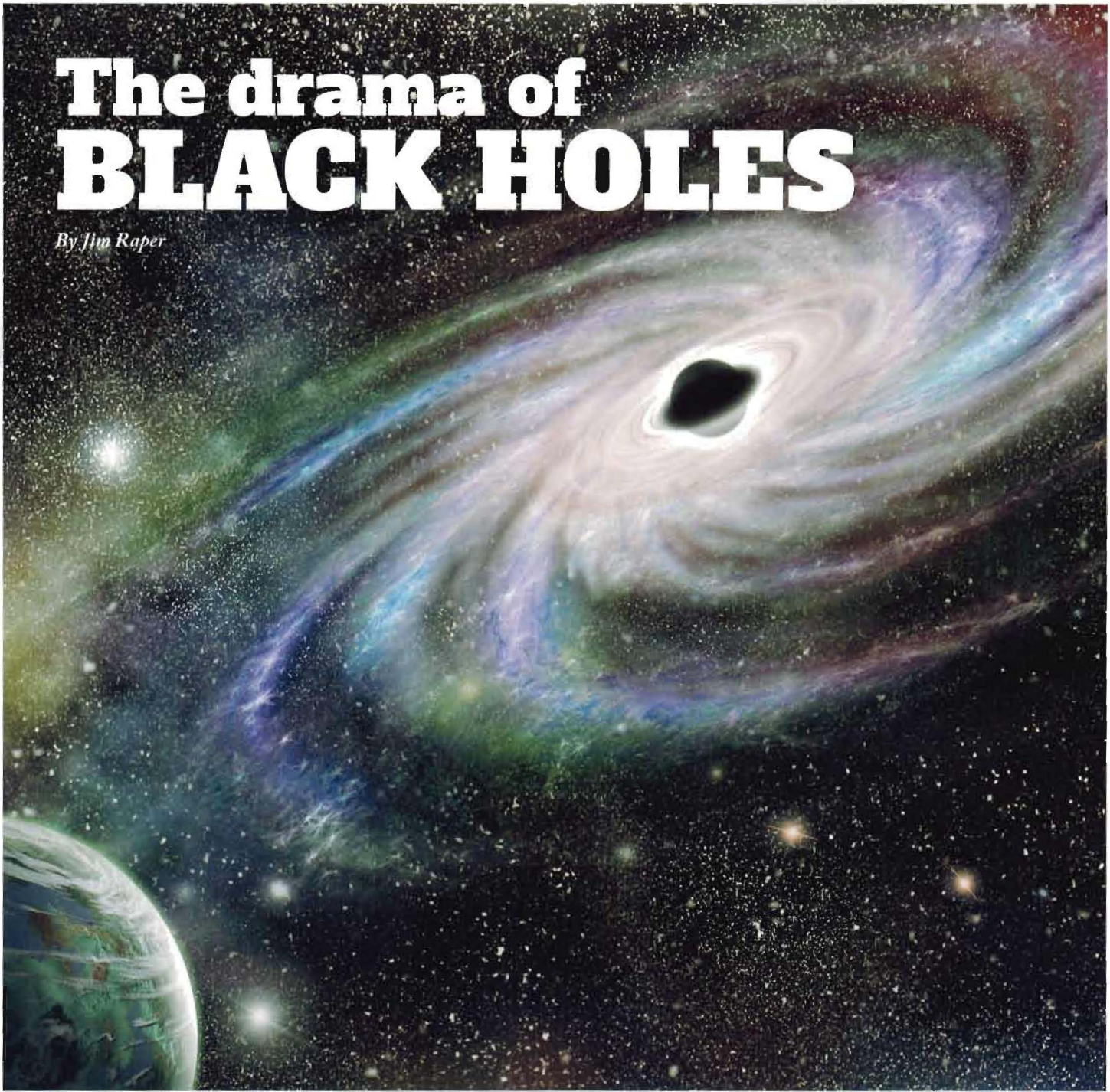


The drama of **BLACK HOLES**

By Jim Raper



Bartusiak on TV's "Big Bang Theory": "Fun, but it presents scientists as savants and nerds, as socially inept. Actually, most scientists I know are Renaissance people."



WHAT'S A BLACK HOLE?

Scientists believe a black hole results from a star collapsing inward upon itself, creating a greatly reduced mass with almost indescribably strong gravity – so strong that neither matter nor light can escape.

“THE BEST AND MOST MEMORABLE WRITING TELLS A COMPELLING STORY, AND SCIENCE WRITING IS NO EXCEPTION.” — MARCIA BARTUSIAK



Suspense is a genre few science writers can claim. But Marcia Bartusiak (M.S. '79), who has mined astronomy and cosmology for seven books, has done a “Big Bang” of a job keeping readers on the edge of their seats.

Can Einstein’s general theory of relativity and minuscule quakes in space-time (known as gravitational waves) really be the stuff of page-turners? Absolutely.

“The best and most memorable writing tells a compelling story, and science writing is no exception,” Bartusiak says. “That’s what I always tell my students - find the narrative as you carry out your research.”

Readers of her seventh book, “Einstein’s Unfinished Symphony: The Story of a Gambler, 2 Black Holes and a New Age of Astronomy,” coming out this summer, will be treated to the exciting climax of a nonfiction story she first began telling nearly two decades ago.

In her early work life, Bartusiak’s career trajectory produced its own suspense.

How did someone who focused on liberal arts at American University circle back to a childhood interest in astronomy? This is where Old Dominion University enters the story.

In 1971, Bartusiak was a newly capped honors grad in communication when she talked her way—without a minute of TV news experience—into a job as the first female reporter at WVEC Channel 13. She found her niche in reporting about space exploration. “I remember covering a story at NASA Langley Research Center and I thought, ‘If I could do this 24/7, I would be in heaven.’”

The reporting took her back to age 7, when she had begun studying the heavens with her father, a Naval Reserve pilot and quality control engineer. But if science journalism was a career she wanted, there was a roadblock: Her undergrad studies

had all but bypassed the sciences.

Cue ODU. While still at WVEC, she began night classes in the sciences. Lee Kernell, now an emeritus professor of physics, encouraged her to go full throttle and pursue a master’s degree.

Kernell remembers her distinctly: “Her Physics 111-112 performance was so outstanding that the following year the Physics Department offered her a teaching assistantship. One year later she joined Dr. Jacob Becher and me in performing research funded by the NASA Hubble Telescope project.”

Bartusiak (pronounced Bar-TOO-shack) received her master’s in physics in 1979. In one of her math classes as a graduate student, she met Steve Lowe ’79, and they married a few years later. They live outside Boston, where she teaches science writing at the Massachusetts Institute of Technology.

After ODU, Bartusiak won a job at Discover magazine. She has since written articles in periodicals such as The Washington Post and National Geographic, but her books have brought her the most recognition.

“Thursday’s Universe” (1986), a layman’s guide to the frontiers of astrophysics and cosmology, came first and was an immediate hit, landing a notable book designation from The New York Times.

Her upcoming book updates her third, “Einstein’s Unfinished Symphony: Listening to the Sounds of Space” (2000). It ramped up the suspense about the gravitational waves, which, if detected, would fulfill the last remaining prediction of Einstein’s theory of general relativity.

Bartusiak was there in the late ’90s when the Laser Interferometer Gravitational-Wave Observatory (LIGO) was being built in Livingston, La. Her first “Unfinished Symphony” explained how the observatory’s 2.5-mile-long

arms, positioned in an L-shape, and the laser beams running through them were designed to capture gravitational waves emitted by the most violent events in the universe.

Scientists expected one of the first intercepts to result from the collision of two black holes – that is, if black holes existed. Astrophysicists theorized that a wave from a black hole apocalypse would sound like a “chirp” by the time it got to Earth.

The LIGO experiment began in 2000, and Bartusiak began a long wait for good news. She kept writing.

“Black Hole: How an Idea Abandoned by Newtonians, Hated by Einstein, and Gambled on by Hawking Became Loved” appeared in 2015, revisiting LIGO. Adam Riess, a Nobel laureate in physics, called it “an engrossing and mind-bending read,” and the book was a semi-finalist for the PEN/E.O. Wilson Literary Science Writing Award.

Only a few months after “Black Hole” was published, LIGO received two signals from the collisions of black holes, proving their existence. One “chirp” came from a black hole collision more than a billion years ago that gave off energy equivalent to a billion trillion suns. All the years and miles later, the wave was only four one-thousandths of the diameter of a proton.

The New York Times highlighted the news. “We are all over the moon and back,” one awestruck scientist said.

“This is only the first few notes of all the music we are going to hear” from LIGO, Bartusiak says. Her new book will provide the details.

Jim Raper, former editor of Monarch magazine, has written extensively about scientific research at ODU. He salutes Marcia Bartusiak’s contributions to science writing.