

PROGRAM NOTES

Opening the concert this evening, VOX is excited to welcome the Granada Hills Charter High School Concert Choir. Their program brings together three contemporary works that explore sound as a living, breathing force—by turns meditative, evocative, and exuberant.

“Be Like the Bird” by Abbie Betinis is a powerful meditation inspired by a short poem by Victor Hugo, examining themes of trust and perseverance. This simple canon creates a sense of stillness and reassurance, inviting the listeners into a moment of quiet reflection. In *Evocation*, Hye-Young Cho crafts a sound world that feels both ancient and immediate. Rather than following a linear narrative, the music unfolds as a series of sonic impressions, emphasizing color, texture, and resonance, and drawing the listener into an introspective space shaped by memory and imagination. Playful, bold, and rhythmically charged, *Jam* brings an infectious sense of momentum to the program. Tracy Wong’s writing embraces groove, repetition, and energetic interaction, blurring the lines between composed music and spontaneous play. Interlocking patterns and lively grooves create a dynamic conversation full of surprise and celebrates collaboration and joy in music-making.

VOX joins the GHC Concert choir for Elaine Hagenberg’s “Measure Me, Sky!” originally commissioned by the Nashville School of the Arts for the 2023 National American Choral Directors Association Conference. The text comes from a poem by poet and violinist Leonora Speyer (1872-1956) that is full of words that illustrate the embodiment of flight: “Sky, be my depth/Wind, be my width and my height.” Hagenberg paints these words with expansive triplet phrases that are extended through deft hand-offs between higher and lower voices. This energy is matched with triplet figures in the piano that drive the rhythmic charge and soar alongside, creating an uplifting close to this part of the program.

CREATION – IN HONOR OF CECILIA PAYNE

Cecilia Payne-Gaposchkin (May 10, 1900 – December 7, 1979), to whom this work is dedicated, was born in England, where she studied physics and chemistry at Newnham College in Cambridge University. She became interested in astronomy in 1919 after hearing Sir Arthur Eddington speak about his 1919 expedition to observe the solar eclipse, where he was able to test Einstein’s Theory of General Relativity. Although she completed her studies, she was unable to obtain her degree, as Cambridge did not award degrees to women until 1948. The only career option available to her in England was to become a teacher, so she began to search for fellowships that would allow her to study in the United States. In 1923, she received one to study at Harvard University. In 1925 she earned her doctorate, becoming the first woman in the United States to receive a PhD in astronomy.

For her dissertation, Payne was able to use new advances in atomic physics to determine both the temperature and chemical abundance of stars based solely on their spectrum, showing that stars are over 90% hydrogen and the other 10% is primarily helium. This was in direct contrast to the prevailing theory of the time that the composition of the stars was nearly identical to that of the Earth, which consists primarily of heavier elements. Her results were so shocking that she was told to downplay them by other astronomers, including one of her committee members, Henry Norris Russell. To accommodate him, she included a statement in her dissertation that her results were “almost certainly not real.” Four years later, Russell came to the same conclusion using a different method, and while he briefly credit Payne for her work, he received most of the credit for the discovery. It is only recently that Payne has received the credit that she deserves for this groundbreaking work. Nearly 40 years after she wrote her dissertation, astronomer Otto Struve called it “the most brilliant PhD thesis ever written in astronomy.” Today, 100 years after she wrote it, that statement still stands.

Similarly to Cecilia Payne, Vera Rubin (July 23, 1928 – December 25, 2016) was a pioneer for women in astronomy. While not the first person to postulate the presence dark matter, Rubin’s observations systematically verified its existence. Her observations defied the standard expectation, suggesting that there was significantly more mass outside the center of galaxies than was visible. Because we cannot observe this extra mass using any standard observational techniques, astronomers call this mass “dark matter.” Trying to determine what, exactly, dark matter is, is an area of active research, and we are no closer to understanding it today than we were at the time of Rubin’s observations. Although this discovery upended the standard paradigm of astronomy and physics, Rubin was continually overlooked by the Nobel Committee. Only five women have been awarded the Nobel Prize in physics in the history of the prize, and prizes are not awarded posthumously. However, her accomplishments have been recognized today through her inclusion in the American Women Quarters Program. She also has an observatory named after her.

Both Cecilia Payne and Vera Rubin made ground-breaking discoveries in the face of systemic sexism. Although their discoveries revolutionized the field, they were denied proper credit until much later. Today, we recognize them for the luminaries of the field that they are.