

The Glass

Josh Simpson has been exploring the science of glass for 50 years—and his extraordinary planets have made their way around the world.

BY CAMILLE LEFEVRE

It all started with a seemingly endless stream of eighth graders who swarmed his studio every Wednesday for the glass-blowing demonstrations he'd agreed to do. "They weren't the least bit interested in me or goblets," Simpson says. But who wasn't astounded by the recent Apollo 8 mission photos of Earth rising behind the moon, like a little blue marble with white swirls? So, he says, "One day I decided to make a planet for them, just a simple clear glass sphere with a little blue world inside, to show the kids some of the mechanics of how glass is made, but also to give them something more to think about."

His first little planets were a big hit. Moreover, Simpson had landed on a potent creative direction, one that would meld interests discovered in childhood with his adult propensity for experimentation with chemistry, materials, and technique. "Over time, the planets became larger and more complex," says Simpson, a master of understatement.

Now, more than 50 years after the artist took his first gather of glass from a furnace he had built in 1971 with a fellow student at Goddard College, he recalls the events of an ordinary childhood that somehow led to his extraordinary present: Sitting on the back porch of his home in South Salem, New York, with his father, gazing at the moon and stars, pointing out constellations. Family trips to the Hayden Planetarium in the American Museum of Natural History, where he marveled at meteorites and a lunar panorama. Watching the fish tank in his bedroom, a self-contained water world between earth and sky. Mountains of sci-fi novels he "consumed" as a kid, he says. Talk of building a telescope, and attempting to grind a lens for one as an early experiment in glasswork.

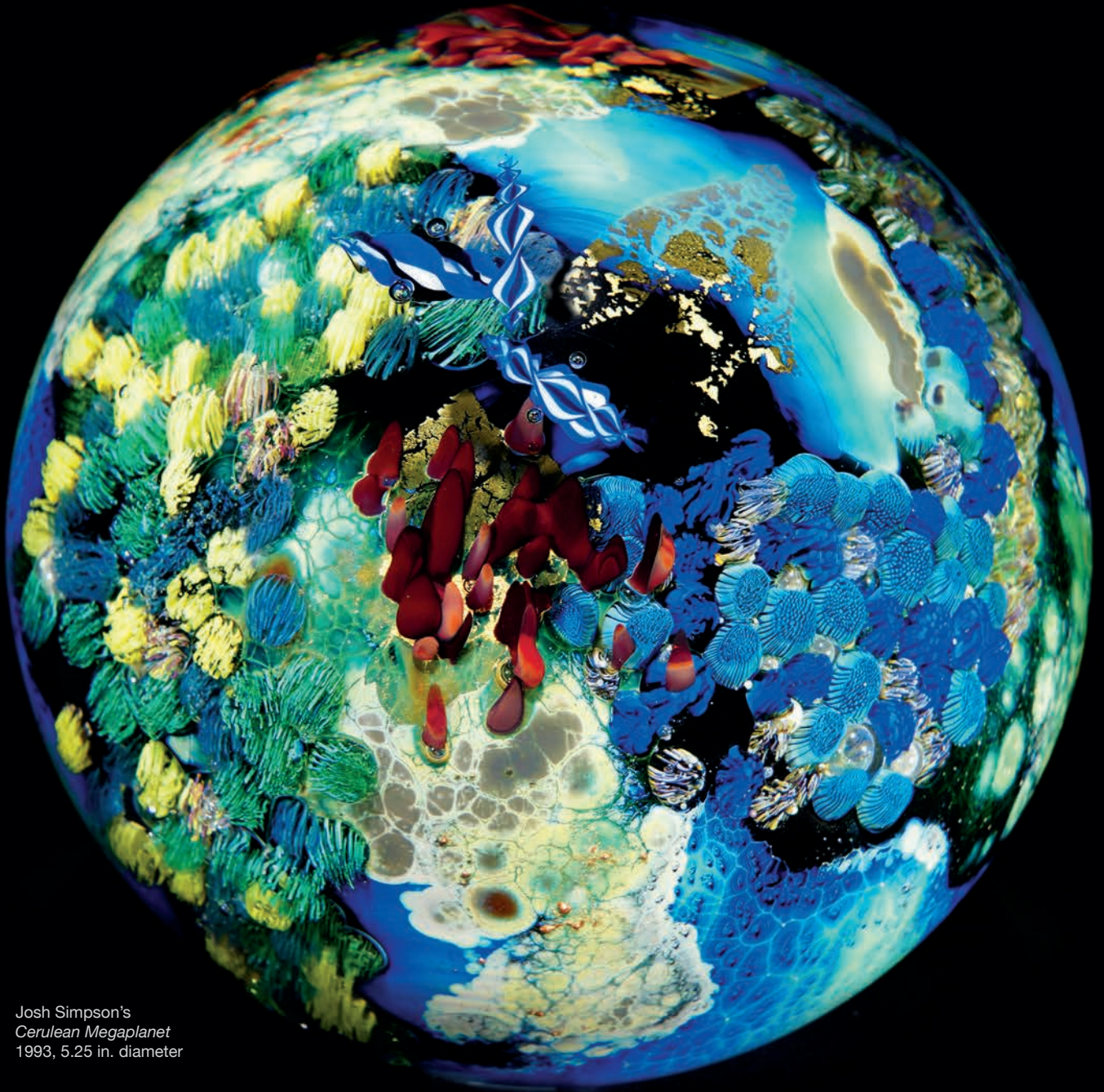
Simpson's first major success began one day while he was experimenting with melting silver on the surface of amethyst glass and—almost by chance—created a unique new kind of glass, a cerulean blue he called "New Mexico." A client who'd purchased a set of New Mexico goblets told Simpson that "drinking out of them was like drinking from the sky." Simpson marveled at "how something as utilitarian as a wine goblet could conceptually represent so much more."

With the income from selling these hand-blown goblets, in 1976 Simpson purchased the farm outside Shelburne Falls, Massachusetts, that would become his permanent studio. There, walking from his house to the barn almost every night to check on his glass furnaces, he is often inspired by thunderstorms, the night sky, falling meteors, or a rare aurora borealis.

Today, Simpson is revered as a pioneer in the studio-glass movement, having spent the past five decades inventing new color formulas and creating singular glass objects. Pieces in the *Planets* series are as small as marbles or as large as the 107-pound work from the *Megaplanets* series that resides at the Corning Museum of Glass. His platters, bowls, vases, "tektites," "portals," and other sculptural objects integrate his fascination with the astrophysical with ever more complex explorations into intricately layered colors, forms, and patterns.

One collector, smitten by Simpson's paperweight-sized planets in a gallery 30 years ago, describes them as impressionistic. "They're endlessly fascinating, a combination of serendipity and randomness and precision all in exquisite balance, and every time you look at them there's something more to see."

Alchemist



Josh Simpson's
Cerulean Megaplanet
1993, 5.25 in. diameter



“It’s in my nature
to experiment.”

—Josh Simpson



TOP LEFT: Simpson’s cerulean blue New Mexico goblets, 1977, 8.75 in. tall. TOP RIGHT: Josh Simpson at his home in western Massachusetts. LEFT: New Mexico vase, 2015, 8 x 7.5 in. ABOVE: iridescent tektite, 1987, 8.5 x 17 x 10.5 in.



TOP: Photo by Jim Gipe Photo / Pivot Media. OPPOSITE TOP RIGHT: Photo by Jamey Simpson. OPPOSITE BOTTOM RIGHT: Photo by Tommy Olaf Elder. ALL OTHER IMAGES: Photos by Sue Reed.

The Art and Science of Invention

“It’s in my nature to experiment,” Simpson says. “I’ve invented new glass formulas and techniques that I use to make my planets more colorful and complex. Long ago, alone in the studio before I had any idea what I was doing, I worked with chemicals that could have poisoned me. Luckily, I survived! I wish I’d trained to be a glass chemist. At best I’m an alchemist, learning by experimenting with pure sand, minerals, and metallic oxides to make what I hope are new and exciting colors.”

While creating one of his planets, Simpson interweaves his interests in the celestial, the natural earthly world, chemistry, and glassblowing techniques. The work is constantly evolving. Like Persian miniatures, the planets are intricately detailed and layered. Simpson begins with “a tiny gather of glass,” he explains, “and inside each sphere I often add a secret inner world that most people will never notice, but I know it’s there.”

He then incorporates self-taught Venetian techniques—*murrine* or *millefiori* (mosaic glass) and *vetro a filigrana* (filigree or glass canes)—within multiple layers of clear or dark silver glass, conjuring a multitude of otherworldly continents, flora, architecture, volcanoes, spaceships, mountain ranges, and satellites within each glass orb. He may also coat layers within the sphere with premade colored bits of glass, bringing texture and shape to the piece.

The artist spends most of his time at the furnace, where he builds each planet layer by layer; some pieces have as many as 20 layers integrating a

ABOVE: Simpson at the glory hole in his studio with assistants Tucker Litchfield and Zak Grace. BELOW: Vase from the *Corona* series, 2020, 4.75 x 4 x 2.5 in.





Renwick
Megaplanet,
2005, 12.5 in.
diameter.

plethora of elements. “All of my decisions are made through form and line and color and shading and depth; I want to lead a viewer’s eye as they explore and are drawn into the depths of each piece,” Simpson explains. “My goal is to pack each piece with as much detail as I can to make it as intriguing as possible, so you can’t let go.”

To generate singular hues and effects, he sometimes changes the temperature and oxygen flow in his furnaces. He might engrave the planets’ surfaces with a high-speed air turbine drill. “I also heat up the planets with different torches, including propane and oxygen acetylene, as those gases burn at different temperatures to make different color effects,” Simpson says. “I use a torch in the same way a painter uses a brush.”

“I consider his work art. Josh looks at it as art and science,” the collector says. “He has invented new colors, retrieved old techniques, rediscovered formulas that were lost.” Over the years, the collector has donated several planets to museums. “I feel strongly that everyone should enjoy Josh’s work,” he says. “His pieces always win what I call ‘the nose-print award’ because viewers leave nose prints on the cases as they press up as far as they can to enjoy all the details in his work.”

Diplomacy and Archaeology

One of Simpson’s megaplanets has served as “a terrific ice-breaker, especially when I have challenging meetings,” says Sarah-Ann Lynch, US ambassador to Guyana. In her Georgetown, Guyana, residence, Lynch has exhibited several of Simpson’s pieces, including New Mexico and corona disks—curved platters a-swirl with Simpson’s experiments in color chemistry. The megaplanet, however, sits on a coffee table in the room where Lynch meets with business leaders and local politicians.

“It’s nice to start off talking about Josh’s planet, as everyone sees something different in its awe-inspiring details,” she says. Lynch first met Simpson 40 years ago at a craft fair, where she purchased an early planet. She’s also held events featuring work by Simpson and local artists. “These are teachable moments for talking about craft and the value of local art and artists,” she says, “after which everyone is inspired and passionate about craft.”

Simpson’s work is held in the collections of the Corning Museum of Glass, the Smithsonian’s Renwick Gallery, the Museum of Fine Arts in Boston, the Museum of Decorative Arts in Prague, and the Glass Museum in Lviv, Ukraine, among many others.

“The spirit of Josh’s planets is encouraging people—whether in the arts or sciences—to consider what else there is to discover.”

—Cady Coleman

Simpson’s planets also live surreptitiously in the wild. Since the 1980s, the artist has been hiding them in places he’s visited throughout the world. He invites others to do the same. Through his Infinity Project, he has provided thousands of marble-sized planets to people around the globe who’ve hidden them in riverbeds, fields, forests, and graveyards; next to castles and nestled in schoolyards; on mountaintops and in ocean depths. Each of these orbs is marked with an infinity symbol. While some may be discovered quickly, others may remain hidden for centuries. Simpson considers each one an anonymous future gift to a complete stranger.

“I hope archaeologists hundreds of years from now will be confused about the meaning and purpose of the little spheres, wondering what they are and how they got there,” Simpson told *Scientific American*. There’s little question, however, how his planets ended up in space.

From the Sea to Space

Polymer chemist Cady Coleman had just defended her dissertation when she phoned a wrong number. The odd fellow who answered spoke in a thick Eastern European accent and demanded she pronounce his long consonant-laden name correctly. Amused and intrigued, she eventually did.

The trickster was Simpson. Coleman had been trying to reach a friend to meet her at a gallery where she planned to buy a planet as she tried to decide whether her next step would be NASA astronaut training. Coleman and Simpson kept talking and eventually met, adventured together, and married. She took his planets with her while living full time underwater during habitat training: “We scuba dived hours a day and may have left a few of those little spheres under the sea,” she says.

She took them to Antarctica on a meteorite-collecting expedition, gave them to her teammates, and decorated their holiday tree with them. The planets also traveled with her on two space shuttle missions and a six-month expedition to the International Space Station (she was the lead robotics and lead science officer). “We have photos of the planets floating in the window of the space station with Earth in the background,” she says with delight. “The spirit of Josh’s glass is encouraging people—whether in the arts or sciences—to consider what else there is to discover.”



FROM TOP: Simpson with his wife, astronaut Cady Coleman, at a 2022 Springfield Museum of Fine Arts exhibition about Simpson’s work. Planets floating in the International Space Station in 2001; Earth is in the distance. A planet at the North Pole.

TOP: Photo by Stacey Severn. MIDDLE: Photo by Cady Coleman. BOTTOM: Photo courtesy of Josh Simpson, photographer unknown.



“Cady’s career has influenced me for years, even before our son was born,” Simpson says, who also has a son from an earlier relationship. The couple long shuttled between the farm and their home in Houston, where Coleman worked at the Johnson Space Center. “While she was working I’d watch films shot by other astronauts and study photographs and satellite images of Earth. Cady’s also a pilot, and she encouraged me to learn how to fly. So I’ve spent a lot of time looking at Earth from the window of my Cessna, a perspective that informs my work, that gives me a sense of depth and an inkling of the overview effect that astronauts talk about.”

Good Chemistry

During the early craft shows in Rhinebeck, New York, Simpson would bring his small mobile furnace on a boat trailer for demonstrations. He’d also spend time with Carol Sedestrom (later Sedestrom Ross), and sometimes discuss craftspeople who were missing due to illness, injury, car breakdown, natural disaster, or housing dilemmas. In 1985, they decided to found the Craft Emergency Relief Fund (now CERF+), with Simpson as the fund’s first president. Since then, CERF+ has provided artists with more than \$3 million in emergency relief grants. Simpson has also served as president of the Glass Art Society, and he has taught, exhibited, and been honored around the globe.

ABOVE LEFT: Simpson warms an interstellar disk in preparation for the final spin of the glass. ABOVE RIGHT: Simpson finishes a small corona interstellar disk with Litchfield and Grace. OPPOSITE TOP: Detail, corona disk, 2019. OPPOSITE BOTTOM: corona hyperspace disk, 2020, 22 in. diameter.

When COVID-19 closed down the world a few years ago, Simpson found himself in the studio, working without any of his assistants. This was reminiscent of 2008, when the economy collapsed, galleries canceled orders, and Simpson was faced with the very real possibility of shutting down his studio. He chose, instead, to invest his savings and return to a project from the 1970s: attempting to reformulate the original chemical composition he’d created for his so-called corona glass. “Thirty years earlier, I was randomly mixing silver, tin oxide, cobalt, and copper in my furnace. The result was the most unbelievable glass that looked like the great Orion Nebula in the Milky Way. But I hadn’t written down that formula and I never was able to make it again! Then, due to the economic slowdown, with more free time and using a more scientific approach, I was able to concentrate on that glass once more.”

The result? A lexicon of formulas that have rendered his corona glass in colors and with depths that evoke deep-space phenomena. He’s also started using one of the formulas for his planets. “He makes magical things,” Coleman says, “through a fascinating mixture of technology, engineering, and art.”

“I wish I had another fifty years to just explore the chemistry of glass,” Simpson says. “It’s so spectacularly complicated and exacting. I don’t ever intend to retire. I’ve been unbelievably lucky during my career and just so blessed that people love the work I create. That’s what keeps me going.”

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