

Lesson 1: The Scale of the Universe

Get ready to meet two famous astronomers just before they face off in a scientific argument.

“The Great Debate” was about the biggest astronomy question of their time: How big is the universe, and how do we know? Marshall travels back in time to interview them, and find out why unusual objects in the sky called spiral nebulae may be the key to determining the size of the universe.

RESOURCES INCLUDED WITH THIS LESSON:

- Listening Comprehension Questions
- Discussion Questions
- Shapley & Curtis Graphic Organizer

Listening Questions - Lesson 1

Once you've listened to the first lesson, answer each of the following questions.

1. What was the big question the two astronomers were planning to debate in the Great Debate?
2. What were some of Harlow Shapley's discoveries about the universe?
3. What were two things that Shapley thought about the universe?
4. Why did Shapley think what he thought about the universe?
5. What did Curtis think about the size of the universe?
6. Why did Curtis think Shapley was wrong?
7. How big did Shapley think the Milky Way was? How big did Curtis think the Milky Way was?
8. What is a *spiral nebula*? What did Curtis think they were? What did Shapley think they were?

TUMBLE

SCIENCE PODCAST FOR KIDS


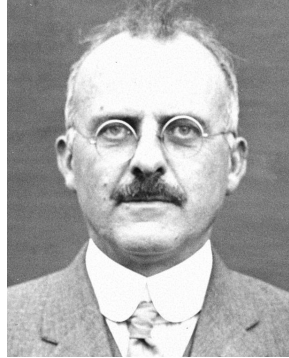
DISCUSSION QUESTIONS

Of the two debaters, who do you think was right, and who do you think was wrong? Why?

Have you ever learned something new that completely changed how you thought about something? What was it, and why did it change how you thought?

Shapley / Curtis Graphic Organizer

After listening to the episode, write what each astronomer thought about each aspect of the universe in the chart below.

	 Harlow Shapley	 Heber Curtis
The location of the sun in our galaxy		
The size of the galaxy		
What did they think spiral nebulae were?		