Einstein Domes

An iconic symbol of our planet is ripe for prime time.

By Andy Ross

Electronic globes are not a new idea. I outlined a proposal to make one for a setup I called the Globall Hyperatlas in a journal paper in 1991. The Globall was 128 centimeters (about four feet) in diameter and was mounted on a socket like a big light bulb. It showed imagery based on data that would today be delivered via the internet. The user could change or rotate the image from a handheld remote and might use it to view global weather or plan a vacation or study the Moon or Mars.

Other uses for the Globall were easy to imagine. Teamed with a few flat-screen monitors, it could help the head of a global corporation to keep track of his or her empire. Teamed with a good drilldown app, it could help police and security services worldwide pursue new levels of intrusive surveillance. A world dictator could use one to pick the next target city for his orbiting laser battlestation.

A variant of the globe I dreamed up later was a cut half in what I called the Weatherdome. This was a dome housing a hemispherical bubble 12.8 meters (42 feet) in diameter, posed like a museum piece or a sacred totem and surrounded by viewing galleries. The scale of one to a million made each millimeter on the bubble's surface represent a kilometer on the surface of planet Earth. It would be programmed to display a real-time image of the weather on the sunlit half of the planet from data beamed down by weather satellites.

With its enormous spherical surface lit by around a billion pixels, the Weatherdome would be an expensive way to check the weather. Perhaps it would provide a good interface tool for other people who needed a global overview. Climate scientists could simulate interventions to change the climate, food or water scientists could map strategies for pest control or drought relief, and future astronauts could plot descent trajectories onto any planet for which they had good surface data.

Today we'd shrink the interface into a VR headset, so all these use cases are unconvincing. Given that the technical challenge of building a Globall was daunting and that without a killer app it was just an overpriced lava lamp, my fantasy evaporated. But with imagination, we can do more today with the basic idea.

The big bubble in the Weatherdome offers a superbly vivid global perspective. Even better would be to hang an entire glass sphere from the roof of the dome like a giant disco mirror ball, paint the ceiling deep black, and let viewers gaze up in wonder at the celestial vision. The only way to get a better sense of the beauty of our planet would be to look down from a spaceship in orbit, which most of us will never do in real life.

If you don't plan to be an astronaut or to bliss out over space telescope images of the cosmos, this giant Globall offers the best big picture you could want. Imagine it suspended over your head under the black dome, perhaps with convenient trackballs at hand to let you rotate the image to bring a chosen region into view. Many of us would find this a magical experience, well worth a modest entry fee.

But I see something more pressing behind all this. Anyone concerned about the future of humanity must lament the fact that most people lack global awareness. For them, tribal, racial, religious, or national identities all too easily trump the wider view we must maintain to solve our biggest problems, such as climate change, environmental destruction, resource depletion, thermonuclear war, killer pandemics, or hostile AI.

These painfully global problems could lead to our extinction as a species unless we all learn to take a more planetary view of the human predicament. I still recall the giant leap in global awareness triggered by the images of Earth in space returned by the Apollo astronauts half a century ago. We need something like that now.

We could use a name for the temple to science we get by hanging a megascale Globall under a black vault in a white dome. I suggest we call them Einstein domes. Albert Einstein, more than any other person, symbolizes the scientific approach to the wider view that we need to tackle our planetary problems. True, he went further and contemplated the science of the entire spacetime universe, but all the better. What more suitable symbol for trusting in science as the best means to solve our biggest problems could we want?

The next question is where to build these domes. If we could expect a steady flow of people to come and muse in them, we might build them in all the major capital cities of the world. I'd like to think we could, but perhaps that's unrealistic. Most people don't care that much.

The risk of low audience turnout exposes a major deficit in far too many schools worldwide. We should be teaching all children everywhere to study science if they can. Even if they can't, they should be taught to respect science and its big picture.

Einstein domes could encourage people to respect and study science. They could include smaller exhibits explaining how the Globall works and how the data for it is gathered and presented. They could serve as hubs for any amount of scientific information and for guiding youngsters toward careers in science. Like temples, churches, or mosques, they could symbolize an entire approach to human life.

Here I must declare my faith. A scientific approach even to the deepest questions of human spirituality is for me the way to go. I'd vote to build Einstein domes on the best sites in the world. I'd love to see one built on the Temple Mount in Jerusalem, but it may be too soon for that one.

Reference: "The Globall Hyperatlas: A Development Proposal" *The Visual Computer* 8, 1–7 (1991)