PAUL LAFFOLEY/PHOTO BY LINDA NYLIND

Paul Laffoley says viewers can absorb alien inspiration from his *Thanaton III*.

ARTS

Think beyond

Joanne Baker plunges into an exhibition on visionaries who break all the rules.

Want to communicate with an extraterrestrial? Place your palms in the hand-shaped outlines and stare into the central disembodied eye of Paul Laffoley's painting *Thanaton III* (1989). The US artist and architect maintains that the graphics, mandalas and symbols gracing the lower part of the canvas were passed on to him by an alien called Quazgaa Klaatu. By touching the painting, Laffoley suggests, you too may absorb that information.

Time travellers and savants are also among the 22 visionaries whose remarkable works are on show at London's Hayward Gallery. The *Alternative Guide to the Universe* exhibition celebrates artists whose ideas lie beyond the mainstream, but are often directed towards solving real-world problems. Following a spate of exhibitions that explore the notions of 'fringe' scientists, inventors and architects — notably at the Wellcome Collection in London and the Institute For Figuring in Los Angeles, California (see *Nature* **479,** 40; 2011) — this wide-ranging show reveals how the power of unconstrained thought might be used for healing, theorizing and utopia-building.

ALTERNATIVE GUIDE TO THE UNIVERSE
HAYWARD GALLERY
London. Until 26 August.

Many of the concepts bear reflection. Laffoley's alien 'speaks' in scientific terms, an assumption also central to the work of the SETI (Search for Extraterrestrial Intelligence) project. And although the alternative quantum theories depicted would never be accepted by a physics journal, they are built around conventional physical concepts such as oscillations and loops. The exhibition's greatest value lies in giving the green light to out-of-the-box thinking.

Architecture steals the show. Most ingenious is Laffoley's proposed design for Das Urpflanze Haus (the primordial plant house), an organic structure that can be grown from genetically altered seeds. Inspired by Johann Wolfgang von Goethe's 1790 description of the archetypal plant, or Urpflanz, as the basis for all botanic growth and form, Laffoley imagines bioengineering a ginkgo tree — one of the oldest known fruiting plants — to sprout pods that people could live in.

He suggests that the high electrical potential of spinach could be harnessed to power such a home and that bioluminescence could light it. This idea is not entirely fanciful: architects and synthetic biologists are already working together on carbonate shells and bioluminescent lighting for buildings (see *Nature* **467,** 916-918; 2010).

Laffoley, who *The New York Times* called "one of the most unusual creative minds of our time", believes we are entering a new phase of modernism that will entail an architecture that is physically alive. He calls it the Bauharoque, mixing the Bauhaus school of design's utopian ideals with the theatricality of Baroque art and architecture.

This aesthetic is shared by Canadian architect Richard Greaves's human nests, in which windows dangle and branches and beams canoodle. Greaves doesn't use nails, but binds his cabins with rope so that the structures can move. His precarious shelters, made in a Canadian field from recycled wood and salvaged architectural materials, are on show in photographs and a model.

Equally motile and dramatic are walking, jumping, wall-climbing robot dolls by Wu Yulu, a Chinese farmer and self-taught roboticist. Their shabby, child-like appearance seems more humane than shiny plastic and metal cyborgs, or the robot cosmonauts sketched in the 1950s and 60s by French civil engineer Jean Perdrizet that are also on show.

Physics and maths receive a fresh take here. Philip Blackmarr depicts his 'quantum geometry' in pen-and-ink drawings of vibrating sinusoidal waves so precise that they resemble computer printouts. Connections between the Mayan and Chinese number systems and Goethe's colour theory are explored in rainbow chequerboard paintings by American artist Alfred Jensen. George Widener, a professed 'time traveller' and autistic, can tell immediately what day of the week any future date will fall on, and turns dates into intricate sketches of magic number squares and cities.

Any scientist visiting this alternative universe will find themselves, as I did, poring over blueprints to try to figure out how the machines depicted work, or discerning the mathematical patterns behind the painted squares. Given how much we still don't know, this show importantly asks: are you sure your universe is the right one? ■

Joanne Baker *is senior comment editor at* Nature.