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| Stories |
| A wrecking ball  |
| Thin, blue line  |
| Water on Mars  |
| Above the clouds  |
| Into the starry skies  |
| Seeing stars |
| Space waves |

1. In what way was Jupiter like a giant wrecking ball?
2. Why do you think 'blanket' is a good word to use for the atmosphere?
3. What does the discovery of water on Mars mean?
4. What do you need to look at something really far away?
5. Where is an ideal place for a telescope?
6. Why is Scotland not a great place to build a telescope?
7. Where do astronomers put their telescopes to get above the clouds?
8. Why do astronomers often get lots of foreign travel in their job?
9. What are Tim Peake's earliest memories of space?
10. If you’re having a bad day, what does Ali say you should stop and do?
11. What does perspective mean?
12. How does the vast universe make Ali’s gran feel?
13. How does it make Ali feel?
14. For how long had the gravitational waves been travelling through space?
15. What theory said there should be loads of these waves in space?
16. Why did Einstein think we might never be able to measure them?
17. What did scientists do for 50 years that eventually proved him wrong?

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| Stories |
| Astronomy for beginners |
| Dark side of the Moon |
| Engineer mum |
| It’s life, Jim |

1. What do you need to wait for, to use a new telescope?
2. Why do you need somewhere dark to use a telescope?
3. Why is the Moon easy to see – easier than stars?
4. What do you do first, once you’ve found a nice, dark spot?
5. What do we call the piece of the telescope that you look through?
6. What do you think 'focus' means?
7. People often talk about the what of the Moon?
8. There isn’t a ---- side of the Moon.
9. What belonging to the Moon can’t we see from Earth?
10. Why can’t we see it?
11. Why is it not dark?
12. Why does life take some juggling for Marielle?
13. Why was she not coming in to work every day when this story was written?
14. Being a mum of young children and a scientist take what?
15. What is Marielle by training?
16. How would she feel if her son and daughter wanted to be an artist?
17. What is Charles Cockell's work all about?
18. Why does he believe it's very unlikely that life exists only on Earth?
19. Does he know what kind of life there might be on other planets?

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| Stories |
| Just peanuts to space |
| Looking for Martians |
| Light and airy |
| Pinpoint stars |

1. What does Joe study?
2. Why does he say Mars and Jupiter are boring?
3. What is a galaxy?
4. What is the universe?
5. What's the name for a scientist who studies the really big stuff in space?
6. Why is there very little chance of finding life on Mars now?
7. So why is ExoMars looking for signs of life there?
8. What will it do with its drill?
9. Name one place that astronomers who use telescopes travel to.
10. A lot of what doesn’t get through the Earth’s atmosphere?
11. So astronomers build their telescopes on mountains and where else?
12. Why is space an even better place than a mountain?
13. What are stars?
14. Before the Hubble telescope, why could we not see any star as bigger than a pinpoint?
15. What did Hubble show us for the first time?
16. What does Olivia study?
17. What are they made of?
18. How can she tell?
19. What word do scientists us for the Moon going around the Earth?
20. What does the Earth orbit?
21. What does the Moon do to the light from the Sun when it gets right between Earth and Sun?
22. What is that called?

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| Stories |
| The Moon gets in the way |
| What is a gravitational wave? |
| Whirling a dance partner |

1. Where does Graham work?
2. Graham’s first answer is that a gravitational wave is a wave in the fabric of what?
3. Then he asks us to imagine a gravitational wave coming through the ceiling and passing ------- us.
4. If that happened, we would get slightly ------ together …
5. … and then slightly ------- apart.
6. Then what would happen?
7. What is gravity?
8. The Sun’s gravity pulls our planet around it in a path known as an -----.
9. What shape is the path of the Earth around the Sun?
10. Why is the Sun the boss of all the planets?

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| Stories |
| One big question |
| Radio universe |
| ROE appeal |

1. What big question would Charles love to know the answer to?
2. What would the answer tell us?
3. What do we not know about life on Earth?
4. So it could have been a highly unlikely what?
5. But what would finding that life also evolved on Mars tell us?
6. We might not get an answer to Charles’s big question until what happens?
7. What was the big dish at Chilbolton built to do?
8. Name two objects in the universe that give out radio waves.
9. What is the big dish?
10. In what way is it better than the radio aerial in your car?
11. What else can it do that your car aerial can’t?
12. What does Olivia study?
13. How does she figure out what they mean?
14. What’s one thing she really likes about working at the Royal Observatory, Edinburgh?
15. What do they build there?
16. What’s the name of the instrument Olivia will use on the James Webb Telescope?

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| Stories |
| Solar system |
| Some things don’t change |
| South to Tenerife |

1. What does the artist’s impression capture well about the solar system?
2. But it is misleading in two ways; first the outer planets are much ------ than they look here.
3. So for example, you could get how many Earths into one Jupiter?
4. Secondly the distances are wrong - the planets are much ------- apart than they look here.
5. If the distances were to scale and Earth were the size of a pea, how far away would Neptune be?
6. On most other planets that support life it will just be what?
7. How long were microbes on Earth before anything else evolved?
8. The biology on other planets will be different than it is on Earth, but what won’t be different?
9. What does Charles Cockell say about the Periodic Table?
10. What does Martin do?
11. Where can you go to be sure of getting dark skies?
12. Where did Smyth and his wife go to study the stars?
13. What is the basic principle of modern astronomy?
14. When the Universe first formed, what was in it?
15. So where did all the other elements come from?
16. Every star is a what?
17. How did the elements get out of a star and into space?
18. How did they get into new stars and planets?
19. Why would a cosmic housekeeper be a bad idea?
20. What does Olivia study?

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| Stories |
| We are stardust |
| You look good enough to eat |
| Are we alone? |

1. Astronomers may have found us what?
2. How far away is it?
3. What is a light-year?
4. In the time it takes to say, ‘How fast?’ light could travel from here to where?
5. Scientists estimate there are 100 billion what in our galaxy?
6. And there are at least how many galaxies in the Universe?
7. We know there are planets around other suns because of their effects on what?
8. But we can’t possibly what?
9. A few planets lie close to home – where?
10. What is the robot ExoMars designed to discover?
11. Why can astronomers have normal lives nowadays?
12. What is Martin’s job called?
13. The instruments engineers like Martin design take the starlight from what?
14. What does a spectrograph do?
15. They take light from a telescope and split it into separate what?
16. Why is that useful?

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| Stories |
| Dark and lonely no more |
| Exciting space-time |
| Space art |

1. The discovery of gravitational waves means we can learn more about what?
2. And we can look right back in time, close to what?
3. Scientists at which university have been working on gravitational wave detectors since the 1970s?
4. Every time we invent a new type of telescope, we see what, says Martin?
5. What are hanging on the walls of Charles’s office?
6. What is the painting of people in spacesuits on a red planet about?
7. It’s all what, of course?
8. How do we know that?
9. What will Charles’s research help to make happen?
10. Ears on a gravitational wave detector are used for what?
11. What are the ears attached to?
12. Mirrors, ears and fibres are all made of the same what?
13. Why is that good?
14. What do we now know that all the gas giant planets have?
15. What’s special about Saturn’s?
16. What is a gas giant planet?
17. In what way are the four inner planets different to the four outer planets?
18. What does the word *terrestrial* mean?
19. What are Saturn’s rings made of?

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| Stories |
| Ears on a coffee mug |
| The rings of Saturn |
| Alien scientist |

1. Charles sometimes dresses up as what?
2. What is the course he teaches all about?
3. In his story what have the aliens discovered?
4. Why do most of the alien scientists think this planet can’t support life?
5. What do a few of them believe?
6. In what way are most of the alien scientists wrong?
7. What is the point of the story?

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| Stories |
| Goldilocks planet |
| Pigs in space |

1. Scientists have discovered the closest what?
2. How far away is it?
3. What type of star is its sun?
4. What would you weigh if you stood on the planet?
5. What does the middle planet sit within?
6. Why do you think it’s called the Goldilocks Zone?
7. All living things need what?
8. Why?
9. What does Charles think is possible but not likely?
10. Animals on Earth get their energy by combining food with what?
11. Where does that come from?
12. Where do some bacteria get their oxygen from, instead of the air?
13. What bad smelling gas does that give off?
14. If an animal the size of a pig were to use this method to get its oxygen, what did Charles’s sums show?
15. What is another huge problem with this method of getting oxygen, for an animal the size of a pig?