

"MUSIC IN SPACE" ACTIVITY SHEET



Get to know Eleanor Alberga!



A British, Jamaican-born composer, Eleanor Alberga draws from a rich musical background, including her studies as a classical pianist, growing up singing Jamaican folk music, and her experience as an improviser during her years working with the London Contemporary Dance Theater.

Check out her [website](#) and [full biography](#) to learn more!

Eleanor Alberga has written three amazing string quartets!

In this episode of AizuriKids, we explored Eleanor's *String Quartet No. 1*. When writing this piece, Eleanor was inspired by a physics lecture she attended. At this lecture, she learned that everything in our universe is made of the same stuff -- star dust! When we play Eleanor's *String Quartet No. 1*, we feel like we can imagine the swirling and sparkling stars that inspired her.

To watch Eleanor speak about her *String Quartet No. 1*, click [here](#)!

Listen to Eleanor Alberga's string quartets:

[Ensemble Arcadiana performing Eleanor Alberga's *String Quartet No. 1*](#)

[Ensemble Arcadiana performing Eleanor Alberga's *String Quartet No. 2*](#)

[Ensemble Arcadiana performing Eleanor Alberga's *String Quartet No. 3*](#)

Let's use our imagination!

This episode is all about tapping into our imagination when making music. During our Aizuri Quartet rehearsal, we have a lot of fun imagining what Eleanor Alberga's music might be inspired by. Later on, our physicist and composer friends Curtis and Paul help us imagine what outer space might sound like if it made music.

One of our favorite ways to describe music is to compare it to colors!

Music uses so many different kinds of sounds -- just like how there are countless colors in a rainbow. Colors can be bright, dark, light, warm, or cool -- so can music!

Some music is loud, fiery, and intense like the **red of a fire engine**. Other music is soft, calm, and muted like a **cloudy blue sky**.



The next time you listen to your favorite song, think about what color the music reminds you of. The special part about this exercise is that everyone has their own unique sense of imagination. When listening to the same song, one person might think it sounds like a **deep, warm purple color**, someone else might think it sounds like **bright electric blue**. These differences are really special!

Lots of composers look for inspiration outside of music!

It's widely thought that **Joseph Haydn** (1732-1809) was inspired by nature when writing some of his string quartets. These quartets have nicknames that reference the aspects of nature they were likely inspired by.



Haydn's "**Sunrise**" *Quartet* reminds many people of a sunrise, with its rising melody at the opening. [Watch this video of the Guarneri String Quartet playing the piece.](#)

The last movement of Haydn's "**Frog**" *Quartet* sounds like a chorus of croaking frogs! [Listen to a recording of the Tokyo String Quartet playing this movement.](#)

Caroline Shaw's string quartet, *Valencia* is named after Valencia oranges. When writing this piece, she was inspired by the feeling of eating a Valencia orange on a porch during summertime. [Watch the Attacca Quartet perform Valencia.](#)

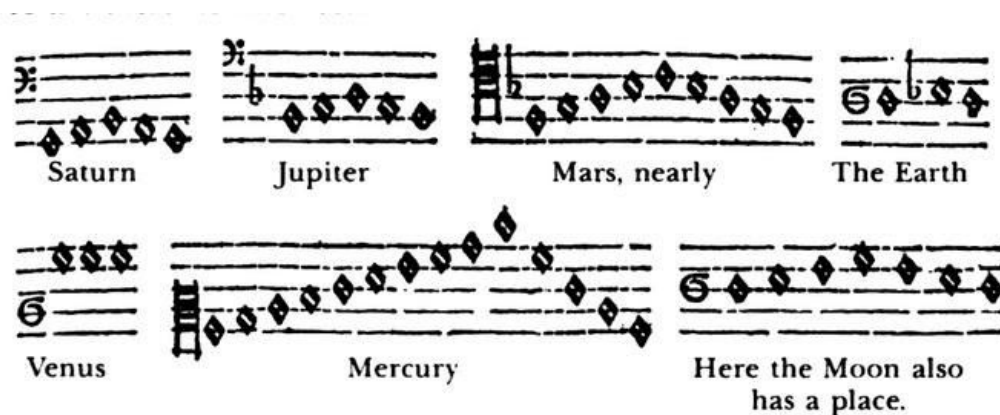
Learn about astronomy and music!

Astronomy is the study of outer space using science, especially physics. Astronomy is related to music in many ways!

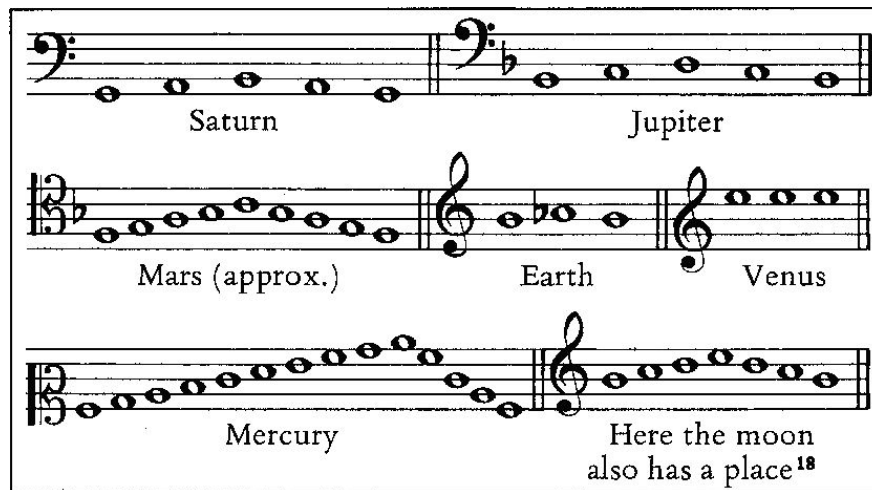
Johannes Kepler



A key figure in astronomy, **Johannes Kepler** (1571-1630) used music to try to understand the orbits of planets. Kepler was a German astronomer who discovered three major laws of planetary motion. In his book, *Harmonices Mundi* (*The Harmony of the World*, 1619), Kepler theorizes that the orbits of planets are governed by the same laws of harmony that structure music. He thought that the proportions of the natural world could be explained in terms of music. Kepler believed that each planet sang its own song, with its own unique "vocal" range. In *Harmonices Mundi*, he even illustrates the range of each planet with collections of notes and scales:



Written in modern musical notation, it might look something like this:



While not all of Kepler's theories were entirely correct, many of them would inspire the work of future astronomers!

Caroline and William Herschel



Caroline and William Herschel were a brother and sister duo who helped invent modern astronomy. Born in Germany, Caroline (1750-1848) and her brother William (1738-1822) were both professional musicians before becoming astronomers. Caroline was a vocalist, and William was a composer and organist who also played the oboe and violin.

When Caroline and William transitioned their interests to astronomy, they spent countless hours building their own telescopes so that they could study the planets and the stars. Their most significant discoveries included the planet Uranus, eight comets, and beginning to record the shape of the galaxy. Their systems for cataloguing and recording data helped create the standard for modern scientific astronomy. Caroline is particularly notable within the field, as she was the first woman to be officially recognized in a scientific position. She was the first woman to be paid for her scientific work, and the first woman to hold a government position in England!

Check out some kid-friendly books on astronomy!

[*Kepler's Witch*, by James A. Connor](#)

[*Icarus at the Edge of Time*, by Brian Greene](#)

[*Black Hole Blues and Other Songs from Outer Space*, by Janna Levin](#)

[*Caroline's Comets*, by Emily Arnold McCully](#)

[*Johannes Kepler: Giant of Faith and Science*, by John Hudson Tiner, ed. Norma Cournow Camp, illustrated by Rod Burke](#)

[*The Quiet Revolution of Caroline Herschel*, by Emily Winterburn](#)

Bibliographical information:

Special thanks from the Aizuri Quartet to Curtis Asplund and Paul Wiancko for all of their help and knowledge on astronomy and music!

Reference links for Johannes Kepler:

["Harmonices Mundi," Wikipedia](#)

["Johannes Kepler Theorized That Each Planet Sings a Song..." by Colin Marshall](#)

["Johannes Kepler," by Robert S. Westman for Britannica](#)

["Johannes Kepler and the Song of the Earth," Irish Times](#)

["Johannes Kepler," Wikipedia](#)

["Kepler and Kircher on the Harmony of the Spheres", by Joscelyn Godwin](#)

Reference links for Caroline and William Herschel:

["Caroline Herschel Biography," by Nola Taylor Redd](#)

["Caroline Herschel," Britannica](#)

["Caroline and William Herschel: Revealing the invisible," The European Space Agency](#)

["Caroline Herschel," Wikipedia](#)

["William Herschel Biography," by Nola Taylor Redd](#)

["William Herschel," Wikipedia](#)