

TUMBLE TRANSCRIPT:

Episode 4: Continuing Your Star Journal



ME: Hi and welcome to Cataloging the Universe! In this 7 part series, we'll be taking a journey through time and space to try to find our *own* answers to these giant questions about the universe. Along the way, we'll have some help from scientists, experts, and our imagination. I'm Marshall, and I'll be your guide on this journey.

This is Lesson 4: Continuing Your Star Journal. In this lesson, we'll continue watching the sky and taking careful notes of what we see. This time, though, we're looking for *changes*—so make sure you've got your notes from last time!

INTRO MUSIC ENDS

ME: Just as we did in Lesson 2, today we're going to go outside again, and take some careful observations of what we see in the sky. We learned from Messier that observing the sky takes patience and consistency. Tonight, we're on the lookout for any changes or unknown objects that we haven't seen before.

Before we get started making observations let's take a long look at our notes from last time. Make sure you take a look at all the things you found last time and try to notice where each of the things you saw were in the sky. If more than a few days have passed since you did Lesson 2, things might have changed! So you want to make sure you know where everything was the last time you looked. **<ding>** Look over your star journal notes from last time.

PAUSE

ME: Now let's go ahead and start a new entry in our star journal. **<ding>** Turn to a fresh page, and note down today's date, as well as the time.

PAUSE

ME: Remember how important it is to get your bearings when you're looking at the sky? See if you can find the same four landmarks you found the last time we went sky-watching. We want to mark where they are in your journal again and copy the diagram you made in the first section of your notes. Redraw your diagram from last time, marking the same landmarks you found last time on the page, in the same spot they were in before.

PAUSE



ME: Now, tonight, as we look at the stars, it's important not just to take careful notes of what you see, but how things might be different tonight from the last time you looked. Do you remember the story of how Messier found comets?

Charles Messier: Well I record where I saw it, and then I check again the next night to see if it is next to different stars. Those we know stay in the same position.

ME: See if you can find all the things you found the last time we went out to look at the sky. Are they in the same place as before or have they moved? Maybe closer to one landmark or further from another. Just like we did in Lesson 2, **<ding>** draw what you see on your new page, including their position near the landmarks.

PAUSE

ME: Now that you've found all the objects from last time, let's take a look at something totally new. Take a long moment, and see if you can find anything in the sky that you *didn't* notice last time. **<ding>** Take note of what you've seen in your star journal.

PAUSE

ME: One thing you might notice that has changed is the moon.

DK: You might notice that the moon phase has changed. The moon is a little bit brighter or dimmer - that's making it a little easier or harder to find things. And one thing you'll probably definitely notice is that the weather is probably different each night. Maybe one night was really cloudy and you couldn't really see that much. And another night was very clear.

ME: Do you notice any ways that things are different outside tonight than they were last time? Maybe the moon is bigger, or smaller, or in a different place? Maybe the weather is different tonight? **<ding>** Write down three ways that conditions are different tonight than they were the last time you made an entry in your star journal.

PAUSE



ME: You might remember in Lesson 2 we talked a bit about constellations. In case you don't remember, go back and look at your star journal and notice some constellations you found before.

This time, we're going to talk about a famous constellation called Ursa major. Today, we often call it the Big Dipper because it looks like a ladle or a soup spoon. If it's dark enough where you are, and clear enough in the sky, it's pretty likely you'll be able to find it.

The handle of the spoon is made up of 3 stars, and the scoop is at the bottom. It is a box of 4 stars. In case you have trouble visualizing it, we've included a picture with the resources along with this lesson. Can you find the massive spoon in the sky? **<ding>** If you found Ursa major, or the Big Dipper, mark it down in your star journal.

PAUSE

ME: If you didn't find it, that's perfectly OK! Sometimes whether you can see something in the sky or not depends on lots of things, and most of them you can't control at all. If you didn't find Ursa major, maybe there are some other things you had no trouble seeing. Things like the moon, or other constellations. Take some final notes in your star journal, marking down anything else interesting you notice in the sky tonight. And then, get ready to go back inside.

PAUSE

ME: That just about does it for this lesson. Next time, we'll continue our observations outside, and get back to some of the huge questions we're trying to tackle in this course. Exactly how far away *are* those things you're seeing in the sky? And... how on Earth do we know? See ya next time.