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The John F. Kennedy
Performing Arts Ma

March–
April 2025

SPECIAL FESTIVAL PREVIEW

EARTH to SPACE

ARTS BREAKING THE SKY

WOMEN REWRITING THE SCORE

WORKING IN THE WINGS

SPECIAL FESTIVAL PREVIEW

EARTH to SPACE
ARTS BREAKING THE SKY

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MARCH 28–APRIL 20, 2025

SPECIAL FESTIVAL PARTNER
STARMUS

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Kennedy Center International Committee on the Arts

Justin Sutcliffe

The Moonwalkers: A Journey with Tom Hanks

This spring, artists and scientists look up to discover new possibilities.

BY NATHAN PUGH

SPACE IS HAVING A MOMENT. Within the next few years, the National Aeronautics and Space Administration (NASA) will launch its Artemis II program, bringing astronauts to the Moon for the first time since the Apollo 17 mission in 1972. NASA says the Artemis mission will energize the lunar program, establishing a long-term presence there for subsequent generations and creating scientific discoveries and economic opportunity. Plus, it will be groundbreaking: For the first time, a woman (astronaut Christina Koch) and a person of color (astronaut Victor J. Glover) will set foot on the Moon.

If you can't travel the 238,555 miles to the Moon's surface, visit the Kennedy Center for some moments of awe a little closer to home. **EARTH to SPACE: *Arts Breaking the Sky*** (March 28 through April 20) will explore how the next generation might face the dangers and opportunities presented by future space travel. By putting scientists and artists in direct conversation during the festival, the Kennedy Center will spark exciting collaborations and give audiences new ways to interact with the mysteries of the cosmos.

EARTH to SPACE is conceived as part of the Kennedy Center's 10-year commitment to raising public awareness and interest in finding climate solutions for our planet. Following the previous *RiverRun* and REACH *to* FOREST festivals, upcoming international festivals will include *ICEBOUND: Art at the Edges* in 2026, *Movement and Energy* in 2027, and *Making Peace with Nature* in 2029.

Curators Alicia Adams, vice president of international programming, and Gilda Almeida, director of international programming, share the conviction that insights into the marvels of the universe can inspire action to protect our own planet. They are also excited to share with festival visitors the many ways that the arts can stimulate fresh thinking about the challenges that confront us.

STARMUS

For the first time in the U.S., in a special partnership with EARTH to SPACE, the renowned global festival **STARMUS** comes to Washington to unite the world's most brilliant minds in science communication and art. Founded by **Brian May** (astrophysicist and lead guitarist of Queen) and **Garik Israelian** (astrophysicist at the Institute of Astrophysics of the Canary Islands), STARMUS has presented extraordinary events around the world at the intersection of curiosity, creativity, and discovery.

To celebrate the launch of EARTH to SPACE and STARMUS, a special event will be presented on April 1 in the Eisenhower Theater. Enjoy speakers from STARMUS—including astronaut Colonel **Chris Hadfield**, National Academy of Sciences President **Marcia McNutt**, and astrophysicist **Garik Israelian**—and the **STARMUS All Stars** band featuring members **"Vinny" Appice**, **Tony Franklin**, **Derek Sherinian**, and **Ron "Bumblefoot" Thal**. Plus don't miss "quantum mind reader" **David Zambuka**, the Kennedy Center's Youth Ambassador for the Arts & Environment **Aneeshwar Kunchala**, and **Debbie Allen** with a special dance performance by the **Debbie Allen Dance Academy** based on a poem written by her mother Vivian Ayers Allen, who was a "Hidden Figure" at NASA.

In addition, STARMUS will present two panels with esteemed speakers. On April 1, ***Cosmic Beginnings and Mysteries*** features Nobel Laureate **Jack Szostak**, best-selling author **Mario Livio**, Nobel Laureate **Kip Thorne**, and artist **Lia Halloran**, followed by the U.S. premiere of the STARMUS documentary ***The Island of the Stars***, featuring Neil Armstrong, Stephen Hawking, and other legendary scientists, astronauts, and musicians.

On April 2, ***From Earth to the Stars*** is a unique opportunity to hear from best-selling author, musician, and astronaut Colonel **Chris Hadfield**, who has flown three space missions, was the first Canadian to walk in space, and whose video of David Bowie's "Space Oddity," recorded on the International Space Station (ISS), has been viewed by over 75 million people; and astronaut **Nicole Stott**, who spent over three months on the ISS and was the first person to paint with watercolors in space.

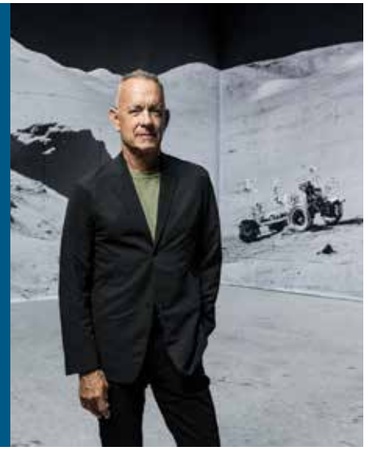
The finale will be the exciting premiere of the **STARMUS VI Film.** The film showcases the most exciting moments of 2022's STARMUS Festival in Armenia, including inspiring talks and musical performances from notable figures such as **Brian May**, musician and astrophysicist; **Tony Fadell**, inventor of the iPod; **Charlie Duke**, Apollo 16 moonwalker; **Kip Thorne**, Nobel Laureate physicist; **Emmanuelle Charpentier**, co-inventor of CRISPR gene-editing technology, **Rick Wakeman**, legendary keyboardist; and more.

STARMUS will inspire the next generation of explorers and innovators—empowering minds to dream beyond the stars.

Colonel Chris Hadfield

THE MOONWALKERS: A JOURNEY WITH TOM HANKS

Through voiceover, **Tom Hanks** narrates an immersive experience that tells the stories of the Apollo missions in intimate detail. Surrounded by high definition, restored footage of the Moon walks, you'll feel you are right there on the lunar surface with them! The U.S. premiere of this 360-degree film in Studio K is perfect for audiences of all ages (see page 23 for more information).



Justin Sutcliffe

Inspiring Storytellers

From playwrights to choreographers to actors, so many artists have looked up to the stars for inspiration for their artwork. With EARTH to SPACE, the Kennedy Center is proud to present thrilling premieres that engage with themes of space travel and connection.

The festival provides a unique opportunity for artists to share fascinating solo work. Want to change your perception so it feels like you're actually on the Moon? "Quantum mind reader" **David Zambuka** recreates Neil Armstrong's first steps with the U.S. premiere of his entertaining show ***To the Moon and Back!*** (Apr. 3 & 4).

Ghanian poet and playwright **Chief Moomen** takes audiences through time, place, and space with West African griot traditions and contemporary styles in his show ***On the Precipice of Perception*** (Apr. 5).

Award-winning physicist and writer **Brian Greene** explores everything from the Big Bang to the distant future in the world premiere of his dramatic, multimedia show ***Starry Night: A Voyage Across Space and Time*** (Apr. 9–12) featuring awe-inspiring imagery created in collaboration with World Science Festival.

The vast movements of space also provide inspiration for choreography. **Mark Morris Dance Company** returns for the first time since 2022 with the world premiere of ***MOON*** (Apr. 4 & 5), a new dance work co-commissioned by the Kennedy Center. The legendary choreographer combines textual and musical inspirations to try to understand humanity's obsession with the Moon (see page 20 for an in-depth look at the development of this piece).

Norway's groundbreaking contemporary choreographer **Alan Lucien Øyen** explores how we connect with nature in the U.S. premiere of ***Still Life***, performed by his company **winter guests** (Apr. 9 & 10).

Kennedy Center favorite **Malavika Sarukkai** returns with ***Beeja - Earth Seed*** (Apr. 10–12), a new dance piece combining poetry, percussion, and the traditional Indian bharatanatyam dance style.

Plus, world-renowned choreographer **Akram Khan** brings his new work ***GIGENIS, The generation of the Earth*** (April 17-19), which boldly stages Greek mythology, ancient legends, and even family memories (see page 31).

Brian Greene in *Starry Night: A Voyage Across Space and Time*

Moon Rock Club

For EARTH to SPACE, the River Pavilion at the REACH will be transformed into the **Moon Rock Club**, an intimate cabaret space for enlightening talks, entertaining performances, and engaging conversations over drinks.

Vickie Kloeris, who worked in NASA's space food systems for 34 years, leads an engaging exploration into the fascinating world of space food followed by a unique space station–inspired drink tasting (Apr. 2). Violinist and Kennedy Center artistic director of Fortas Chamber Music **Jennifer Koh** will present a special program (Apr. 5). Emerati composer **Ihab Darwish** invites audiences to experience the immensity and wonder of the great unknown in ***Galactic Hope***, a captivating symphonic composition that draws deeply from the UAE's visionary space endeavors (Apr. 9). **Margaret Leng Tan**, the "diva of avant-garde pianism," performs modern works in a chillingly persuasive commentary on the untrammeled fury of nature unleashed by civilization's relentless, wanton defilement of the planet in ***AND NO BIRDS SING: A Requiem for the Earth*** (Apr. 10). Danish pianist and composer **Nikolaj Hess** creates trance-like grooves and weightless soundscapes with his trio **Spacelab** (Apr. 11). The **José André Quartet** combines jazz and Latin American elements to inspire the sounds of Earth and space (Apr. 12). Other evenings will feature an artist meet and greet, DJs, and more.

winter guests in *Still Life*

MORE EVENTS TO BE ANNOUNCED!

Visit tkc.co/E2S for the latest exciting additions, including extraordinary guest speakers, installations, culinary events, family programming, and more.

In-Person Discoveries

EARTH to SPACE doesn't just talk about game-changing astronauts and artists—it also gives you the opportunity to see them in person.

Multiple panels will share stories about working within space travel. The Embassy of Monaco presents ***Monaco's Leap to the Stars: Integrating High-Tech Innovations, Astronaut Perspectives, and Lunar Exploration*** (Mar. 29). Led by former associate administrator of NASA Robert "Bob" Cabana, the discussion explores how cutting-edge innovation, international collaboration on lunar exploration and commercial space travel, and geoscience can contribute to a more sustainable planet Earth. Panelists include former NASA administrator and astronaut Senator Bill Nelson, Commander Michael Lopez-Alegria, Jarret Matthews, and Dr. Ellen Stofan. Visitors can also get a close-up look at and pose for a photo with the **Astrolab Lunar FLEX Rover** (Mar. 28–Apr. 1), designed for uncrewed cargo delivery and crewed lunar exploration.

Did you know there is a (very tiny) art gallery on the Moon? The panel ***First Art on the Moon*** reveals how in 1969 sculptor Forrest Myles orchestrated the transportation of works by six contemporary artists to the lunar surface (Apr. 3).

Hear from **Dr. Barbara Cohen**, a planetary scientist at NASA Goddard Space Flight Center who has been a member of the science teams operating the Mars rovers Spirit, Opportunity, Curiosity, and Perseverance (Apr. 5).

Two events highlight the contributions of women of color in space travel. The ***Hidden Figures*** **Brunch**, hosted by former NASA administrator and astronaut **Charles Bolden**, honors the African American women who were essential to the success of early spaceflight (Apr. 6). ***The Artemis Generation: Exploring the Moon Then & Now*** discusses the history of Moon travel alongside the NASA graphic novel *First Woman* to highlight all of the new ways the space agency is going back to the Moon with more partners than ever before (Apr. 12).

Walking through Galaxies

If the idea of space travel seems abstract, don't worry—talented visual artists are finding ways to bring galaxies down to Earth in exhibitions and installations on view for the first two weeks.

Within the Kennedy Center Halls, you'll find artists from across the globe reinterpreting cultural objects in new ways. In the Hall of Nations, Indian artist **Jitish Kallat** has created ***Covering Letter*** (***Terranum Nuncius***), an installation of sounds and images inspired by the 116 files sent into space on the 1977 "Golden Record" to communicate Earth's culture to extraterrestrials. Today, *Covering Letter* seeks to understand how we form a vocabulary when speaking to the unknown.

Over in the Hall of States are three fascinating exhibitions by female artists. ***The Next Giant Leap: Lunar Quilts*** features two quilts composed of winning blocks designed by students and professional quilters from all 50 states and assembled into quilts by American astronaut and textile artist **Karen Nyberg**. Also on view is ***Celebrating Women in Space History***, featuring two of Nyberg's portraits of pioneer female astronauts. Spacesuit designer and textile artist **Anurita Chandola** imagines how future astronauts will share memories and culture in ***Astro Anurita's Space Suits***, creating colorful clothing that honors her British-Indian heritage and imagines life on Mars. The U.S. premiere of ***Fans of the Blue Planet*** by Japanese artist **Reiko Sudo** seeks to "cool off" the heat and division of climate

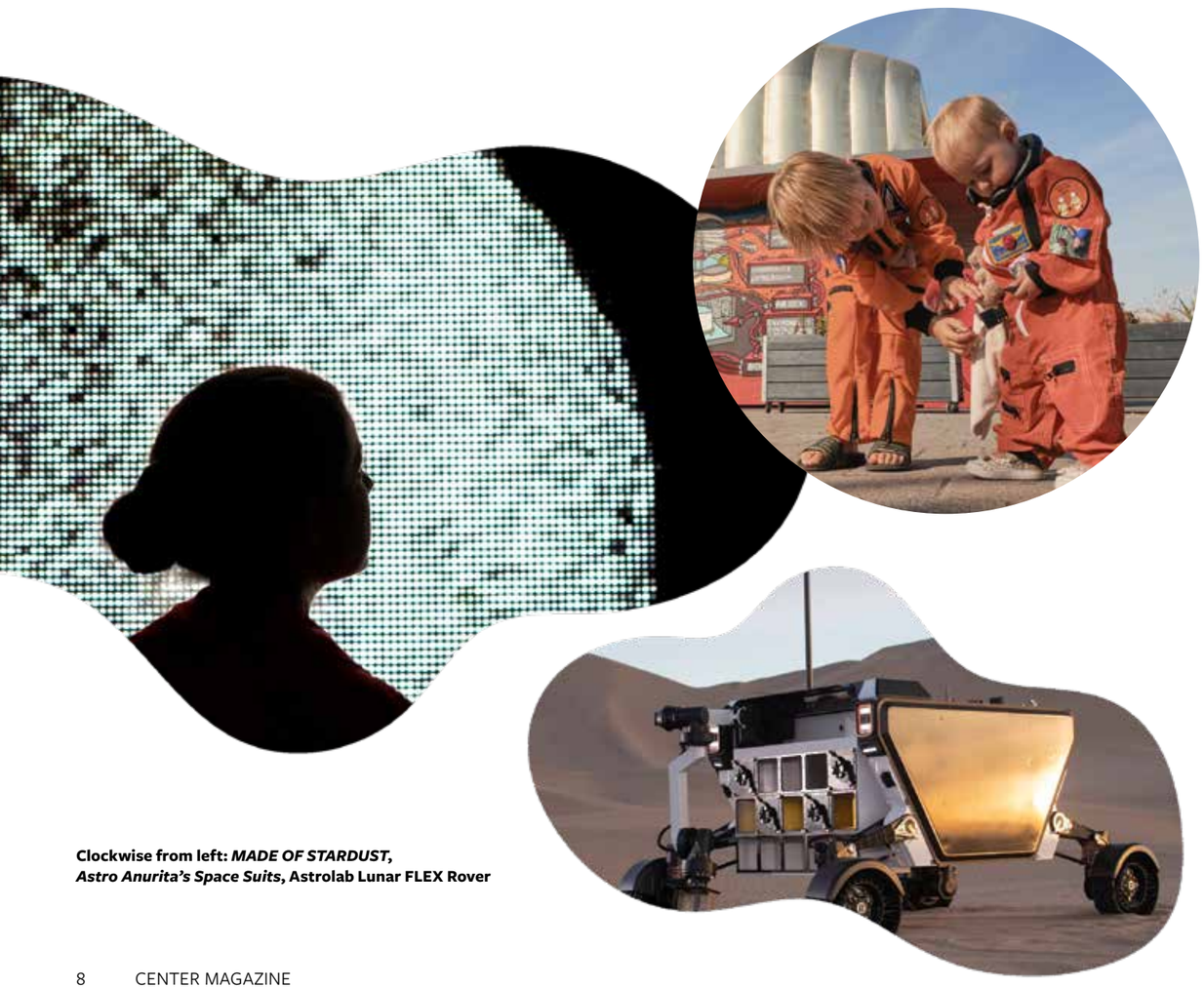
Anil Kunchala

KENNEDY CENTER YOUTH AMBASSADOR
FOR THE ARTS & ENVIRONMENT

ANEESHWAR KUNCHALA

The position of Kennedy Center Youth Ambassador for the Arts & Environment recognizes outstanding young stewards of the environment who are making a significant impact in the field. Aneeshwar Kunchala was appointed as the inaugural Youth Ambassador in 2023 when he was just eight years old.

After presenting an exhibit of his artwork for *RiverRun* and publishing his first book for *REACH to FOREST*, Aneeshwar will present the world premiere of his new documentary, ***Discovering Earth from the Stars: Aneeshwar at NASA***, produced by the Kennedy Center, at EARTH to SPACE. In the documentary, Kunchala visits NASA's Goddard Space Flight Center for the first time and learns how technology in space can help us protect and preserve the Earth.



Clockwise from left: *MADE OF STARDUST*, *Astro Anurita's Space Suits*, Astrolab Lunar FLEX Rover

change with traditional dyed blue fabric fans suspended from the ceiling. (Read more about the role of textiles in space exploration on page 12.)

Foster+Partners, a British architecture firm, presents ***From Earth to Space and Back***, an exhibition in Studio F of 3D-printed structures, drawings, and films imagining the construction of space habitats for the Moon and Mars. Learn about the many challenges of designing for the hostile environment of outer space (see page 16 for more insight).

Head over to the REACH Video Wall every evening (except Mondays) from 7 to 10 p.m. to see the U.S. premiere of ***MADE OF STARDUST***, an interactive installation by Danish artist **Cecilie Waagner Falkenstøm**. It's a unique experience where machine learning–generated visuals change based on audience movements.

You'll discover more interactive designs with the world premiere of ***Wave: From Space to Ocean*** in Studio J, presented with NASA, University of Maryland, and the University of North Texas. The exhibit uses data from NASA's new PACE (Plankton, Aerosol, Cloud, ocean Ecosystem) satellite to generate visualizations that react to the viewer. While you're in the REACH, be sure to swing by the Welcome Pavilion to see contemporary artist **Brendan Murphy**'s stunning 22-foot astronaut sculpture ***A Step Forward***, constructed of carbon fiber with a shiny chrome finish especially for EARTH to SPACE.

Outside on the REACH campus, it will be hard to miss the **Celestial Bodies** from **Kubíček Factory** (Czech Republic). You'll be able to gaze up at 30-foot inflated scientific models of the Earth, the Moon, and Mars. Plus, stick around after the sun sets to see them lit up from within, perfect for an out-of-this-world photo op!

The Next Generation

During EARTH to SPACE, there are plenty of events for children and the whole family to explore!

The **NSO Family Concert: *Earth to Space*** (Mar. 30) features music inspired by the planets, stars, and beyond! Space enthusiast and conductor **Emil de Cou** will lead this program of musical adventures and celestial learnings. Following the performance, young audience members can ask questions and hear stories from the show's artists and creative team including Kennedy Center Youth Ambassador for the Arts and Environment **Aneeshwar Kunchala** and astronaut and textile artist **Karen Nyberg**. Then join Nyberg for a meet and greet at the Lunar Quilts!

Three **Family Weekends** (Mar. 29 & 30, Apr. 5 & 6, Apr. 12 & 13) will be filled with hands-on activities, special events, and free giveaways! Highlights include a workshop for kids led by Anurita Chandola called ***Design Your Martian Space Suit*** (Mar. 29 & 30, Apr. 13), NASA hands-on demo ***Preparing for Your Lunar Launch*** (Apr. 12); and NASA activities for kids, **Clouds & Heliophysics Edition** (Apr. 5), **LandSat Edition** (Apr. 6), and **IceSat2 Edition** (Apr. 12).

In addition, Youth Ambassador **Aneeshwar Kunchala** premieres his new documentary ***Discovering Earth from the Stars: Aneeshwar at NASA*** followed by a Q&A with NASA's Senior Earth Science Specialist **Brian Campbell** (Mar. 30) and NASA's ICESat-2 Outreach Lead **Valerie Casasanto** (Apr. 5), moderated by NASA's Senior Earth Science Education Specialist **Dorian Janney**.

JFK'S MOONSHOT: CONTINUING A LEGACY

Cecil Stoughton. White House Photographs. John F. Kennedy Presidential Library and Museum, Boston

President John F. Kennedy and Astronaut John Glenn look inside the Friendship 7 space capsule (February 23, 1962).

Support for space travel was an integral part of President John F. Kennedy's administration. When Neil Armstrong and Edwin "Buzz" Aldrin finally walked on the Moon in 1969, JFK's prophetic words about space exploration resonated with the nation. In his famous 1962 speech to Rice University, the President stated: "We choose to go to the Moon in this decade, and do the other things not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win."

With EARTH to SPACE, the Kennedy Center explores how America has accepted that challenge over the past 70 years, the contributions of current artists and scientists to awareness of environmental sustainability in space and on our own planet, and how the cooperation between nations and different space programs are at the core of this new era of space activity.

ACTIVATE YOUR "STAR PASS" AND SAVE!

Add any two EARTH to SPACE festival performances or events to your cart and automatically receive a 15% discount on your tickets. Add three or more events and receive a 20% discount on your order. (Discount automatically applies to events in your cart. The *Hidden Figures* Brunch is excluded from any discounting.)

Visit tkc.co/E2S for tickets and the most up-to-date schedule of events.

EARTH to SPACE FESTIVAL CALENDAR

EXHIBITS & INSTALLATIONS

MARCH 28–APRIL 13

Foster + Partners: From Earth to Space and Back
Foster + Partners (UK) | Studio F

A Step Forward
Brendan Murphy (US) | Welcome Pavilion

Wave: From Space to Ocean
NASA, University of Maryland, University of North Texas, and the Kennedy Center (US) | Studio J

Covering Letter (Terranum Nuncius)
Jitish Kallat (India) | Hall of Nations

The Next Giant Leap: Lunar Quilts
Karen Nyberg (United States) | Hall of States

Celebrating Women in Space History
Karen Nyberg (United States) | Hall of States

Astro Anurita's Space Suits
Anurita Chandola (UK / India) | Hall of States

Fans of the Blue Planet
Reiko Sudo (Japan) | Hall of States

Celestial Bodies: Earth, Moon, Mars
REACH Grounds (thru Apr. 20)

A Step Forward **by Brendan Murphy**

SPECIAL EVENTS & ACTIVATIONS

The Moonwalkers: A Journey with Tom Hanks
March 28–April 20 | Studio K

Tuesdays & Wednesdays: 5 p.m., 6:05 p.m., 7:10 p.m., 8:15 p.m., 9:20 p.m.

Thursdays & Fridays: 3 p.m., 4:05 p.m., 5:10 p.m., 6:15 p.m., 7:20 p.m., 8:25 p.m., 9:30 p.m.

Saturdays & Sundays: 10:30 a.m., 11:35 a.m., 12:40 pm, 1:45 p.m., 2:50 p.m., 3:55 p.m., 5 p.m., 6:05 p.m., 7:10 p.m., 8:15 p.m., 9:20 p.m. (Sat. only)

Astrolab Lunar FLEX Rover
March 28–April 1 | Front Plaza
Hours: Fri.–Sun. & Tue., 10:30 a.m.–8 p.m.

MADE OF STARDUST
Cecilie Waagner Falkenstrøm (Denmark) | REACH Video Wall
March 28–April 13, Tuesdays–Sundays, 7–10 p.m.

NASA Information & Giveaway Table
Saturdays & Sundays: March 29 & 30, April 5 & 6, April 12 & 13, 10:30 a.m.–12:30 p.m. | Moon Rock Club (River Pavilion Patio)

PERFORMANCES & EVENTS

FRIDAY, MARCH 28

EARTH to SPACE Exhibits open

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

SATURDAY, MARCH 29

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

Family Weekend 1
10:30 a.m.–12:30 p.m. | The REACH

Design Your Martian Space Suit–
A Workshop for Kids by Anurita Chandola
10:30 a.m.–12:30 p.m. | PT-109

PANEL: *Monaco's Leap to the Stars: High-Tech Innovation, Astronaut Perspectives, and Lunar Exploration*
2–3:30 p.m. | Justice Forum

SUNDAY, MARCH 30

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

Family Weekend 1 & NSO Day
10:30 a.m.–4 p.m. | Kennedy Center Campus

FILM: *Discovering Earth from the Stars: Aneeshwar at NASA*
11 a.m.–12 p.m. | Justice Forum

NSO Family Concert: *Earth to Space*
1–2 p.m. | Concert Hall

NSO Creative Conversations
2–2:30 p.m. | Concert Hall

Meet & Greet with Astronaut Karen Nyberg at the Lunar Quilts!
2:45 p.m.–3:30 p.m. | Hall of States

Design Your Martian Space Suit
A Workshop for Kids by Anurita Chandola
2–4 p.m. | PT-109

TUESDAY, APRIL 1

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

STARMUS PANEL: *Cosmic Beginnings and Mysteries: Exploring Life's Origins and the Depths of Gravity*
5–6:45 p.m. | Terrace Theater

EARTH to SPACE x STARMUS Launch
8–9:30 p.m. | Eisenhower Theater

WEDNESDAY, APRIL 2

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

STARMUS PANEL: *From Earth to the Stars: Reflecting on the Journey and Building the Future*
5–6:15 p.m. | Terrace Theater

FILM: STARMUS VI
6:30–8 p.m. | Justice Forum

Space Food: The Final Frontier
8 p.m. | Moon Rock Club (River Pavilion)

THURSDAY, APRIL 3

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

PANEL: *First Art on the Moon*
6–7:15 p.m. | Justice Forum

David Zambuka Presents – To the Moon and Back!
7:30 p.m. | Terrace Theater

Moon Rock Club
8 p.m. | Moon Rock Club (River Pavilion)

FRIDAY, APRIL 4

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

David Zambuka Presents – To the Moon and Back!
7:30 p.m. | Terrace Theater

MOON, Mark Morris Dance Group
8 p.m. | Eisenhower Theater

Meet-and-Greet with Festival Artists
8 p.m. | Moon Rock Club (River Pavilion)

SATURDAY, APRIL 5

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

Family Weekend 2
10:30 a.m.–3 p.m. | The REACH

NASA Kids Craft Activities: Clouds & Heliophysics Edition
10:30 a.m.–12:30 p.m. | PT-109

FILM: *Discovering Earth from the Stars: Aneeshwar at NASA*
11 a.m.–12 p.m. | Justice Forum

Meet the Scientist: Barbara Cohen
2–2:45 p.m. | Justice Forum

MOON, Mark Morris Dance Group
2 p.m. | Eisenhower Theater

***On the Precipice of Perception,* Chief Moomen**
7:30 p.m. | Terrace Theater

MOON, Mark Morris Dance Group
8 p.m. | Eisenhower Theater

Jennifer Koh
8 p.m. | Moon Rock Club (River Pavilion)

SUNDAY, APRIL 6

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

Family Weekend 2
10:30 a.m.–12:30 p.m. | The REACH

NASA Kids Craft Activities: LandSat Edition
10:30 a.m.–12:30 p.m. | PT-109

***Hidden Figures* Brunch**
11 a.m.–2 p.m. | Roof Terrace Restaurant

TUESDAY, APRIL 8

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

WEDNESDAY, APRIL 9

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

***Starry Night: A Voyage Across Space and Time* by Brian Greene**
7:30 p.m. | Terrace Theater

***Still Life*, winter guests**
8 p.m. | Eisenhower Theater

***Galactic Hope* by Ihab Darwish**
8 p.m. | Moon Rock Club (River Pavilion)

THURSDAY, APRIL 10

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

***Beeja – Earth Seed* by Malavika Sarukkai**
7:30 p.m. | Family Theater

***Starry Night: A Voyage Across Space and Time* by Brian Greene**
7:30 p.m. | Terrace Theater

***Still Life*, winter guests**
8 p.m. | Eisenhower Theater

***AND NO BIRDS SING: A Requiem for the Earth* by Margaret Leng Tan**
8 p.m. | Moon Rock Club (River Pavilion)

FRIDAY, APRIL 11

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

***Beeja – Earth Seed* by Malavika Sarukkai**
7:30 p.m. | Family Theater

***Starry Night: A Voyage Across Space and Time* by Brian Greene**
7:30 p.m. | Terrace Theater

Nikolaj Hess & Spacelab
8 p.m. | Moon Rock Club (River Pavilion)

SATURDAY, APRIL 12

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

Family Weekend 3
10:30 a.m.–4 p.m. | The REACH

NASA Kids Craft Activities: IceSat2 Edition
10:30 a.m.–12:30 p.m. | PT-109

PANEL: *The Artemis Generation: Exploring the Moon Then & Now*
11 a.m.–12 p.m. | Justice Forum

***Beeja – Earth Seed* by Malavika Sarukkai**
7:30 p.m. | Family Theater

***Starry Night: A Voyage Across Space and Time* by Brian Greene**
7:30 p.m. | Terrace Theater

José André Quartet in *Shaping Sounds of Earth to Space through Jazz*
8 p.m. | Moon Rock Club (River Pavilion)

SUNDAY, APRIL 13

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

Family Weekend 3
10:30 a.m.–12:30 p.m. | The REACH

Design Your Martian Space Suit–
A Workshop for Kids by Anurita Chandola
10:30 a.m.–12:30 p.m. | PT-109

TUESDAY, APRIL 15 – SUNDAY, APRIL 20

The Moonwalkers: A Journey with Tom Hanks
(see at left for times) | Studio K

THURSDAY, APRIL 17 – SATURDAY, APRIL 19

Akram Khan, *GIGENIS, The generation of the Earth*
8 p.m. | Eisenhower Theater

Visit tkc.co/E2S for full details and the most up-to-date schedule.

Performances and events subject to change without notice.

EARTH to SPACE

The xEMU spacesuit, a collaboration between Prada and Axiom Space

SOFT POWER

Sewing and Textiles in the US Space Program

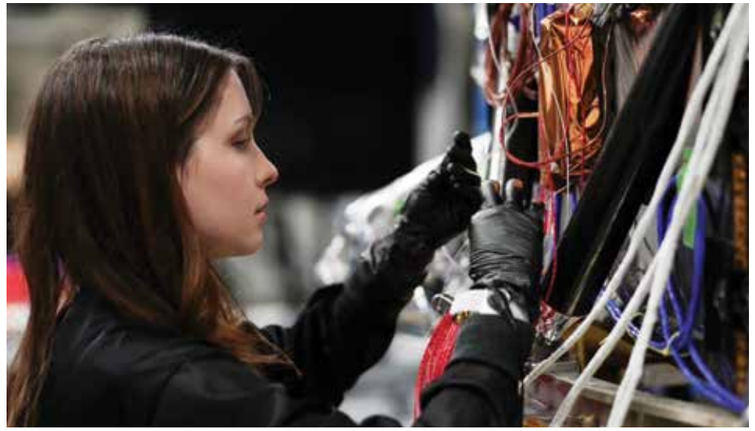
BY JENNIFER MASON

Sewing and textiles literally put the first humans in space.

Since NASA's earliest days, sewing specialists, also known as "sewists," have designed and stitched different types of space suits to protect humans as they launch into orbit, live in space, and venture outside spacecraft. Today textiles are present in many aspects of the space program, from space suits to soft goods to inflatable modules. In the not-too-distant future, they may well provide living quarters on Mars.

Textiles used for space exploration have always had to meet the most exacting standards. The high-tech suits used for extravehicular activity (EVAs) are in fact veritable spacecraft. They must support an astronaut in low pressure (the vacuum of space) and provide power, protection from heat and cold, life support, and communication. The gloves of an EVA suit alone have more than 13 layers that are stitched together to create a flexible, custom fit without any holes that could leak and endanger the human inside.

Where did NASA initially find the skilled workers to accomplish such specialized tasks? As it turns out, they were employed by a company famous for producing girdles and bras: the International Latex Corporation (ILC), also known as Playtex. ILC's unique savoir faire and experience positioned it to design and expertly sew the soft, flexible fabric spacesuits for the Apollo program, which put the first human on the Moon in 1969.



Amy Kleypas worked in the fashion industry before joining NASA's Softgoods Lab. She received an award for her skilled stitching on the thermal blankets that protect the four cameras installed on the NOVA-C Lunar Lander.

Sewing and textiles have become an increasingly important part of the space program ever since. During the 1970s Skylab program, an emergency sunshield was sewn by hand to protect instruments from heat and radiation. Parachutes and balloon-like external bladders slow spacecraft and protect them as they return to Earth. Sophisticated exterior shielding made from fabric protected the Space Shuttle and now protects the International Space Station (ISS). Looking to the future, similar shielding and inflatable textiles will likely be used as humans explore the Moon and beyond.

National Air and Space Museum Archives

In the 1960s, NASA turned to workers at Playtex—known for girdles and bras—to produce the first space suits. Here, Hazel Fellows works on the Apollo A7L space suit.

Made for Space, Used on Earth

Traveling and living in space requires the ultimate in sustainability. You must bring everything you could possibly need with you, and all of it—water, air, clothes, even trash—must be recyclable or reusable. As sustainability on Earth becomes increasingly important, textiles and coatings developed by NASA for use in space are finding new applications on this planet.

A textile coating that reflects heat away from spacecraft—most famously used on the tiles on the Space Shuttle—is now used in athletic wear to radiate body heat inward in cold conditions and to reflect heat away in hot weather. Then there is Beta cloth: After the Apollo 1 fire, NASA developed this very strong, flame-retardant fabric that is now used on the roofs of sports stadiums, airports, and other large commercial buildings. It is lighter and has better thermal properties than traditional roofing, reducing the need for air conditioning. A third spinoff is the flexible aerogel insulation batting developed for suits for future Mars missions—it is already being used as a sustainable building material in energy-efficient structures here on Earth.

Back to the Moon—and on to Mars!

Textile development and sewing are critical components of NASA's Artemis campaign, which will return humans to the Moon, including the first woman and the first person of color; establish the Gateway lunar space station; and pave the way for

NASA

Crew on future missions to the moon will use Cargo Transfer Bags similar to the ones used today on the International Space Station. Each bag is sewn by high school students in the HUNCH program to meet exact requirements for space travel and safety.

NASA

When Skylab's heat shield was damaged during its uncrewed launch on May 14, 1973, NASA scrambled to find a fast solution. Alyene Baker (center) stitched a replacement that a crew carried into space nine days later, just in time to save the space station.

the exploration of Mars. These specialties are behind NASA's new Exploration Extravehicular Mobility Unit (xEMU) suit, which is much more advanced than the suits worn during the Apollo era and those currently in use for spacewalks outside the ISS. The xEMU suits will notably have a much better fit, making them more comfortable and easier to move around in—factors that are important when conducting scientific tasks on the Moon's surface. The suits will also have improved seams specially designed to keep out the fine lunar dust.

As textiles become ever more lightweight, durable, and cost-effective, they are offering endless other possibilities as well. An inflatable structure is already part of the ISS, providing crew with a place to work and sleep. Inflatables might also one day provide living quarters on planet surfaces, and engineers may even come up with spacecraft that inflate once in orbit. Even more possibilities include inflatable launch and re-entry vehicles, crewed capsules, and unmanned rovers. Among NASA's myriad challenges is to design windows in the inflatables that will allow astronauts to conduct experiments, dockings, and planetary observation; another is to improve flexible stitching that won't create holes during expansion.

Textiles and sewing are equally important in designing spacecraft interiors. Ordinary sewn goods, or "soft goods," help astronauts corral and store cargo and personal items in a weightless environment and provide privacy during sleep and personal time. These everyday items are painstakingly engineered to meet strict weight requirements and take up a minimum amount of space. Even ordinary hook-and-loop fasteners do not escape scrutiny—they are used sparingly due to their flammability.

Space and Fashion: Perfectly Matched

Fashion has been flirting with space for decades. After Sputnik launched in 1957, a whimsical futuristic aesthetic began showing up on the world's chicest runways (think moon boots, silver jumpsuits, metallic dresses, vinyl visors…). Among the more extravagant examples is Chanel's Fall 2017 Ready-to-Wear show, which featured models sporting space blankets and other metallic-galactic flourishes as they paraded around a life-sized rocket that lifted off in a cloud of smoke.

In recent years, the space-fashion relationship has become more reciprocal. An increasing number of fashion school graduates are now taking their talents and creativity to NASA, and sustainable and innovative materials developed for the space program are finding their way into athletic wear and other apparel.

By far the most high-profile coupling is Prada's collaboration with Axiom Space, the company contracted by NASA to produce the xEMU spacesuit. The revolutionary suit resembles both its parents, bringing together engineering, advanced materials, technical skills, art—and even a sly reference to Prada's Linea Rossa logo.

You could say this suit was thousands of years in the making, tracing its lineage to our ancestors who first sewed nets to catch fish and wove cloth to protect them from the elements. That these ancient technologies are now playing exciting roles in the unfolding human adventure in space is yet another testament to our relentless drive to always surpass ourselves—and to reach for the Moon.

Jennifer Mason has 35 years' experience in the aerospace industry as an organizer, communicator, and planner.

NASA/Alex Gerst

BEAM, the inflatable module attached to the International Space Station, is pioneering the concept of expandable habitats for astronauts. Expedition 55/56 crew members pose for a photo inside the module, which has the advantage of being lightweight yet durable.

DR. KAREN NYBERG

Retired Astronaut/Textile Artist

Dr. Karen Nyberg is a mechanical engineer and astronaut with 30 years of experience working at NASA on human spaceflight. She is as passionate about textiles as she is about space, and in 2013 she became the first human to sew and quilt in orbit.

Dr. Nyberg began her career as an environmental control systems engineer at the Johnson Space Center, focusing on thermal and environmental controls for space vehicles and space suits. Then in 2000, she was selected as a member of the NASA Astronaut Corps. On her second spaceflight, Dr. Nyberg lived and worked at the International Space Station (ISS) for 166 days. It was during that time that she stitched her square star-themed quilt block.

With her blond ponytail flying wildly behind her, she chronicled her adventure in an amusing video that showed fellow quilters back home how she dealt with the challenges of quilting in a weightless environment—using Velcro to keep scissors, ruler, and other materials from floating away; measuring and cutting fabric even though she couldn't lay it flat; and making do with tape instead of straight pins to hold seams.

At the end of the video, Dr. Nyberg invited crafters from around the world to contribute squares to what would be a global community quilt. Supported by NASA, the initiative became known as the Astronomical Quilt Challenge. The enthusiasm was overwhelming—NASA received more than 2,400 quilt squares, many accompanied by moving letters. A team of volunteers sewed the squares together, creating 28 king-sized quilts that are now housed at the Briscoe Center for History at the University of Texas. One of these, the Astronomical Quilt, includes the quilt block that Dr. Nyberg made in space.

Since retiring from NASA in 2020, Dr. Nyberg has pursued her passion of creating textile art, designing fabrics and quilt patterns inspired by the fragile beauty of Earth as seen from space. Through her art, she hopes to promote interest in STEAM and help find solutions for the sustainability of our planet.

Earlier this year, Dr. Nyberg's work was featured in "The Stars are Aligned," her one-woman show at the National Quilt Museum in Kentucky. Her latest project is THE NEXT GIANT LEAP Lunar Quilt Block Challenge, inspired by NASA's Artemis campaign that will return astronauts to the Moon for the first time since 1972. Students, quilters, and artists from throughout the country are joining Dr. Nyberg in creating Moon-themed blocks; the two resulting Lunar Quilts will be displayed during the Kennedy Center's EARTH to SPACE: *Arts Breaking the Sky* festival, then donated to the Briscoe Center for History.

Dr. Nyberg is especially happy that so many young people are among the participants, pointing out that Artemis, which will pave the way for human missions to Mars, will be a fixture throughout their lives, creating new career opportunities. "Very few people make the connection between sewing and space exploration, yet they have been intricately linked since NASA's earliest days," she said. "Innovative textiles, sewing expertise, and design skills are vital to the space program; I'm excited that this project will make visitors to the Kennedy Center, especially young visitors, aware of these new career paths."

EARTH to SPACE

Foster + Partners' designs for lunar habitats feature 3D-printed modules that protect inhabitants from gamma radiation, meteorite impacts, and extreme temperature fluctuations.

OUTER SPACES

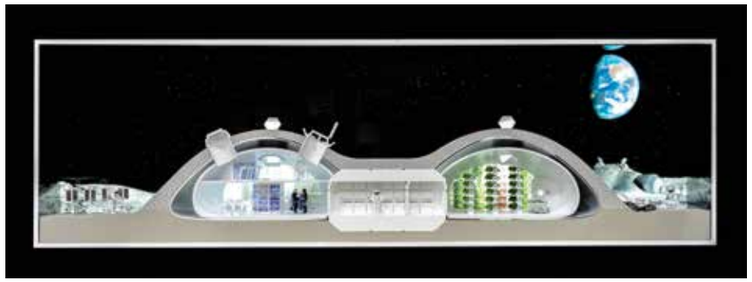
Designing Human Habitats for Extreme Environments

BY KAREN TAYLOR

Adventure seekers trekking through even the most remote destinations still need the basics: breathable air, water, food, shelter.

None of these essentials will be readily available to the pioneering astronauts planning to spend time on the Moon or Mars. What's more, they won't be able to bring much with them to these hostile environments—spaceships can transport only so much cargo, and you can forget about free shipping. Designing habitats around these and myriad other constraints is a daunting challenge, one thrown down by the European Space Agency (ESA) and NASA, and enthusiastically taken up by the renowned architectural, urbanism, and design firm Foster+Partners.

On its website, Foster+Partners presents 444 projects listed by geographical location. Scroll down, and tucked between South Korea and Spain, you'll find a highly unlikely locale: Space. Yet designing lunar and Martian habitats is not really a giant leap for this firm, which has produced radically creative designs for nearly six decades.



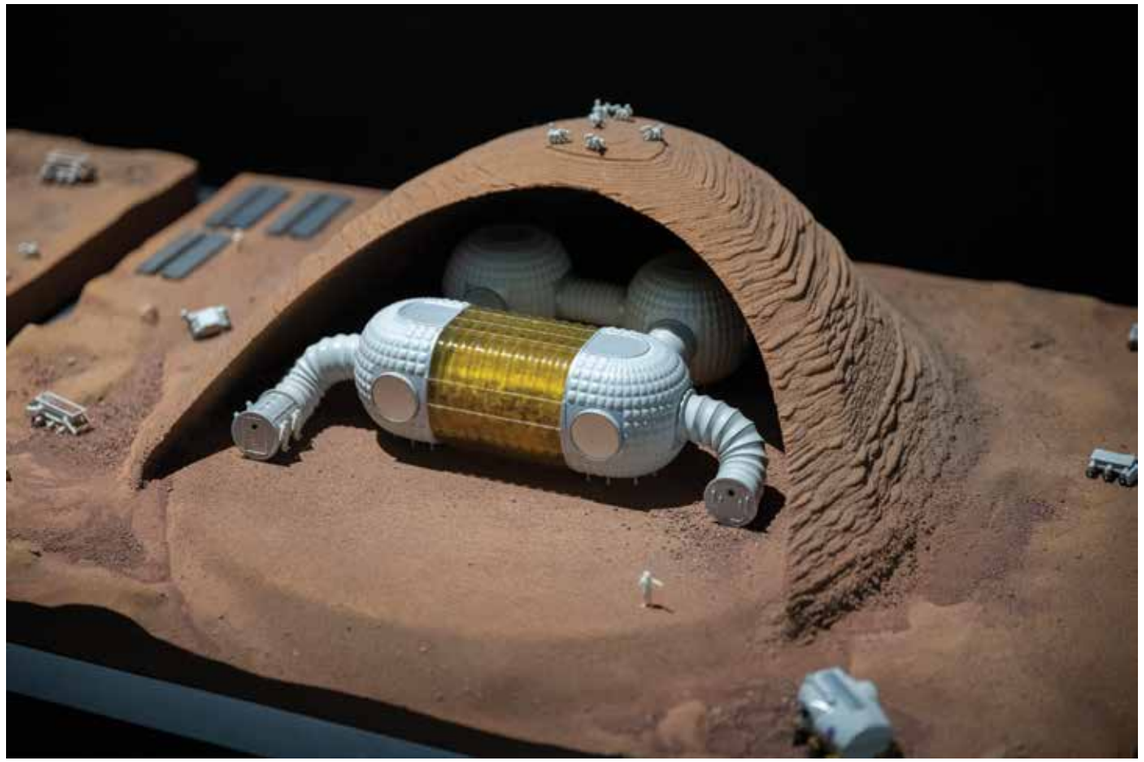
A cross-section of lunar habitat modules.

Founded in 1967 by Norman Foster, the firm now has 17 offices worldwide, employing more than 2,300 people. Its remarkable journey was chronicled last year at Paris's Pompidou Center, which hosted a massive retrospective devoted to the firm responsible for such iconoclastic structures as the Gherkin in London, the HSBC headquarters in Hong Kong, Apple Park in Cupertino, and Spaceport America in New Mexico.

"This exhibition traces the themes of sustainability and anticipating the future," Foster commented at the time. "Throughout the decades, we have sought to challenge conventions, reinvent building types, and demonstrate an architecture of light and lightness inspired by nature, which can be about joy as well as being eco-friendly." You could say that Foster's entire career has uniquely positioned him to tackle the challenges of designing for humanity's newest frontier.

Foster+Partners launched its space adventure in 2012, when its team of architects, engineers, and roboticists became part of a consortium set up by the ESA to explore the potential of 3D printing in the construction of lunar habitats. In 2015, the firm built on that experience when it joined NASA's multiyear Centennial Challenges Program, entering a competition that involved both lunar and Martian habitats. Scale models, materials, and videos related to these projects will be on view during the Kennedy Center's EARTH to SPACE: *Arts Breaking the Sky* festival.

The ESA and NASA initiatives suggest that 3D printing could indeed be the solution to the most obvious problems of building on the Moon or Mars: the total absence of traditional materials, equipment, and laborers. A Foster+Partners animated video shows how this concept might work: The film begins with an ESA rocket transporting a cylindrical module to the Moon; after landing, a highly durable material emerges from one end, inflating to form the "scaffolding" of a dome-shaped structure. Autonomous robotic 3D excavator/printers (previously delivered to the site) then go to work, gathering lunar "soil," a sort of pulverized rock and glass known as regolith. That material is then mixed with a binder to create the "ink" that would be printed in layers over the dome, forming a protective shell. This approach, which avoids the



A model of the Foster + Partners' Mars habitats; protective outer shells would be built by semi-autonomous robots.

logistics and cost of shipping construction materials, harks back to what was once a common and sustainable practice on Earth: building homes and towns using only local resources.

The video goes on to show how the module would become an entrance and airlock leading to the dome, which would accommodate four astronauts. The dome structure would feature multiple layers designed to withstand incoming micro meteors, gamma radiation, solar radiation, and extreme temperature fluctuations—problems we don't have on Earth thanks to our protective atmosphere.

Irene Gallou, a senior partner involved in Foster+Partners' space projects, explains that the dome would be very strong but also lightweight. "Unlike solid concrete, the regolith material would be printed into a structural lattice or honeycomb-type pattern, a design not unlike the strong but light bones of birds." This technique requires less material, giving it the added advantage of greater sustainability.

Extreme lunar temperatures (think 260° F during the day and –343°F at night) would be countered by building part of the habitats below ground, taking advantage of the thermal properties of regolith, and installing innovative insulating materials. Power systems that can capture and store solar energy, generating and releasing heat as necessary, would also be key. "Many of our solutions to temperature swings and other issues were informed by our extensive experience designing for challenging and extreme environments," said Gallou. "Like Antarctic research stations and desert outposts, for example, space habitats are isolated locations with scarce resources, so they too have been designed as self-sufficient systems with closed-loop technologies for water recycling, air regeneration, and waste management."

Taking another page from the extreme architecture playbook, Foster+Partners designed modular habitats that can be enlarged as more astronauts arrive or additional functions are required. These modules would include private sleeping pods, shared spaces for dining and relaxation, workspaces optimized for research and communication, hygiene areas, and sustainable waste systems. "Communal spaces, natural light, and recreational facilities are all very important in remote places," said Gallou. "Balancing shared and private spaces, which is essential for long-term psychological wellbeing, is a hallmark of our design philosophy."

While there are similarities between the environments on the Moon and Mars, Gallou points out that there are also significant differences that influence habitat design. The Moon, for example, has no atmosphere, whereas Mars has a thin atmosphere that provides at least some protection from micro meteorites and radiation. But it also presents other challenges, such as dust storms and toxic perchlorates, which corrode equipment and are hazardous to human health even at low levels. And while the initial visits to the relatively close Moon would require habitats designed for short-term use, trips to Mars could take six or more months, so astronauts would likely stay longer and need different features, such as agricultural areas.

Energy resources are another factor that determines design. These vary not only between the Moon and Mars but also across their respective surfaces. A permanent lunar base, for example, will likely be located near the Moon's south pole, where there are areas that receive near-constant sunlight, making them ideal for solar-powered systems.

> "Communal spaces, natural light, and recreational facilities are all very important in remote places. Balancing shared and private spaces, which is essential for long-term psychological wellbeing, is a hallmark of our design philosophy."
>
> —Irene Gallou, Senior Partner, Foster+Partners

This past August, Foster+Partners teamed up with Tennessee's Branch Technology on a NASA project to design a solar tower adapted to this specific location. It is 50 meters high, enabling it to capture the sun's horizontal rays, which are always low on the horizon in this location. The height will also allow it to rise above the long shadows of the surrounding undulating terrain. Solar towers could be adapted to Martian conditions as well, but additional energy sources, such as nuclear power, would also be needed.

Looking to the future of space architecture, the next major advancements will be likely driven by the successful development of rapidly reusable heavy launch vehicles capable of lifting significantly greater mass to the Moon, Mars, and beyond. All have characteristics very different from Earth and from one another—such as the speed at which objects fall and fluids flow—that will impact design. On a more poetic note, architects will be able to incorporate the movement of celestial objects into their designs: A Martian habitat might have views of Phobos and Deimos (the moons of Mars), while lunar habitats might have windows framing the "Earthrise."

With the growing participation of commercial players, the motivations, demands, and pace of nascent space exploration remain to be seen. For Foster+Partners, sustainability will remain at the core of its approach. "We will continue to design for efficiency and reusability," said Gallou. "Our goal is to minimize human impact and ensure that exploration remains respectful and responsible."

Aesthetics and functionality will also remain inseparable. "Our space habitats will always balance resilience and comfort. Space architecture demands lightweight, modular designs that maximize efficiency, but those concerns must not compromise the human experience."

Karen Taylor is a writer and editor; for the past two decades, she has contributed to the Kennedy Center's international festivals.

Spaceport America in New Mexico is the first building of its kind; Foster + Partners articulated the thrill of space tourism with a concern for environmental preservation.

Meanwhile, Back on Earth...

Foster+Partners anticipates that space architecture will increasingly merge existing and new technologies with sustainable design principles, likely influencing architectural approaches on Earth. Below are but a few examples of how problem-solving for space habitats might lead to innovative solutions to challenges here at home.

Robotic and autonomous construction, now planned for remote and hazardous environments such as the Moon and Mars, might one day be adapted for disaster response on Earth. Shelters made from in situ materials could be built rapidly in inaccessible areas, with less need for human labor in these dangerous construction environments.

Techniques developed to efficiently process lunar regolith and Martian soil into construction material could perhaps be applied, reducing the carbon emissions of building materials on Earth—today, concrete is responsible for 8 percent of world's CO_2 emissions.

Advances in hydroponics and algae-based oxygen production in space, which are dependent on optimum artificial lighting, could be applied to urban farms and green buildings, enhancing food security and air quality in dense cities.

Architectural approaches such as naturalistic design, artificial light cycles, and social spaces conceived to promote mental wellbeing during space missions could combat urban stress through a greater connection to nature and optimized communal spaces.

Development of new materials that are radiation-resistant, lightweight, and thermally insulating could transform urban architecture by improving energy efficiency, durability, and resilience to climate extremes.

Energy-efficient systems, water recycling, and other technologies developed for space environments could contribute to more sustainable and resilient infrastructure for disaster-prone or resource-scarce regions on Earth.

Modular, reconfigurable habitats designed for space could inspire flexible and sustainable urban housing that could adapt to changing populations or climates.

EARTH to SPACE

MOON DANCE

Mark Morris Explores the Secrets of Space

BY SARAH L. KAUFMAN

Christopher Duggan

It's one thing to ask for the Moon, and another to deliver it.

The Kennedy Center offered a major commission to choreographer Mark Morris last fall, with a modest request: It should have a Moon theme. The new work will be a centerpiece of the EARTH to SPACE: *Arts Breaking the Sky* festival. Alicia Adams, the Kennedy Center's vice president of dance and international programming, turned to Morris, one of the leading choreographers of his generation and director of the Mark Morris Dance Group, to create a production that "may have some lasting meaning," she said recently, "and be a part of the repertoire of his company."

Morris agreed to it all and more—the Moon as well as the stars, and, if everything aligns, a life beyond the festival, too. His new work, titled simply *MOON*, will have its world premiere April 4 and 5 in the Eisenhower Theater, performed by his company. Afterward they will take it on tour.

Once he said yes, however, Morris faced a big, blank canvas. As themes go, his was astronomical. Where to begin? Even his musical choices were astronomical. We are awash in Moon songs, apparently—oceans of them, and Morris listened to more than he cares to remember. Music is always the starting point of his creative process, but he was not tempted by the obvious choices.

So audiences for *Moon* won't hear "Clair de Lune." No "Fly Me to the Moon," no "Moon River."

"There's not a song in English without the word 'moon' in it because it rhymes with everything," Morris said in an interview. "I *am* using music that refers to the Moon, but it's old, from the 1920s and '30s."

He was still in the early stages of creation when we spoke, and buzzing with opinions about everything Moon-related. Futurist music of the early 20th century thrills him with its sound experiments, he said, along with spectralism, with its focus on tone quality and sound waves.

"I'm not sure exactly what's going to happen musically," Morris acknowledged. "But it will be live, instrumental, with piano and double bass." Organ, too, if he can swing it. His music director, Colin Fowler, is an excellent organist.

He'll include vocal recordings, most likely, and possibly snippets from the Golden Record. That's the musical message that NASA sent into space in 1977 aboard the two Voyager spacecraft. Morris calls it "my favorite document ever." He bought a copy of it years ago—nature sounds, dozens of languages, music of different cultures and eras, carefully curated for an alien audience. Morris dug out the LP while planning *MOON*.

John Eng

Choreographer Mark Morris and projection designer Wendall Harrington

"It's astounding music. I was like, 'Oh, wait a minute, let me put this on again.' It's exactly what I wanted."

But at the time of our conversation, he was not planning to use the record's music in his dance. He might include its other sounds, "some of the spoken stuff and the greetings in every language, I *think*."

Morris has also been pondering a point of view. What is the Meaning of the Moon?

"Of course, the first thing I thought is I should do the hoax of the Moon walk," he said. "It's such a fun conspiracy. But other people have done that really well. So I'm doing the real one."

He laughed. Was he serious? Not even he knew. Ideas were flying about like shooting stars.

Gravity, for instance, is iffy. "I've already started working a little bit with weightlessness," Morris offered, mysteriously.

Adams gave Morris few guidelines beyond the Moon theme. He has a long history with the Center and his company has performed a stream of successes there—including *Pepperland*, an exuberant celebration of the Beatles, and *The Look of Love*, a moving tribute to the music of Burt Bacharach. Both works combine profound musical sensitivity and complex emotions; they evoke the absurdities and joys of life with honesty and humor.

"When I was thinking about choreographers who might be interested and be able to realize something with audience appeal, I thought of Mark," Adams said, "because of Bacharach and the Beatles, and in general how he thinks of music. And I always find him surprising."

"He's doing much more than we thought he would," she added. "I thought he'd find a collection of Moon songs he liked, but he's going further, delving into space and the science of it."

Indeed, Morris' research has led him deep into the space program and John F. Kennedy's dramatic expansion of it, which connects back to the festival and the Center as Kennedy's living memorial. Morris also dived into poetry, the sitcom *Futurama*, and "way too much music written about the Moon," he said. He has pored over Moon rituals, fertility rites, "religiosity and fear and crazy science," but his new dance won't be a cross-cultural study.

"I'm not doing a Ken Burns special," Morris said. "I'm interested in how the Moon came

> "I'm not doing a Ken Burns special. I'm interested in how the Moon came to be our fall-in-love token, and the mystery and glamour of it."
>
> —Mark Morris

to be our fall-in-love token, and the mystery and glamour of it."

Isaac Mizrahi, a frequent collaborator, is designing the costumes. For the first time, Morris is using projections, created by the leading projection designer Wendall Harrington, a veteran of Broadway, ballet, and opera.

"Obviously, the Moon is about reflection," Morris said. "It only bounces light. So there's a lot of light involved."

Clichés fascinate him. There might be a glimpse of the 1902 French film by Georges Mélies, *A Trip to the Moon*. (You've undoubtedly seen its famed, wonderfully cranky scene where a space capsule lands in the moon's eye.)

Then there's Stanley Kubrick. "What was better than *2001: A Space Odyssey*?" Morris asked. "Nothing. Nothing was better than that."

Kubrick's futuristic, mostly nonverbal film features classical and orchestral music by Johann Strauss II, Richard Strauss, and Gyorgi Ligeti. Morris said that while *Moon* is much different, he's been inspired by Kubrick to combine "an old thing and a new thing."

He's also interested in "looking at the Moon from Earth, and Earth from the Moon." Different views, different meanings.

Morris points to the vast lunar symbolism in *Salome*, the play by Oscar Wilde about a frustrated princess and her grim revenge. Wilde himself said the Moon was the star of the show.

"It has the most astounding Moon references," Morris said. "Most of the characters, right after they enter, they talk about the Moon. Everyone in a different way. It's fascinating. And they say it just *en passant:* 'Oh, have you noticed that the Moon looks like this?' And everybody's wrong. And they're all right."

But the more Morris delved into the Moon, the bigger it grew, and compressing it all into a one-hour show required some rules.

"The list of 'I Won't Allow Myself to Do This' grows and grows," he said. For example: no flying sets or scenery.

"I don't need the crescent moon that descends on a rope, like in every 1930s musical," he said. "I *do* want everyone to enter on a crescent moon, but that would be the whole Kennedy Center budget."

Will we see a blue *Moon*? Color choices were still in flux. "I want it predominantly in black and white," he said, "but I'm not sure."

So many ideas, so many decisions. Morris' creative process, however, is firm. The gathering, the discarding. Sifting through what's left, conferring with trusted collaborators, studying it all from different angles.

With patience, he said, the material "will tell me what it's supposed to be."

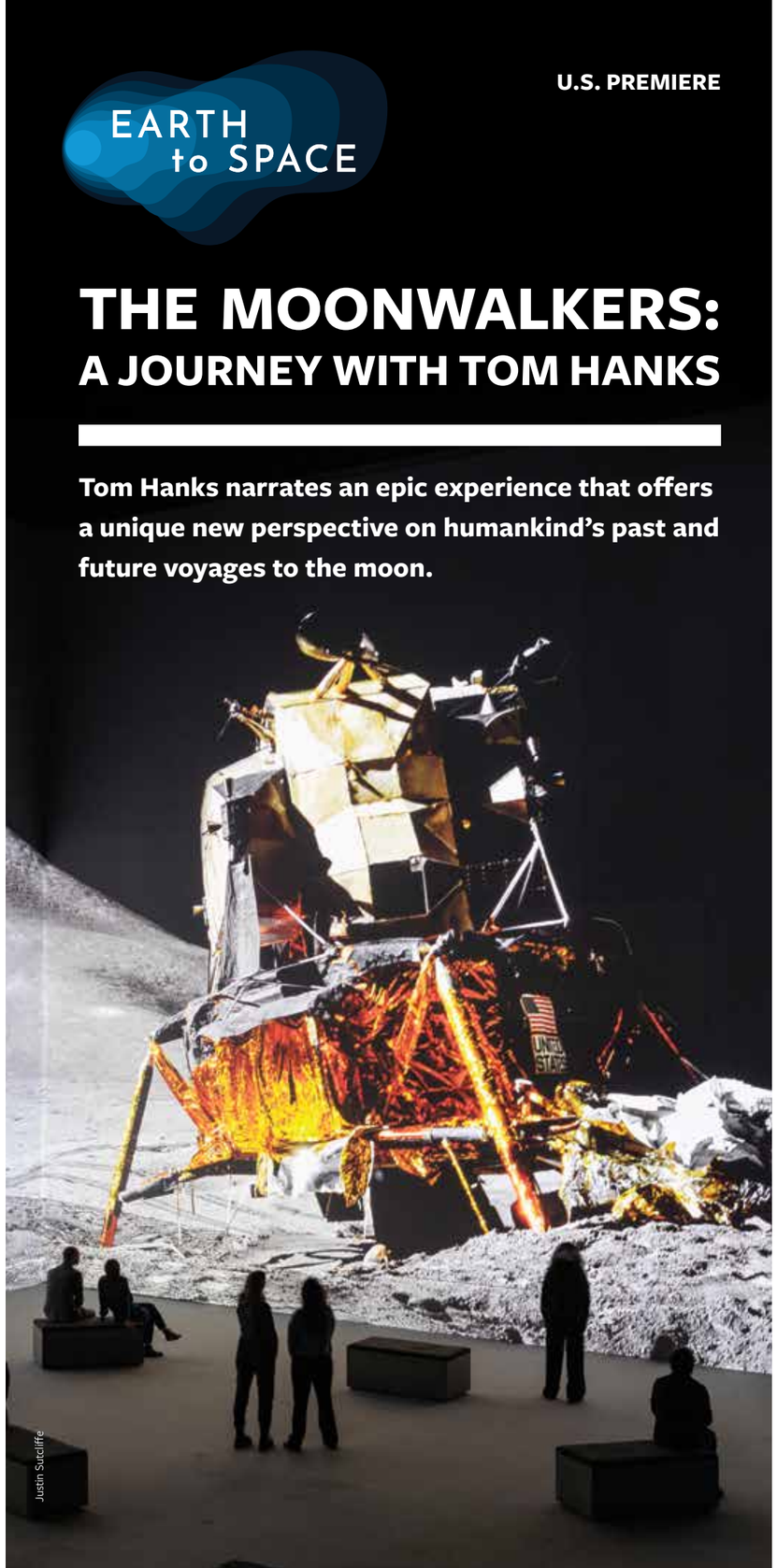
"And then," Morris added, "we'll see what happens. It's so in the air."

MOON *is commissioned by the John F. Kennedy Center for the Performing Arts in partnership with Arizona Arts Live, University of Arizona; Cal Performances, UC Berkeley; Krannert Center for the Performing Arts, University of Illinois Urbana-Champaign; and Mark Morris Dance Group.*

Sarah L. Kaufman is the former dance critic of The Washington Post, *where she won the Pulitzer Prize for Criticism in 2010. Her books include* The Art of Grace: On Moving Well Through Life *and* Verb Your Enthusiasm, *a writer's guide to the power of verbs, to be published in 2026. She teaches arts criticism and journalism in Harvard's Continuing Education program.*

Christopher Duggan

Mark Morris rehearses his company in the Kennedy Center–commissioned work *MOON*.



Justin Sutcliffe

Powerful projection and audio technology from London's Lightroom will transform Studio K from March 28 to April 20 into a vehicle for a spectacular immersive voyage to our closest celestial neighbor.

Kennedy Center Honoree Tom Hanks co-wrote *The Moonwalkers* with Christopher Riley, the double BAFTA-nominated writer-director whose work includes many of the most groundbreaking films and television programs about space for the likes of the BBC, Netflix, and PBS.

Perfect for all ages, the show tells the stories of the Apollo missions, reflecting their gripping journeys at spectacular scale. Newly recorded interviews between Hanks and astronauts of the current Artemis program will grant an insight into the return of crewed surface missions to the Moon.

Hanks himself provides the voiceover, accompanied by a spectacular original score by Anne Nikitin as well as excerpts of President Kennedy's 1962 speech that set the ambitious plan for Americans landing on the Moon.

Justin Sutcliffe

Tom Hanks

Original NASA footage and breath-taking images from Andy Saunders' *Apollo Remastered* will transform the vast space into an immersive voyage to the lunar surface, brought to life by co-directors Nick Corrigan and Lysander Ashton of 59 Studio.

Over the course of the Apollo program, the 12 astronauts to set foot on the Moon captured thousands of original photographs on medium-format Hasselblad cameras. For half a century, almost every image of the Moon landings publicly available was produced from a lower-quality copy of these originals.

For *Apollo Remastered*, Andy Saunders has, for the first time, digitally remastered images from every mission from the original film. Revealing detail that has been lost for half a century, these images offer astounding new insight and a mesmerizing retrospective of humankind's greatest adventure. Projected in 360 degrees on the walls and the floor, these images are seen like never before—at a scale that fully immerses the viewer, transporting them to the lunar surface.