Name: _____ Date: _____

A Telescope That Floats Above the Air

Circle group

Have you seen stars twinkle? It happens because the air above us moves. It makes starlight wobble before it reaches your eyes. This is a problem for sharp pictures of space.

Scientists found a smart fix. They put a telescope above the air. It is the Hubble Space Telescope. It goes around Earth in space. There is no air there to blur the view.

The telescope is about as big as a school bus. It has a big mirror. The mirror collects light from far stars and galaxies. Cameras turn the light into pictures. The pictures come to Earth by radio signals.

Hubble has shown us glowing clouds of gas, young stars and far galaxies. You can see the pictures online and in books.

Over the years, astronauts have flown up to the telescope. They fixed parts and added new tools. That kept it working a long time. A good view can mean going somewhere new.

Questions

1. Why do stars seem to twinkle?

_____

_____

2. Where does the Hubble Space Telescope go?

_____

_____

3. What does the big mirror do?

_____

_____

4. How do the pictures get to Earth?

_____

_____

5. What did astronauts do when they visited the telescope?

_____

_____

6. Why does a telescope in space take sharper pictures?

_____

_____

Words to know

twinkle: to shine with a quick, flickering light
telescope: a tool that makes faraway things look closer
wobble: to shake from side to side
galaxies: huge groups of stars, gas and dust
signals: messages sent by waves, such as radio

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

A Telescope That Floats Above the Air

Triangle group

Have you ever seen the stars twinkle? That happens because the air above us is always moving. It makes starlight wobble before it reaches your eyes. For people who want to take sharp pictures of space, this is a problem.

Scientists found a clever answer. They put a telescope above the air. It is called the Hubble Space Telescope. It travels around Earth in space, where there is no air to blur the view.

The telescope is about the size of a school bus. It has a big mirror that collects light from faraway stars and galaxies. Cameras then turn that light into pictures. The pictures are sent to Earth by radio signals.

Hubble has shown us glowing clouds of gas, young stars and galaxies far away. People can look at these pictures online and in books.

Over the years, astronauts have flown up to visit the telescope. They fixed parts and added new tools. That kept it working for a very long time. Hubble shows that a good view sometimes means going somewhere new.

Questions

1. Why do stars seem to twinkle?

_____

_____

2. Where does the Hubble Space Telescope travel?

_____

_____

3. What does the big mirror do?

_____

_____

4. How are Hubble's pictures sent to Earth?

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5. What did astronauts do when they visited the telescope?

_____

_____

6. Why does a telescope in space take sharper pictures than one on the ground?

_____

_____

Words to know

twinkle: to shine with a quick, flickering light
telescope: a tool that makes faraway things look closer
wobble: to shake from side to side
galaxies: huge groups of stars, gas and dust
signals: messages sent by waves, such as radio

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

A Telescope That Floats Above the Air

Square group

Have you ever noticed stars twinkling? That happens because the air above us is constantly moving, which causes starlight to wobble before it finally reaches your eyes. For anyone hoping to take sharp pictures of the universe, this is a real difficulty.

Scientists devised a clever solution: they placed a telescope above the air. It is called the Hubble Space Telescope, and it circles Earth in space, where there is no air to blur the view.

The telescope is roughly the size of a school bus. Its enormous mirror gathers light from distant stars and galaxies, and cameras then convert that light into pictures, which are transmitted to Earth by radio signals.

Hubble has revealed glowing clouds of gas, newborn stars and galaxies that lie unimaginably far away. People everywhere can look at these pictures online and in books.

Over the years, astronauts have flown up to visit the telescope, where they repaired parts and installed new tools. That work kept it running for a very long time. Hubble proves that a better view sometimes means traveling somewhere new.

Questions

1. Why do stars appear to twinkle?

_____

_____

2. Where does the Hubble Space Telescope travel?

_____

_____

3. What does the enormous mirror do?

_____

_____

4. How are Hubble's pictures transmitted to Earth?

_____

_____

5. What did the astronauts do when they visited the telescope?

_____

_____

6. Why does a telescope in space capture sharper pictures than one on the ground?

_____

_____

Words to know

telescope: a tool that makes faraway things look closer
wobble: to shake from side to side
galaxies: huge groups of stars, gas and dust
signals: messages sent by waves, such as radio

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: A Telescope That Floats Above the Air

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: A Telescope That Floats Above the Air

Easier · 156 words · Flesch-Kincaid grade 3

1. The moving air makes the starlight wobble.
2. Around Earth, above the air.
3. It collects light from far stars and galaxies.
4. By radio signals.
5. They fixed parts and added new tools.
6. There is no moving air in space to blur the view.

Triangle: A Telescope That Floats Above the Air

This passage · 175 words · Flesch-Kincaid grade 4.5

1. The moving air makes the starlight wobble.
2. Around Earth, above the air.
3. It collects light from faraway stars and galaxies.
4. By radio signals.
5. They fixed parts and added new tools.
6. There is no moving air in space to blur the view.

Square: A Telescope That Floats Above the Air

Harder · 179 words · Flesch-Kincaid grade 8.2

1. The moving air makes the starlight wobble.
2. Around Earth, above the air.
3. It gathers light from distant stars and galaxies.
4. By radio signals.
5. They repaired parts and installed new tools.
6. There is no moving air in space to blur the view.