

# 2024: The year in science

## BANANA-SHAPED GALAXIES

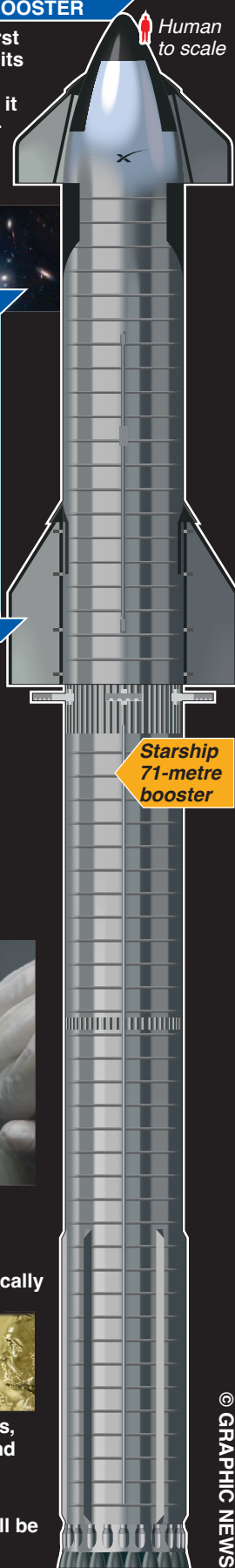
**JANUARY:** Astrophysicists report that newborn galaxies in the very early universe – about 500 million years after the Big Bang – were “banana-shaped.” First spotted by the *Hubble Space Telescope*, the powerful *James Webb Space Telescope* has examined 4,000 newborn galaxies, seeing them too



## SPACEX CATCHES BOOSTER

**OCTOBER:** For the first time *SpaceX* catches its *Starship* super heavy first-stage booster as it returns to the launchpad in Texas

*SpaceX* plans to use 121-metre rocket – world’s biggest – to send people back to Moon



## SPARK OF LIFE



**AUGUST:** Four billion years ago, Earth’s atmosphere was composed of inert nitrogen and carbon dioxide gasses

Now, Harvard scientists have identified how lightning strikes may have acted as a vital spark, creating chemical reactions necessary to form the building blocks of life

## RECHARGEABLE CALCIUM BATTERY

**APRIL:** A battery based on calcium is potential alternative to lithium – calcium being 2,000 times more abundant on Earth



**Coin-cell battery** Powering blue light-emitting diode bulb relies on reaction between calcium and chlorine to form calcium chloride (*white powder*)

*Battery charges and discharges 700 times at room temperature*

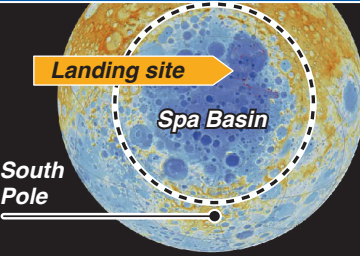
## FACTORY OF THE FUTURE



**APRIL:** A giant 3D printer has been unveiled by the University of Maine. The university says it has beaten its own record for world’s largest polymer 3D printer – the new unit is four times bigger than its previous machine

Dubbed **Factory of the Future 1.0**, the device can use thermoplastic polymers to print objects as large as 29m long by 9.8m wide and 5.5m high, at rate of 230kg per hour

## FAR SIDE OF THE MOON



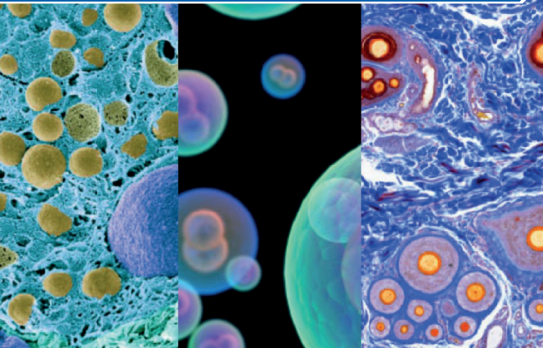
**MAY:** China launches its *Chang’e-6* probe, a robotic sample-return mission to Moon’s far side



**JUN:** Probe collects 1.9kg of lunar soil

**NOV:** Volcanic rock contained in sample dates back 2.8 billion years, suggesting landing site was volcanically active at that time

## HUMAN CELL ATLAS TAKES SHAPE



**NOVEMBER:** Researchers have created an early map of the Human Cell Atlas (HCA) of the human body’s estimated 37.2 trillion cells

**HCA scientists plotted cells in mouth, stomach, intestines and those that guide how bones and joints develop to help fight diseases**



**DECEMBER:** Nobel Prizes in Physics, Chemistry, Physiology, Literature and economic science are presented in Sweden

The Nobel Peace Prize ceremony will be held in Norway