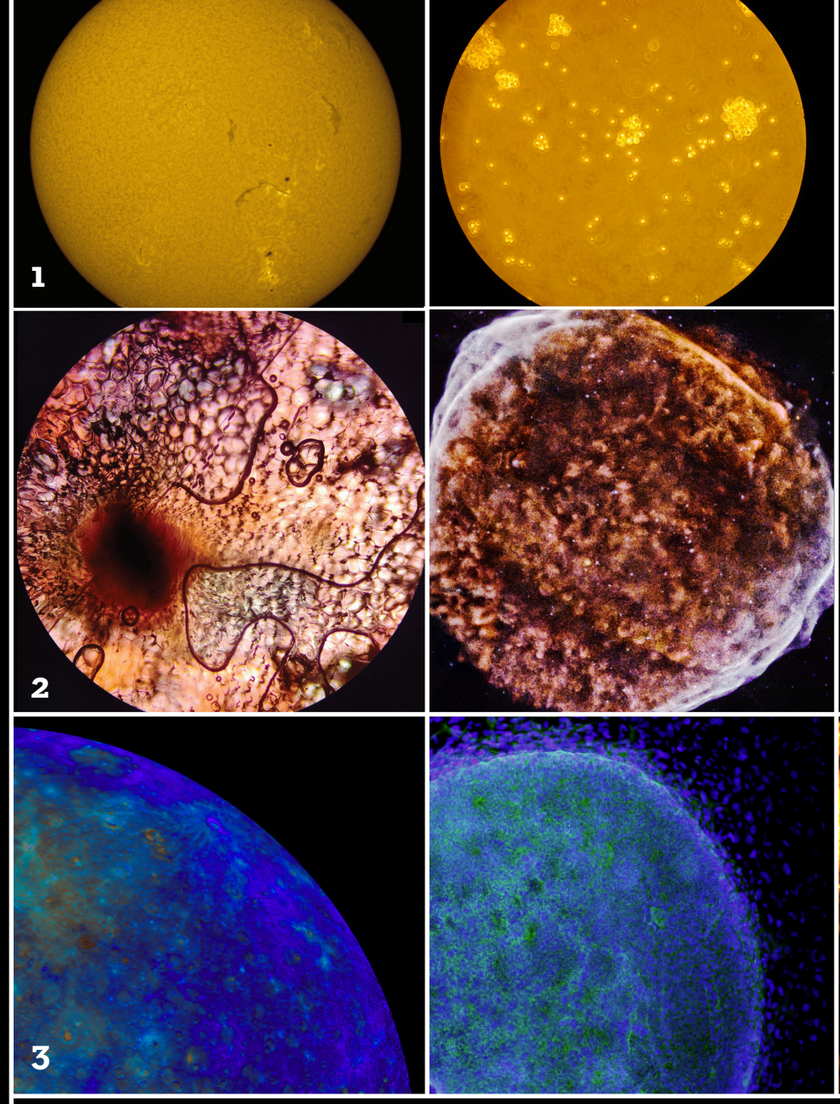
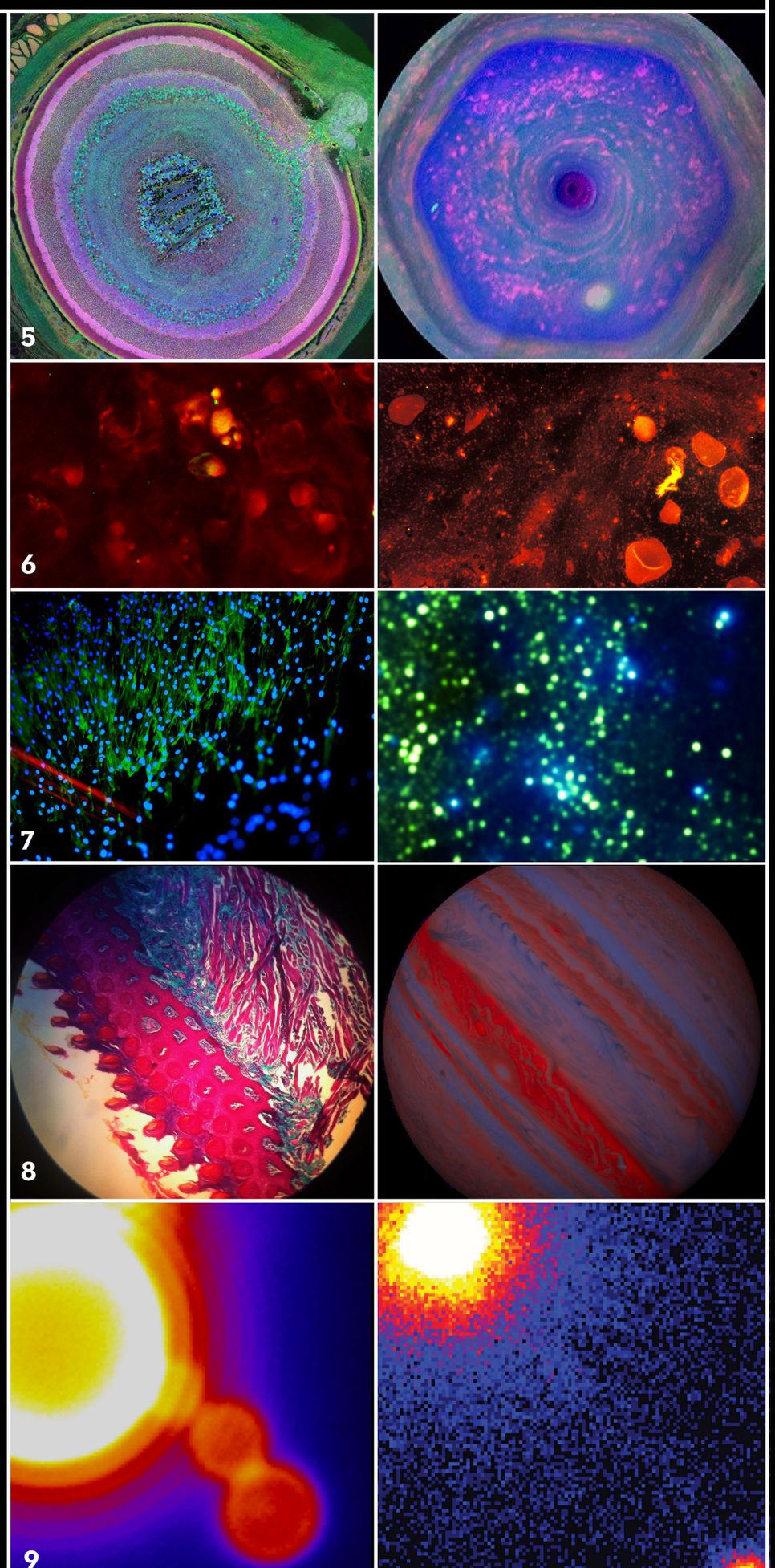
We often think of the Earth as large – and it is compared to things on the human scale. Yet, a million Earths can fit inside our Sun, which is very small compared to many other objects in space. Likewise, we generally think of grains of sand as being incredibly small in contrast to experiences in our everyday lives. However, the realm of cellular and molecular biology and its constituents, for example, are much smaller than that sand grain and impossible for the unaided eye to see.

The simple question of "how big is this?" may not be so simple to answer. We can explore this idea of scale through the imagery that different disciplines of science generate. In these images of both the large and the very small, we can find patterns, identify color (which is open applied during the image-making process), and examine texture. Despite their disparate subject matters, these images possess many similarities, offering us an opportunity to explore the wonders and beauty of science from "micro" to "macro".

MICRO TO MACRO



National Aeronautics and Space Administration



1. Our Sun
The Sun gives off many kinds of light from radio waves to gamma rays, some of which can be seen in this image. The diameter of our Sun is about 864,000 miles (mi) or 1.4 million kilometers (km). *Credit: Alan Friedman*

Raji Cells
Bunches of cells from a Raji cell line (a population of cells descended from a single cell) can lead to a strain of Epstein-Barr virus in humans. Raji cells are about 0.000005-0.000008 meters in diameter. *Credit: 22Kartika CC BY-SA 3.0*

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2. Onion Cells
Examining onion cells under a microscope, you can see both a nucleus (dark region off center) and some bubbles of air (dark curvy lines). Onion cells range in size from 0.000250-0.0004 meters across. *Credit: Anastasia, CC4*

SN1006
This X-ray image shows a supernova remnant, the remains of an exploded star. Image is about 70 light years or about 400 trillion mi/644 trillion km across. *Credit: NASA/CXC/Middlebury College/F.Winkler*

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3. Mercury
Mercury, our smallest planet, and the one closest to the Sun, is about 3,032 mi or 4,879 km in diameter. Its surface is heavily pockmarked like our Moon, but it also has striations, making it topographically interesting. *Credit: NASA/Johns Hopkins/Institution of Washington.*

Embryonic Stem cells
These embryonic stem cells are shown as a colony growing on a cell in connective tissue. They are about 0.000014 meters in diameter. *Credit: California Institute for Regenerative Medicine*

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4. Neurons
This image shows neurons from the eye of a 0.0035-meter 72-hour old zebrafish larva that was captured using a special microscope with a laser. *Credit: Jaydeep Sidhaye CC BY-SA 4.0*

Sunspot
This dark central region shows a planet-sized sunspot on our Sun's surface. Sunspots come in a range of sizes but the one in this image is about 14,000 mi/23,000 km across. *Credit: SST, Royal Swedish Academy of Sciences*

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5. Mouse Eye
Researchers can study the roles of cells in metabolism by tagging and studying certain molecules by color. This image contains just a tiny slice of a common mouse's eye that spans 0.00332 meters in diameter. *Credit: Bryan William Jones and Robert E. Marc, University of Utah*

Saturn's North Pole
Saturn is a giant gaseous planet. At the center of its northern pole, we find a hexagon-shaped wavy jet stream of 200-mile-per-hour winds (about 322 km per hour) and a large rotating storm at its center. The stream is about 20,000 mi/30,000 km across. *Credit: NASA/JPL*

6. Small Magellanic Cloud
At a distance of 200,000 light years, the Small Magellanic Cloud (SMC), with its millions of stars, is one of the Milky Way's closest galactic neighbors. The image is about 175 light years, or 900 trillion mi/1448 trillion km, across. *Optical: NOAO/CTIO/MCELS coll.; Radio: ATCA/UIUC/R.Williams et al.*

Mycobacterium Tuberculosis
Seen here under ultraviolet light with acid-fast stain, these bacteria can lead to tuberculosis infections. The rods, glowing in yellow, are between 0.000002 to 0.000004 meters in length. *Credit: Ronald W. Smithwick, USCDCP*

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7. Human Progenitor Cells
Progenitor cells are biological cells that have a tendency to differentiate into a more specific type of cell. Unlike stem cells, progenitor cells (around 0.000000007 meters in length) can only divide a limited number of times. *Credit: Rose Spear, Engineering at Univ. of Cambridge*

DB58
This is a cluster of bright, young stars is seen in X-ray and infrared light near the center of our Milky Way galaxy about 12 light years (70 trillion mi/113 trillion km) across. *X-ray: NASA/CXC/Northwestern U./C.Law & F.Yusef-Zadeh; Infrared: 2MASS/UMass/IPAC-Caltech/NASA/NSF*

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8. Rabbit Tongue Cells
An optical microscope with a magnification power of forty was used to image muscle fibers, collagen fibers, the keratin layer and the outer layer of cells in a rabbit's tongue. *Credit: Mohit Lalwani, CC BY-SA 4.0*

Jupiter
Jupiter, a gas giant, is the most massive planet in our Solar System and has over 50 known moons. At its equator the diameter of Jupiter is about 89,000 mi/143,000 km. *Credit: NASA/GSFC*

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9. Membrane Fission
Some cells can be divided into parts through fission – a process when the layer that binds or partitions cells, etc. is split into two distinct membranes. In this image, the process resembles "beads on a string." When one of the beads is cut off, membrane fission has occurred. Scale is between .00000005-.0000001 meters. *The Scripps Research Institute/R.Ramachandran, et al.*

3c273
This X-ray image shows an extremely powerful jet originating from gas falling toward a supermassive black hole. The jet is enormous, stretching across more than 100,000 light years (600,000 trillion mi/965,606 trillion km) of space, a size comparable to our own Milky Way galaxy. *Credit: Anastasia, CC4*