than modest differences among the generational cohorts. See the Appendix for details.

Similarly, majorities across gender, generation, education and political groups see benefits from government investment in one of NASA's signature projects, the International Space Station (ISS). The findings – support for the U.S. being at the forefront of space exploration and the perception that the space station has been a good investment – are broadly consistent with previous Pew Research Center surveys, which used somewhat different wording and polling methods.

While the ISS has proven to be an enduring legacy of the U.S. space program, it is also emblematic of changing times. NASA currently relies in part on the Dragon spacecraft, built and operated by Elon Musk's SpaceX company, to deliver supplies to the orbiting laboratory. And the Trump administration has been exploring the possibility of turning the space station into a commercially run venture after 2024.

As Americans consider the future of the U.S. space program, most (65%) still see an essential role for NASA, while a third (33%) believe "private companies will ensure that enough progress is made in space exploration, even without NASA's involvement." Democrats and independents who lean Democratic are more likely than Republicans and independents who lean Republican to believe that NASA should continue to play a role in space exploration (70% vs. 59%). Conservative Republicans are closely divided on this issue (53% to 47%), though two-thirds (67%) of moderate or liberal Republicans believe a continued role for NASA in U.S. space exploration is essential.

Majorities say monitoring climate or tracking asteroids should be a top NASA priority; only 13% say the same of putting astronauts on the moon

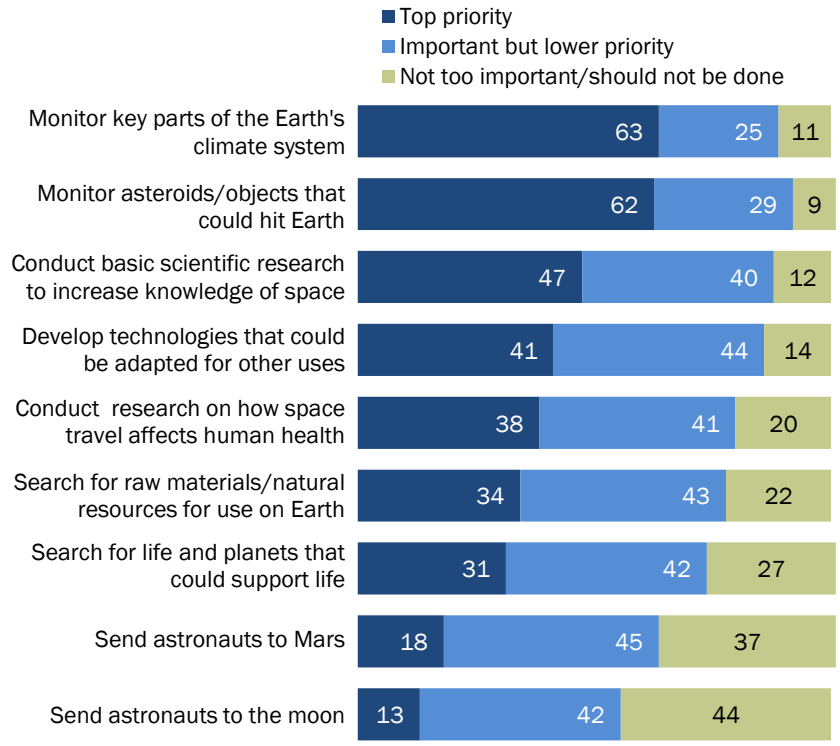
NASA oversees a diverse portfolio of space-related missions, from sending robotic probes to explore distant planets to launching satellites that study Earth's atmosphere and oceans.

When asked to rate the importance of nine of these missions, majorities of Americans say a top priority for NASA should be monitoring key parts of the Earth's climate system (63%) or monitoring asteroids and other objects that could potentially collide with the Earth (62%).

Slightly fewer than half of Americans (47%) believe that conducting basic scientific research to increase knowledge and understanding of space should be a top priority, with 40% saying such research is an important but lower priority. Some 41% say developing technologies that could be adapted for uses other than space exploration should be a top priority, and 44% characterize it as an important but lower priority for NASA. And 38% believe NASA should make it a top priority to conduct scientific research on how space travel affects human health, while 41% see it as an important but lower priority.

More Americans view monitoring climate or asteroids as top NASA priorities than do so for sending astronauts to the moon or Mars

% of U.S. adults who say each of the following should be a top priority for NASA



Note: Respondents who did not give an answer are not shown.
Source: Survey conducted March 27-April 9, 2018.
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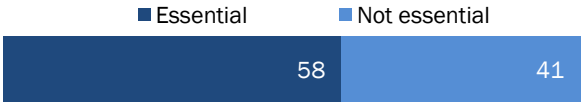
Around one-third of U.S. adults say that searching for raw materials and natural resources that could be used on Earth (34%) or searching for life and planets that could support life (31%) should be top priorities; 22% and 27% of Americans say, respectively, that these missions are not too important or shouldn't be pursued.

Missions for human astronauts to explore Mars and return to the moon are among NASA's most high-profile programs. The Trump administration has expressed strong support for these initiatives, saying that exploring the solar system should be NASA's core mission, beginning with a return of astronauts to the moon.

However, compared with other NASA programs, fewer Americans say such space exploration should be a top priority. Just 18% and 13%, respectively, say that sending astronauts to Mars or back to the moon should be a top priority; 37% and 44%, respectively, express the view that these missions are not too important or that NASA shouldn't undertake these missions.

A majority in U.S. thinks astronauts, not only robots, should explore space

% of U.S. adults who say human astronauts are ____ in the future of the U.S. space program



Note: Introduction to question stated, "The cost of sending human astronauts to space is considerably greater than the cost of using robotics for space exploration." Respondents who did not give an answer are not shown.
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Some space experts argue that the life support systems required to sustain astronauts on a long interplanetary journey would be so expensive that it would be more cost-effective to send robotic probes.[1] With regards to future expeditions into space, a majority of Americans say they would consider it essential that humans, not solely robots, make the trip. Overall, 58% of U.S. adults believe it is essential to include the use of human astronauts in the U.S. space program, while 41% say astronauts are not essential.

Republicans and Democrats tend to agree about the relative priorities of NASA's efforts. For example, about six-in-ten of each party say that monitoring asteroids should be a top priority for NASA (61% of Republicans and 63% of Democrats, including those who lean to each party). But Republicans tend to put monitoring the Earth's climate system as a lower priority for the agency, consistent with long-standing political divides over climate issues. Fewer Republicans and Republican-leaning independents (44%) than Democrats and Democratic leaners (78%) believe that monitoring the Earth's climate system should be a top priority for NASA. Some 38% of

[1] See "Pathways to Exploration: Rationales and Approaches for a U.S. Program of Human Space Exploration," National Research Council, National Academies Press, 2014.

Republicans say that monitoring the Earth's climate system should be an important but lower priority, and 17% say this is not too important or should not be done.

Republicans are also less likely than Democrats to see basic scientific research to further knowledge of space as a top priority. Some 38% of Republicans and those who lean to the GOP consider this a top priority for NASA, while 46% call it an important but lower priority. About half (53%) of Democrats and leaners consider basic scientific research a top priority for the agency.

The new survey finds men more likely than women to consider several of these missions a top priority for NASA, including conducting basic scientific research (54% of men vs. 40% of women say this should be a top priority). While a minority considers putting astronauts in space a top priority for NASA, more men (25%) than women (11%) consider human exploration of Mars a top priority.

In addition, while about half or more of men and women believe human astronauts are essential for the U.S. space program, more men (63%) than women (54%) hold this view. This finding is in keeping with a 2014 Pew Research Center survey, which used somewhat different question wording and polling methods. (Also see Appendix for views on these issues by gender.)

Men also tend to express more interest in space and astronomy news, according to a 2017 Pew Research Center survey as well as surveys conducted for this year's Science and Engineering Indicators report.

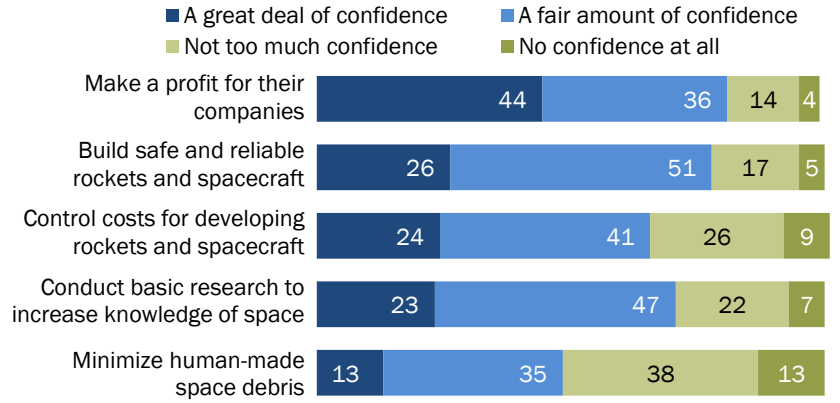
There are no more than modest differences by education level in agency priorities. One exception is that those with at least a postgraduate degree are more likely than those with high school or less education to consider basic scientific research a top priority for NASA (63% vs. 38%). See Appendix for details.

Most Americans express confidence that private space companies will be profitable, but are skeptical that those companies will minimize hazardous space debris

Private companies such as SpaceX, Blue Origin and Virgin Galactic continue to develop space exploration capabilities that were once the sole purview of government agencies such as NASA. Some 44% of Americans have a great deal of confidence these companies will make a profit in their space-related ventures, with 36% saying they are fairly confident that space companies will be profitable.

Many are confident private space companies will be profitable but skeptical they will keep space clean

% of U.S. adults who say they have _____ that private space companies will ...



Note: Respondents who did not give an answer are not shown.
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Although most Americans believe that NASA still has an essential role to play in the exploration of space, they also express confidence that private companies can make meaningful contributions in such areas as developing safe spacecraft and conducting research to expand scientific knowledge.

For instance, about one-in-four Americans say they have a great deal of confidence that private companies will build safe and reliable rockets and spacecraft (26%), and around half of Americans (51%) have at least a fair amount of confidence that space companies will be able to do so.

Americans are by and large confident about the ability of private companies to control the costs of developing rockets and spacecraft – 24% have a great deal of confidence and 41% have a fair amount of confidence, compared with 34% who have "not too much" confidence or no confidence at all. Moreover, 23% have a great deal of confidence and 47% have a fair amount of confidence that companies will conduct basic research to increase knowledge of space, compared with 29% who don't have much confidence or have no confidence at all.

Americans, however, tend to be skeptical about whether private companies will minimize human-made space debris, which increasingly poses a hazard to orbiting satellites and space stations. Only 13% of U.S. adults have a great deal of confidence that companies will minimize that problem, with 35% saying they have a fair amount of confidence. By comparison, about half of Americans (51%) have not too much or no confidence that private companies will minimize human-made space debris.

Men express more confidence than women in private space companies' abilities in most of these areas, particularly when it comes to building cost-effective and safe spacecraft. For example, 74% of men but 56% of women have at least a fair amount of confidence these companies will control costs, and 85% of men vs. 69% of women have at least a fair amount of confidence that private companies will build safe and reliable spacecraft.

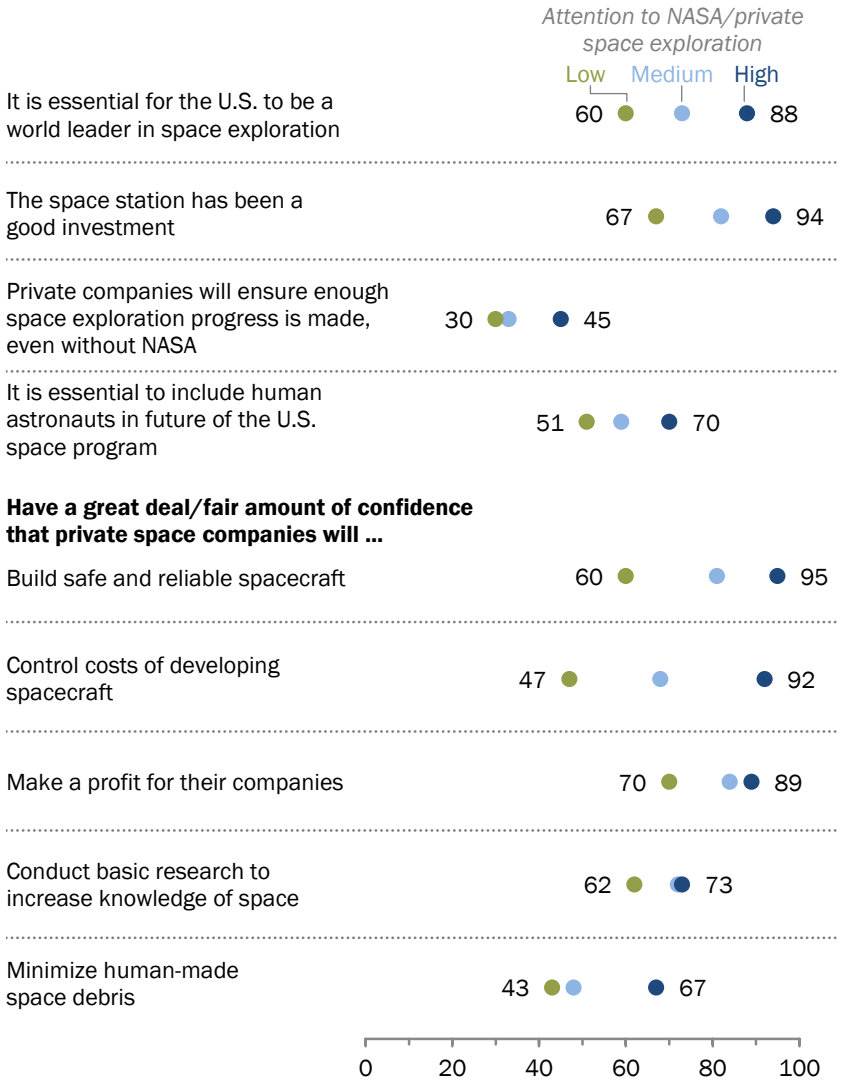
Americans most attentive to space news especially value U.S. global leadership but are closely divided over importance of NASA in future space exploration

A small share of the public, just 7%, is particularly attentive to space news, saying they have heard "a lot" about NASA in the past year *and* "a lot" about private space companies. About a fifth of Americans (22%) have heard "nothing at all" about either of these while most Americans (71%) fall in between these two extremes, having heard at least a little either about NASA or about private companies developing space exploration capabilities.

Those most attentive to space news stand out from other Americans for their strong support for the U.S. being a world leader in space exploration and their belief that the International Space Station has been a good investment for the country. For instance, 88% of those who have heard a lot of space news believe it is essential for the U.S. to be a global leader in space exploration, compared with 60% of those who have heard nothing

Americans most attentive to space news have more confidence in what private companies will accomplish

% of U.S. adults who say ...



Note: Two-item index based on amount heard or read about NASA in the past 12 months and private companies developing space exploration capabilities.
Source: Survey conducted March 27-April 9, 2018.
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about NASA and private space companies. And 94% of the most space-attentive Americans consider the space station to have been a good investment for the country, compared with 67% of those who have heard nothing about space news.

When thinking about priorities for NASA, Americans who are highly attentive to space news put more priority than other Americans on research missions such as basic scientific research and learning about the health effects of space travel. For example, three-quarters (75%) of those highly attentive to space news believe basic scientific research should be a top priority for NASA versus 31% of those with low attention to such news. Indeed, the share of this space-attentive group that considers basic research a top priority is similar to the shares who say the same about monitoring objects in space that could collide with Earth (69%) and monitoring the climate system (68%).

But, while those who pay a lot of attention to space news tend to put more priority than other Americans on NASA's research missions, they are more closely divided than other Americans over the importance of NASA's role in space exploration going forward. Among the most attentive, 55% say it is essential that NASA continue to be involved in U.S. space exploration, while 45% say private companies will ensure enough progress even without NASA's involvement. Among other Americans, the balance of opinion leans more clearly toward NASA remaining involved. For example, 66% of those who pay a medium level of attention to space news say it is essential for NASA to remain involved, as do 68% of those with low attention to space news.

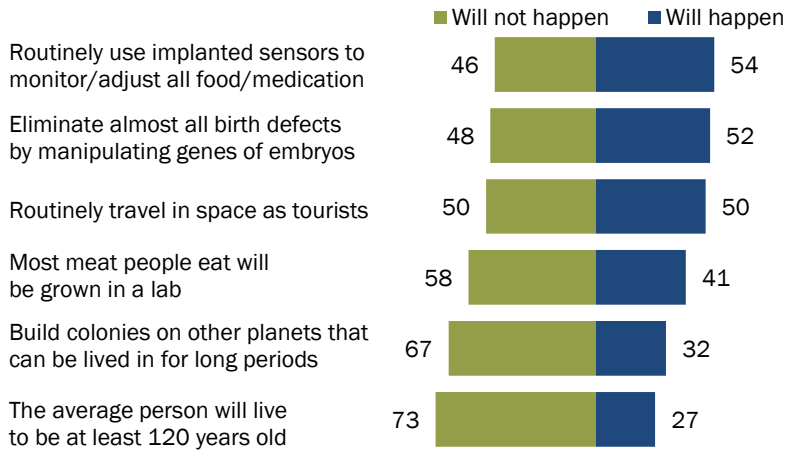
Those who have heard a lot about space news also tend to express more confidence in private space companies to handle key aspects of space exploration, especially building safe and cost-effective spacecraft. For example, 95% of Americans who are most attentive to news about NASA and private space companies have at least a fair amount of confidence that those companies will build safe and reliable rockets and spacecraft; 58% of this group has a great deal of confidence in companies to do this. By comparison, 60% of those who have heard nothing about NASA and private space companies have at least a fair amount of confidence in private companies to build safe and reliable spacecraft.

Space tourism? A majority of Americans say it's not for them, but 63% of Millennials are interested

Americans expect a range of scientific and technological developments ahead. But the public is divided over the prospects for space tourism in the next 50 years. Half (50%) believe this will happen while half are skeptical this will be routine for ordinary people. About a third of Americans (32%) believe that colonies on other planets – habitable for long periods of time – will be built by the year 2068, while two-thirds (67%) doubt this will happen.

Half of Americans believe people will routinely travel in space as tourists within the next 50 years

% of U.S. adults who say each of the following will happen before 2068



Note: Will and will not happen combines those saying each will definitely/probably occur. Respondents who did not give an answer are not shown.
Source: Survey conducted March 27-April 9, 2018.
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As the public considers the possibilities ahead for ordinary citizens to orbit the Earth in a spacecraft, more Americans say they would *not* want to orbit the Earth than say they would (58% to 42%).

Interest in orbiting the Earth is greater among younger generations, men and those who are more attentive to space news. Some 63% of Millennials (born 1981 to 1996) say they are definitely or probably interested in space tourism, compared with 39% of Gen Xers (born 1965 to 1980) and 27% of those in the Baby Boomer or older generations. Across all generations, men are more likely than women (51% vs. 33%) to say they are interested in traveling into space as tourists.

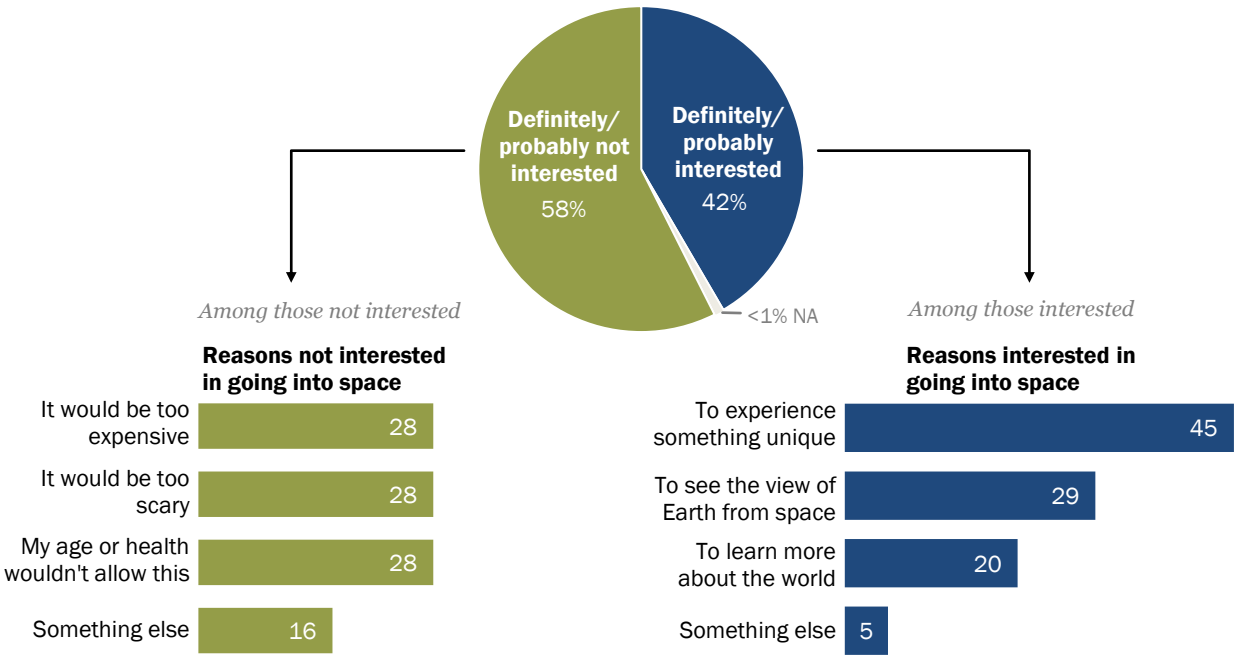
Those who have heard or read a lot about NASA and private space companies are much more likely (74%) to say they are interested in space tourism than those who have heard nothing about such space news (30%).

Among the 42% of Americans who would be interested in traveling into space, 45% of them say the main reason for their interest would be to "experience something unique." Some 29% of this group say they would go so that they can see the view of Earth from space, while 20% want to "learn more about the world."

The 58% of U.S. adults who say they wouldn't want to orbit the Earth aboard a spacecraft believe that such a trip would be either "too expensive" (28% of those asked) or "too scary" (28%), or that their age or health wouldn't allow it (28%). Some 16% of those not interested in space travel offered reasons other than the three options in the survey.

More than half of Americans say they would *not* be interested in going into space; among that group, equal shares cite cost, fear and age or health concerns

% of U.S. adults who say, personally, they would be ____ in orbiting the Earth in a spacecraft



Note: NA indicates no answer. Reasons for interested/not interested in going into space based on those who say they would be definitely/probably interested or definitely/probably not interested in orbiting the Earth in a spacecraft. Respondents who did not give an answer about their reasons are not shown.
Source: Survey of U.S. adults conducted March 27-April 9, 2018.
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Acknowledgments

This report is made possible by The Pew Charitable Trusts. This report is a collaborative effort based on the input and analysis of the following individuals. Find related reports online at: pewresearch.org/science.

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Methodology

This report is drawn from a survey conducted as part of the American Trends Panel (ATP), a nationally representative panel of randomly selected U.S. adults living in households recruited from landline and cellphone random-digit-dial (RDD) surveys. Panelists participate via monthly self-administered web surveys. Panelists who do not have internet access are provided with a tablet and wireless internet connection. The panel was created by Pew Research Center is being managed by GfK.

Data in this report are drawn from the panel wave conducted March 27-April 9, 2018, among 2,541 respondents. The margin of sampling error for the full sample of 2,541 respondents is plus or minus 2.7 percentage points.

Members of the ATP were recruited from several large, national landline and cellphone RDD surveys conducted in English and Spanish. At the end of each survey, respondents were invited to join the panel. The first group of panelists was recruited from the 2014 Political Polarization and Typology Survey, conducted Jan. 23 to March 16, 2014. Of the 10,013 adults interviewed, 9,809 were invited to take part in the panel and a total of 5,338 agreed to participate.[2] The second group of panelists was recruited from the 2015 Pew Research Center Survey on Government, conducted Aug. 27 to Oct. 4, 2015. Of the 6,004 adults interviewed, all were invited to join the panel, and 2,976 agreed to participate.[3] The third group of panelists was

Margins of error

	Sample size	Margin of error in percentage points
U.S. adults	2,541	+/- 2.7
Men	*1,278*	+/- 3.9
Women	*1,263*	+/- 3.9
Millennial	*667*	+/- 5.4
Gen Xer	*558*	+/- 5.9
Baby Boomer and older	*1,274*	+/- 3.9
H.S. or less	*726*	+/- 5.1
Some college	*736*	+/- 5.1
College grad	*598*	+/- 5.7
Post graduate	*476*	+/- 6.3
Party affiliation		
Republican/lean Rep.	981	+/- 4.4
Democrat/lean Dem.	1,483	+/- 3.6
*Index of attention to NASA/private space companies**		
High	199	+/- 9.8
Medium	1,872	+/- 3.2
Low	455	+/- 6.5

*A two-item index of attention to space news combined responses to SPACE1 and SPACE9. Those saying a lot to both items were classified as high. Those saying nothing at all to both items were classified as low. Those who gave no answer to either item were not classified on the index. All others were classified as medium.
Note: The margins of error are reported at the 95% level of confidence and are calculated by taking into account the average design effect for each subgroup.
Source: Survey conducted March 27-April 9, 2018.
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[2] When data collection for the 2014 Political Polarization and Typology Survey began, non-internet users were subsampled at a rate of 25%, but a decision was made shortly thereafter to invite all non-internet users to join. In total, 83% of non-internet users were invited to join the panel.
[3] Respondents to the 2014 Political Polarization and Typology Survey who indicated that they are internet users but refused to provide an email address were initially permitted to participate in the American Trends Panel by mail, but were no longer permitted to join the panel after

recruited from a survey conducted April 25 to June 4, 2017. Of the 5,012 adults interviewed in the survey or pretest, 3,905 were invited to take part in the panel and a total of 1,628 agreed to participate.[4]

The overall target population for Wave 33 was non-institutionalized persons age 18 and over, living in the United States, including Alaska and Hawaii. The sample consisted of 3,102 ATP members. This subsample was selected using the following approach:

1. Panelists were grouped into three strata based on how underrepresented they are demographically. Then we analyzed response rates to the last five panel survey waves (W28-32) to project the number of panelists in each stratum who would respond to the W33 survey.

2. We then determined how many panelists we wanted to sample from each stratum in W33 in order to finish with around 2,500 completed interviews and have a responding sample that is as representative as possible.

    - Stratum A consists of panelists who are non-internet users, black non-Hispanic, Hispanic, or high school or less education. There were 1,819 total panelists in this stratum and they are sampled at a rate of 100% for W33. 1,806 were active panelists.

    - Stratum B consists of panelists that are ages 18 to 34 or are non-volunteers. The 1,684 total panelists in this stratum are subsampled at a rate of 63%, yielding 1,061 sampled for W33 (1,057 were active).

    - Stratum C consists of the remaining 2,009 panelists not in stratum A or B. This group is subsampled at a rate of 12%, yielding 241 panelists sampled for W33 (239 were active).

The ATP data were weighted in a multi-step process that begins with a base weight incorporating the respondents' original survey selection probability and the fact that in 2014 some panelists were subsampled for invitation to the panel. Next, an adjustment was made for the fact that the propensity to join the panel and remain an active panelist varied across different groups in the sample. The final step in the weighting uses an iterative technique that aligns the sample to

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Feb. 6, 2014. Internet users from the 2015 Pew Research Center Survey on Government who refused to provide an email address were not permitted to join the panel.

[4] White, non-Hispanic college graduates were subsampled at a rate of 50%.

population benchmarks on a number of dimensions. Gender, age, education, race, Hispanic origin and region parameters come from the U.S. Census Bureau's 2016 American Community Survey. The county-level population density parameter (deciles) comes from the 2010 U.S. decennial census. The telephone service benchmark comes from the July-December 2016 National Health Interview Survey and is projected to 2017. The volunteerism benchmark comes from the 2015 Current Population Survey Volunteer Supplement. The party affiliation benchmark is the average of the three most recent Pew Research Center general public telephone surveys. The internet access benchmark comes from the 2017 ATP Panel Refresh Survey. Respondents who did not previously have internet access are treated as not having internet access for weighting purposes. Sampling errors and statistical tests of significance take into account the effect of weighting. Interviews are conducted in both English and Spanish, but the Hispanic sample in the ATP is predominantly U.S. born and English speaking.

Margins of error tables shown here provide the unweighted sample sizes and the error attributable to sampling that would be expected at the 95% level of confidence for different groups in the survey taking into account the average design effect for each subgroup. Sample sizes and sampling errors for other subgroups are available upon request.

In addition to sampling error, one should bear in mind that question wording and practical difficulties in conducting surveys can introduce error or bias into the findings of opinion polls.

The March 2018 wave had a response rate of 82% (2,541 responses among 3,102 individuals in the panel). Taking account of the combined, weighted response rate for the recruitment surveys (10.0%) and attrition from panel members who were removed at their request or for inactivity, the cumulative response rate for the wave is 2.3%.[5]

[5] Approximately once per year, panelists who have not participated in multiple consecutive waves are removed from the panel. These cases are counted in the denominator of cumulative response rates. Note that for the March 2018 survey, we calculated the response rates by computing the mean rates for the subsampled respondents (based on the rates from the recruitment survey they joined the panel on).

Appendix: Detailed tables

More men than women support continued U.S. leadership in space exploration

% of U.S. adults who say …

	Men	Women
It is essential for U.S. to be a world leader in space exploration	77	66
The space station has been a good investment	84	76
It is essential for NASA to be involved in future space exploration efforts	62	69
It is essential to include astronauts in future U.S. space program	63	54
Each should be a top priority for NASA		
Monitoring key parts of Earth's climate system	62	64
Monitoring asteroids/objects that could hit the Earth	65	59
Conducting basic scientific research to increase knowledge, understanding of space	54	40
Developing technologies that could be adapted for other uses	44	39
Conducting research on how space travel affects human health	41	35
Searching for raw materials/natural resources for use on Earth	34	35
Searching for life and planets that could support life	31	31
Sending astronauts to Mars	25	11
Sending astronauts to the moon	16	10
Have a great deal or fair amount of confidence in private space companies will …		
Make a profit for their companies	83	78
Build safe and reliable spacecraft	85	69
Control costs for developing spacecraft	74	56
Conduct basic research to increase knowledge, understanding of space	73	67
Minimize human-made space debris	53	44

Note: Respondents who gave other responses or who did not give an answer are not shown.
Source: Survey conducted March 27-April 9, 2018.
"Majority of Americans Believe It Is Essential That the U.S. Remain a Global Leader in Space"

PEW RESEARCH CENTER

Views on these space issues tend to be similar across generations

% of U.S. adults who say …

	Millennial	Gen Xer	Baby Boomer and older
It is essential for U.S. to be a world leader in space exploration	70	73	71
The space station has been a good investment	88	78	75
It is essential for NASA to be involved in future space exploration efforts	66	65	66
It is essential to include astronauts in future U.S. space program	66	57	53
Each should be a top priority for NASA			
Monitoring key parts of Earth's climate system	67	63	61
Monitoring asteroids/objects that could hit the Earth	62	66	61
Conducting basic scientific research to increase knowledge, understanding of space	50	48	43
Developing technologies that could be adapted for other uses	41	39	43
Conducting research on how space travel affects human health	40	36	39
Searching for raw materials/natural resources for use on Earth	39	33	32
Searching for life and planets that could support life	36	31	25
Sending astronauts to Mars	20	19	14
Sending astronauts to the moon	11	14	14
Have a great deal or fair amount of confidence in private space companies will …			
Make a profit for their companies	84	76	81
Build safe and reliable spacecraft	77	73	79
Control costs for developing spacecraft	58	63	70
Conduct basic research to increase knowledge, understanding of space	70	66	72
Minimize human-made space debris	51	45	48

Note: Respondents who gave other responses or who did not give an answer are not shown. Millennials were born between 1981 and 1996. Gen Xers were born between 1965 and 1980. Baby Boomers and older generations were born 1964 or earlier.
Source: Survey conducted March 27-April 9, 2018.
"Majority of Americans Believe It Is Essential That the U.S. Remain a Global Leader in Space"

PEW RESEARCH CENTER

There are no more than moderate differences by education on most of these space issues

% of U.S. adults who say …

	H.S. or less	Some college	College grad	Postgraduate
It is essential for U.S. to be a world leader in space exploration	69	70	80	72
The space station has been a good investment	72	80	91	85
It is essential for NASA to be involved in future space exploration efforts	63	62	71	73
It is essential to include astronauts in future U.S. space program	59	61	58	50
Each should be a top priority for NASA				
Monitoring key parts of Earth's climate system	58	62	70	74
Monitoring asteroids/objects that could hit the Earth	62	63	62	59
Conducting basic scientific research to increase knowledge, understanding of space	38	46	56	63
Developing technologies that could be adapted for other uses	38	44	41	48
Conducting research on how space travel affects human health	39	39	39	34
Searching for raw materials/natural resources for use on Earth	34	37	36	28
Searching for life and planets that could support life	31	35	28	24
Sending astronauts to Mars	20	16	16	16
Sending astronauts to the moon	15	13	10	10
Have a great deal or fair amount of confidence in private space companies will …				
Make a profit for their companies	73	85	86	87
Build safe and reliable spacecraft	72	78	84	83
Control costs for developing spacecraft	57	68	71	72
Conduct basic research to increase knowledge, understanding of space	71	72	71	62
Minimize human-made space debris	53	47	47	37

Note: Respondents who gave other responses or who did not give an answer are not shown.
Source: Survey conducted March 27-April 9, 2018.
"Majority of Americans Believe It Is Essential That the U.S. Remain a Global Leader in Space"

PEW RESEARCH CENTER

Majorities of Republicans and Democrats say U.S. should continue to be a world leader in space

% of U.S. adults who say …

	Rep/ lean Rep	Dem/ lean Dem
It is essential for U.S. to be a world leader in space exploration	72	72
The space station has been a good investment	77	82
It is essential for NASA to be involved in future space exploration efforts	59	70
It is essential to include astronauts in future U.S. space program	58	59
Each should be a top priority for NASA		
Monitoring key parts of Earth's climate system	44	78
Monitoring asteroids/objects that could hit the Earth	61	63
Conducting basic scientific research to increase knowledge, understanding of space	38	53
Developing technologies that could be adapted for other uses	41	42
Conducting research on how space travel affects human health	35	40
Searching for raw materials/natural resources for use on Earth	31	36
Searching for life and planets that could support life	26	34
Sending astronauts to Mars	16	18
Sending astronauts to the moon	15	11
Have a great deal or fair amount of confidence in private space companies will …		
Make a profit for their companies	82	81
Build safe and reliable spacecraft	81	75
Control costs for developing spacecraft	67	63
Conduct basic research to increase knowledge, understanding of space	75	67
Minimize human-made space debris	55	44

Note: Respondents who gave other responses or who did not give an answer are not shown.
Source: Survey conducted March 27-April 9, 2018.
"Majority of Americans Believe It Is Essential That the U.S. Remain a Global Leader in Space"

PEW RESEARCH CENTER

Survey questionnaire and topline

2018 PEW RESEARCH CENTER'S AMERICAN TRENDS PANEL
MARCH 27-APRIL 9, 2018
TOTAL N=2,541

ASK ALL:
FUTURE Do you think each of the following things will or will not happen in the next 50 years, that is, before the year 2068? **[RANDOMIZE ITEMS]**

		Will definitely happen	Will probably happen	Will probably not happen	Will definitely not happen	No Answer
a.	People will routinely travel in space as tourists					
	Mar 27-Apr 9, 2018	9	42	41	9	<1
b.	People will build colonies that can be lived in for long periods of time on other planets[6]					
	Mar 27-Apr 9, 2018	5	28	50	18	1
c.	Most of the meat people eat will be grown in a lab					
	Mar 27-Apr 9, 2018	5	36	49	9	<1
d.	The average person in the U.S. will live to be at least 120 years old[7]					
	Mar 27-Apr 9, 2018	4	22	53	20	1
e.	We will eliminate almost all birth defects by manipulating the genes of an embryo before a baby is born					
	Mar 27-Apr 9, 2018	8	44	40	8	<1
	Mar 2-Mar 28, 2016[8]	7	40	44	9	1
f.	We will routinely use implanted sensors to monitor and adjust all food and medications that enter our bloodstream					
	Mar 27-Apr 9, 2018	8	45	36	10	<1
	Mar 2-Mar 28, 2016	8	40	43	7	1

[6] A 2014 Pew Research Center telephone survey asked "How likely to do you think it is that humans will build colonies on another planet that can be lived in for long periods" in the next 50 years? 5% said this will definitely happen, 28% said this will probably happen, 39% said this will probably not happen, 25% said this will definitely not happen, and 3% did not know.
[7] A 2013 Pew Research Center telephone survey asked, "How likely you think it is that the average person in the U.S. will live to be at least 120 years old in about the next 40 years?", rather than "in the next 50 years." In the 2013 Pew Research Center survey, 3% said this will definitely happen, 22% said this will probably happen, 52% said this will probably not happen, 21% said this will definitely not happen and 1% did not know or refused.
[8] In 2016, the question asked about "the genes of embryos" rather than "the genes of an embryo."

ASK ALL:

SPACE1 In the past 12 months, how much, if anything, have you heard or read about NASA, the National Aeronautics and Space Administration?

Mar 27-Apr 9 2018	
10	A lot
55	A little
35	Nothing at all
<1	No Answer

NO SPACE 2

ASK ALL:

SPACE3 How would you rate each of the following priorities for NASA's space efforts? **[RANDOMIZE ITEMS]**

	Should be a top priority	Should be an important but lower priority	Should not be too important	Should not be done	No Answer
a. Searching for life and planets that could support life					
Mar 27-Apr 9, 2018	31	42	20	7	1
b. Searching for raw materials and natural resources that could be used on Earth					
Mar 27-Apr 9, 2018	34	43	16	5	<1
c. Conducting basic scientific research to increase knowledge and understanding of space					
Mar 27-Apr 9, 2018	47	40	10	2	1
d. Developing technologies that could be adapted for uses other than space exploration					
Mar 27-Apr 9, 2018	41	44	11	3	1
e. Monitoring asteroids and other objects that could potentially hit the Earth					
Mar 27-Apr 9, 2018	62	29	7	2	1
f. Monitoring key parts of the Earth's climate system					
Mar 27-Apr 9, 2018	63	25	7	3	1
g. Sending human astronauts to explore the moon					
Mar 27-Apr 9, 2018	13	42	38	6	<1

SPACE3 CONTINUED

		Should be a top priority	Should be an important but lower priority	Should not be too important	Should not be done	No Answer
h.	Sending human astronauts to explore Mars Mar 27-Apr 9, 2018	18	45	30	7	<1
i.	Conducting scientific research on how space travel affects human health Mar 27-Apr 9, 2018	38	41	17	3	1

ASK ALL:

SPACE4 Do you think the space station has been…

Mar 27-Apr 9 2018	
80	A GOOD investment for this country
19	NOT a good investment for this country
2	No Answer

TREND FOR COMPARISON

Pew Research Center survey conducted by telephone: Do you think the SPACE STATION has been a good investment for this country, or don't you think so?

Aug. 15-25 2014	
64	*Good investment*
29	*Not a good investment*
7	*Don't know/Refused* ***(VOL.)***

ASK ALL:

SPACE5 The cost of sending human astronauts to space is considerably greater than the cost of using robotics for space exploration.

As you think about the future of the U.S. space program, do you think it is…

Mar 27-Apr 9 2018	
58	ESSENTIAL to include the use of human astronauts in space
41	NOT ESSENTIAL to include the use of human astronauts in space
1	No Answer

TREND FOR COMPARISON
Pew Research Center survey conducted by telephone: The cost of sending human astronauts to space is considerably greater than the cost of using robotic machines for space exploration. As you think about the future of the U.S. space program, do you think it is essential or not essential to include the use of human astronauts in space?

Aug. 15-25 2014	
59	*Essential*
39	*Not essential*
3	*Don't know/Refused* ***(VOL.)***

ASK ALL:
SPACE6 In your view, do you think it is…

Mar 27-Apr 9 2018	
72	ESSENTIAL that the United States continue to be a world leader in space exploration
27	NOT ESSENTIAL that the United States continue to be a world leader in space exploration
1	No Answer

TREND FOR COMPARISON
Pew Research Center survey conducted by telephone: In your view, is it essential or not essential that the United States continue to be a world leader in space exploration?

Jun 15-19 2011	
58	*Essential*
38	*Not essential*
4	*Don't know/Refused* ***(VOL.)***

NO SPACE 7 AND SPACE 8

ASK ALL:
SPACE9 How much, if anything, have you heard or read about private companies, such as SpaceX, Blue Origin and Virgin Galactic, developing space exploration capabilities?

Mar 27-Apr 9 2018	
18	A lot
45	A little
37	Nothing at all
<1	No Answer

ASK ALL:
SPACE10 Which statement comes closer to your views — even if neither is exactly right? **[RANDOMIZE OPTIONS]**

Mar 27-Apr 9 2018	
65	It is essential that NASA continue to be involved in space exploration
33	Private companies will ensure that enough progress is made in space exploration, even without NASA's involvement
1	No Answer

ASK ALL:
SPACE11 In the future, private companies expect to allow people to orbit the Earth in a spacecraft. How much, if at all, would you, personally, be interested in doing this?

Mar 27-Apr 9 2018	
19	Definitely interested
23	Probably interested
26	Probably NOT interested
32	Definitely NOT interested
<1	No Answer

ASK IF DEFINITELY OR PROBABLY INTERESTED IN ORBITING EARTH IN A SPACECRAFT (SPACE11=1,2) [N=1,011]:
SPACE12 What is the MAIN REASON you would be interested in orbiting the Earth in a spacecraft? **[RANDOMIZE OPTIONS 1-3 WITH 4 ALWAYS LAST]**

Based on those definitely or probably interested in orbiting Earth in a spacecraft

Mar 27-Apr 9 2018	
29	To see the view of Earth from space
20	To learn more about the world
45	To experience something unique
5	Something else **[SPECIFY]**
2	All of the above
3	Other
1	No Answer

ASK IF PROBABLY NOT OR DEFINITELY NOT INTERESTED IN ORBITING EARTH IN A SPACECRAFT (SPACE11=3,4) [N=1,520]:

SPACE13 What is the MAIN REASON you would NOT be interested in orbiting the Earth in a spacecraft? **[RANDOMIZE OPTIONS 1-3 WITH 4 ALWAYS LAST]**

Based on those probably not or definitely not interested in orbiting Earth in a spacecraft

Mar 27-Apr 9 2018	
28	It would be too expensive
28	It would be too scary
28	My age or health would not allow this
16	Something else **[SPECIFY]**
8	Not interested, no reason to go
1	All of the above
7	Other
<1	No Answer

ASK ALL:

SPACE14 How much confidence, if any, do you have that private companies developing space exploration capabilities will… **[RANDOMIZE ITEMS]**

		A great deal of confidence	A fair amount of confidence	Not too much confidence	No confidence at all	No Answer
a.	Build rockets and spacecraft that are safe and reliable					
	Mar 27-Apr 9, 2018	26	51	17	5	1
b.	Minimize the debris from rockets, satellites and other human-made objects in the Earth's orbit					
	Mar 27-Apr 9, 2018	13	35	38	13	1
c.	Control costs for developing rockets and spacecraft					
	Mar 27-Apr 9, 2018	24	41	26	9	1
d.	Conduct basic scientific research to increase knowledge and understanding of space					
	Mar 27-Apr 9, 2018	23	47	22	7	1
e.	Make a profit for their companies					
	Mar 27-Apr 9, 2018	44	36	14	4	1

OTHER QUESTIONS PREVIOUSLY RELEASED