

# The representation of Blackness in Astronomy

The Black In Astro Community formed through a need for support and community among predominantly early-career Black people working in astronomy. In just two years, Black In Astro has grown to have members across the globe. Its founder and organizers explain how it came about.

## ■ What led you to form Black In Astro, and what are its goals/aims?

**Ashley Walker, PhD Student:** After a series of police and racially motivated violence against Black people in the United States, I founded Black In Astro (BIA) (Fig. 1) in June 2020, with the primary goals of providing community, support and scholarship to Black astronomers. In addition to these goals, we also want to continue celebrating Blackness within space-related fields and to reconnect with the origins of our ancestors, who often used the stars for guidance, freedom, farming and storytelling.

The beginnings were before then; I remember feeling excited, nervous and happy in an auditorium filled with people taking pictures at the Hidden Figures event in winter 2017 at the DuSable Museum in my hometown of Chicago. A whirlwind of emotions came over me as Dr Jedidah Isler gave me the biggest hug she could find as we posed for a photo. In the weeks leading up to the event, I had been dealing with a traumatic experience and I received support from Isler and encouragement to keep going. It was the communal support and advocacy of Black astronomers that kept me in my field: I was preparing for a summer internship in Astrochemistry at Harvard University at the time. Oftentimes, we are unappreciated, overworked and underpaid for the services that we provide to the world of astronomy. Especially when we see the potential, beauty and creativity that the minds of Black people possess.

On another occasion, in the summer of that year, Dr Nia Imara assisted in my understanding of star- and planet-forming regions through her creativity. She uses her artistry to not only align the stars but also to describe her advocacy and passion for Black people. Dr Imara continues to inspire me to continue to take a stand for underserved groups while Dr Jarita Holbrook and Dr Lynnae Quick push me to be the best version of myself as an astrochemistry and planetary science researcher.

Black people have been historically excluded from the space community through racism, homophobia and sexism. Currently, there are only 23 Black women who have obtained PhDs in Astronomy



**Fig. 1 | Black In Astro.** Top row, from left to right: Ashley Walker (President), Howard University; Caprice Phillips (Vice President), Ohio State University; Dr Ronald S. Gamble, Jr (Vice President), NASA GSFC/University of Maryland-College Park. Bottom row, from left to right: Bryné Hadnott, MSc (Communications Officer), Stanford University; Cheyenne Polius, MSc (Social Media Coordinator), St. Lucia National Astronomy Association; KeShawn Ivory, MSc (Events Coordinator), Vanderbilt University. Credit: photography by Nathan Morgan (bottom right).

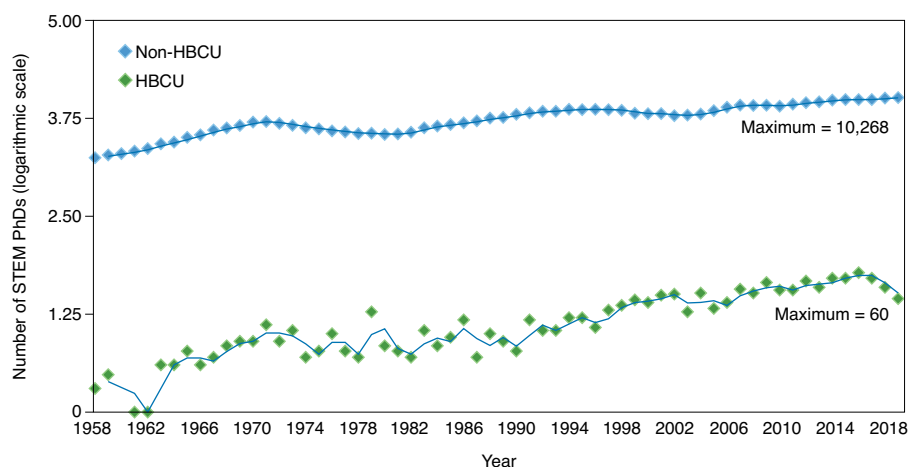
and about 15 Black women with PhDs in Planetary Science within the United States. In 2014, there were a total of 40 Black astronomers with PhDs in the United States and, as of 2020, there are only 28 Black people with PhDs in planetary science. The global impact of racism has brought Black astronomers, educators, engineers and space enthusiasts alike together as we continue to provide opportunities for each other. One of our long-term goals is to continue to become a staple within the community and have an annual conference to offer support, opportunities and resources.

## ■ What is it like to be a Black person in astronomy?

**Bryné Hadnott, MSc:** To tears and applause, Dr Jamila Pegues successfully defended her thesis on protoplanetary disks to a

virtually crowded Zoom room of dozens of people, becoming the first Black woman to graduate with a doctorate from Harvard University's astronomy department in its almost 200-year history, and 96 years since the first woman's, Dr Cecilia Payne's, defence. Pegues's defence was a momentous event not only for Harvard but also for Black representation in astronomy. More than 150 students in the United States earn doctorates in astronomy every year (2019 figure). In 2021, the total number of Black women in the United States who have ever earned a doctorate in astronomy crept towards 23. Pegues was number 21.

The American Institute of Physics Task Force to Elevate African American Representation in Undergraduate Physics and Astronomy (TEAM-UP) undertook a year-long intensive examination of the



**Fig. 2 | Non-HBCU versus HBCU STEM PhDs 1958–2019.** Data are taken from the National Center for Science and Engineering Statistics Survey of Earned Doctorates (National Science Foundation, 2019) available at <https://www.nsf.gov/statistics/srvydoctorates/#tabs-1>.

factors that cause systemic underrepresentation of Black students in both physics and astronomy. The task force identified five key factors responsible for Black students' retention in physics and astronomy programmes: belonging, physics identity, academic support, personal support, and negative effects from leadership and department structures. In short, unsupportive environments and financial hardships erode Black students' sense of inclusion within the astronomy community, leading many talented students to leave for fields that offer more support.

Lauren Chambers — a gifted researcher who graduated magna cum laude from Yale in both astronomy and African American studies — wrote a moving piece in 2020 titled 'A breakup letter with astronomy, from a young Black woman' about her decision to leave astronomy for a career in data justice. Over the past year, several other Black students in astronomy have written about their experiences in the field for the *Black In Astro* series featured in *Astrobit*. The common thread? Alienation. Isolation. Othering. Community-driven organizations such as BIA provide a place of refuge from the academic departments that, more often than not, are actively, hostilely pushing us out.

During BIA Week 2021, I wrote a piece for the American Astronomical Society Women in Astronomy blog about the performances from the first day. *KeShawn Ivory* sang a soulful a cappella version of SZA's 'Good Days'. Poet JoAnn C. Roberts, also known as *Paradigm*, shared verses from her book, *Continuum*. *India Jackson* explored the world of Blerd (that's Black and nerd) culture through her software

and gaming company, *Let's Get PHYSICAL, LLC*. The mood was uplifting, joyous and, above all, holy. Incredibly, over a Zoom meeting on a hot June day, BIA created a true celebration of Black astronomers from across the diaspora. And a moment, finally, for all of us to breathe and be our whole, authentic, astronomy-loving selves.

**Dr Ronald S. Gamble, Jr:** Over the past decade in my career, I have faced numerous instances of racism, prejudice and discrimination for being an Afro-Latino in a field that does not respect diversity in its truest form. I have been told to change my major to "something easier, and more appropriate, like engineering" and that I should "choose a career that your [people] are in". I have been told that my degree doesn't count because I graduated from a historically Black college/university (HBCU) and that "your people don't study things like black holes". BIA provides a supportive community of like-minded, inclusive and [colourful] scientists that work cohesively for the equitable advancement of the field. Since 1958, 0.31% of all science, technology, engineering and mathematics (STEM) doctorate degrees have been awarded at HBCUs (Fig. 2). A more startling statistic that is about 1% of all physics/astronomy doctorates in the past 25 years were awarded to Black graduates.

A question that always resonates and reverberates in diversity conversations is: 'where are all the Black faculty members?'. According to the American Institute of Physics on the disparities of African-Americans in physics and astronomy, approximately 9.3% of all PhD-granting physics/astronomy

departments employ at least one African-American faculty member. There is not a single standalone astronomy department at an HBCU. I have always had a passion for teaching and mentoring students in physics and astronomy because we are not always welcomed by some of our peers in those spaces.

**Caprice Phillips, PhD candidate:** Being a Black person in astronomy and particularly a Black woman has been a very difficult experience for me. As an undergraduate, I often felt isolated and it was hard for me to not see folks that looked like me doing something I was interested in. It was not until 2016 that I saw and took a class with another Black woman in astronomy. I was so stoked because I had never seen another Black person in astronomy before! It gave me hope that I had a place in this space.

Another aspect of being a Black person in astronomy is the constant aspects of microaggressions and racism that I have had to endure. As an undergraduate, I was constantly harassed and microaggressed by my peers and professors. Even the most 'well meaning' professors would tell me that I was going to get into grad school somewhere because they need Black students in these spaces. Going into grad school at my first institution, I faced many obstacles and hurdles. At my first institution, I was pushed out/mastered out of the PhD programme after the qualification process and had to continue my studies at my current institution. When I was pushed out, it took a lot of strength for me to keep going because I really wanted to quit, but I knew that I wanted to get my PhD and continue on. I spent a lot of time feeling like I had failed, but it has taken me years to realize that I was failed by the folks there.

I think BIA came along at the right time for me because it has been great to find community and support. It is so important to have spaces and communities that I can lean on and learn from.

### ■ What is it like to be a part of a community supporting Blackness?

**KeShawn Ivory, MSc:** With regards to BIA, it was of course refreshing to see that there are plenty of Black folks out there who are interested in the types of scientific question that interest me. I knew before I even started undergrad that there wouldn't be very many other Black students in the physics and astronomy department at my school. Sure enough, I was the only one in my matriculation year. By then, I was used to it given the demographics of my classes growing up, and as I said, I knew to expect it, but that doesn't change the fact

that it was not ideal. It was difficult not to feel at least somewhat disheartened when I would tell fellow Black undergrads what my major was, only to have them say “Wow! I could never” or “Whoa! Couldn’t be me!”. I wanted them to know that they absolutely could do astronomy if they had wanted to, and, moreover, far too many Black kids are running around thinking they can’t do it either. So naturally, it was invigorating to see that so many of us refused to believe that we lacked the aptitude to pursue astrophysics and other space science fields, no matter what picture society paints.

When Ashley Walker, a dear friend I had made from a summer internship and the founder of BIA, asked (or kind of told!) me to join the leadership team of BIA, I instantly agreed. During one of our team meetings, I fully understood the impact of having people you can relate to in your field. The cultural references. The dialect. The fashion. The music. Everything we are exposed to as people forms a social and cultural landscape in which our lives are situated, and working on astronomy issues with people positioned in similar landscapes was incomparable. The vision of astronomy, and really any pursuit, that I have is one in which everyone gets to solve their field’s problems alongside people both inside and outside their landscape.

**Ronald:** From the perspective of an early-career astrophysicist, finding BIA on social media was like an awakening I didn’t know I needed. I was both impressed by what they had accomplished and concerned for its growth. It was just the wake-up call I needed to remind myself of my own capabilities and how much of an anomaly Black astronomers and astrophysicists are in the world of STEM. As an alumnus of North Carolina Agricultural and Technical State University, an HBCU, the BIA Week 2020 reignited a burning desire to do whatever I can to contribute to the diversification of the field of astronomy and astrophysics.

Last year’s BIA Week 2021 was phenomenal. It was a full immersion into the blended culture of scientific research and societal impacts of African-American astronomers and astrophysicists and where we stand as a thriving community of influential scientists. The week provided me with the opportunity to reach out to a group

of people that I had been in search of for the majority of my career. After connecting with the founder of BIA (Ashley Walker), and using my platform as an early-career astrophysicist and researching faculty member, there is now a more galvanizing mission for my career. That is to improve the diversification of the field of astronomy and astrophysics ‘by any means necessary’.

**Cheyenne Polius, MSc:** I didn’t realize just how isolating my university experience was until I met other BIA folks during BIA Week 2020. That week was like the big meet and greet that BIA folks wanted but did not realize how much they needed. Black people in the field connected with people oceans apart and found that there was a community who looked just like them. We felt seen. What seemed like a simple Twitter hashtag to some was the beginning of a vital movement to show the world that we exist and to support our community in the ways that matter. Founder Ashley Walker built a team from across the world to double down and make BIA week have even more reach and a bigger impact in 2021.

I was the only Black woman in my year and I believe my experience in academia could have been so much better if I found a community like this sooner. Academia can be a great place to network and form connections with people from different cultures and ethnicities but having people you can relate to is unmatched. Seeing people who look like you in the spaces you occupy or the spaces you want to be in can give you the confidence you need to reach your full potential. This is what the BIA community has done for me. The people I’ve met, and those I currently work with to organize the Week, give me a feeling that I can accomplish anything in this space. I also know that I will have never-ending support and they will do their best to help me get the resources I need for whatever I decide to do next. And that’s what BIA is all about — supporting our peers to start and to be able to continue their journey against all the odds.

#### ■ Aside from BIA Week, what kind of activities does BIA organize?

**Caprice:** Following the establishment of the group, I wrote a grant proposal with Dr Laura Lopez to be able to support

ongoing programmes for BIA through The Ohio State University. I wanted to help create supportive spaces and skill-building activities for members of the BIA community, and I am really excited about the programmes we planned. We’ve had a BIA-themed research competition for undergraduates and this was judged by BIA graduate students to help develop and learn ways to assess the ways that science is communicated. Along with this, the grant is going to allow us to fund four mini-scholarships for BIA students to attend upcoming astronomy conferences.

#### ■ What comes next for BIA?

**Ashley:** In BIA Week 2022 (to be known as Black Space Week), we’re focussing on the science that is produced by Black people within the space field, space economy, planetary protection and exploration, space law and policy, and so on. Noticeably, we’re often left out of this conversation even though some of our most prominent Black space members have contributed to space exploration. We want to showcase that we need to be involved in these conversations.

**Caprice:** ‘For Us by Us’: this past fall we had our first undergraduate research competition and it was a great way for undergraduates to showcase the research they are working on and to be recognized for their efforts. I would love to turn this into an annual event either over Zoom or even a research symposium in person some day! For part of BIA Week, I would love to see us continue this tradition by having a graduate-student research competition that is judged by BIA postdoctoral researchers. I think it’s excellent practice for everyone involved. Another thing that I think would be great to do is to have a BIA postdoctoral panel to help give advice and share their experiences with graduate students too!

To connect with Black In Astro, visit [www.blackinastro.com](http://www.blackinastro.com).

Interviewed by Paul Woods and Ashley Walker 

Published online: 13 June 2022  
<https://doi.org/10.1038/s41550-022-01704-0>