PERIODIC TABLE of CALTECH

The Caltech universe is rich in its own unique elements, from discoveries to landmarks, alumni to traditions. In this, our take on the classic periodic table, you will find information on 118 elements that make Caltech Caltech. For more on the people, places, and bits of history that are the building blocks of the Institute, visit **caltech.edu**.

H 1


Caltech's **Honor Code** states that no member of the community shall take unfair advantage of any other member of the community.

He 2

George Ellery Hale was one of the three founders of modern-day Caltech.

Li 3

LIGO's 2015 detection of gravitational waves proved a major prediction of Einstein's theory of relativity.

Be 4

Caltech's mascot is the **beaver**—an homage to nature's engineer.

B 5

Faculty at the **Beckman Institute** develop methods, instrumentation, and materials for fundamental research in chemistry and biology.

C 6


The California Institute of Technology, or **Caltech**, was given its current name in 1920.

N 7

Chemist **Arthur Amos Noyes** was one of the three founders of modern-day Caltech, and established the Institute's educational philosophy.

O 8

Landscape architect Florence Yoch designed the **Olive Walk**, the campus's approach to the Athenaeum, as an avenue of olive trees flanking a brick path.

F 9

The **Fleming Cannon** is a working cannon that is fired a few times throughout the year.

Ne 10

Caltech scientists have invented **neuroprosthetics** that are helping paraplegics move and the blind see.

Na 11

Caltech manages **NASA's Jet Propulsion Laboratory**, a leader in robotic exploration of the solar system.

Mg 12


You can read the latest news and features from ***Caltech* magazine** at magazine.caltech.edu.

Al 13

The mission of the **Caltech Alumni Association** is to strengthen ties between alumni and the Institute and its students.

Si 14

Through a process known as very-large-scale integration (VLSI), Caltech's Carver Mead made it possible for tens of thousands of transistors to be packaged on a single **silicon chip.**

P 15

Caltech researchers are behind the world's most sophisticated astronomical observatories, including the **Palomar** and W. M. Keck observatories.

S 16

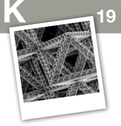
Caltech's **sustainability** program includes the use of solar panels and electric-vehicle charging stations.

Cl 17

The more than 100 **clubs** on campus range from juggling and alpine climbing to robotics and entrepreneurship.

Ar 18

Scientists at the **Joint Center for Artificial Photosynthesis (JCAP)** seek to create the foundation for a scalable technology that converts carbon dioxide, water, and sunlight into renewable fuels.

K 19

Faculty at the **Kavli Nanoscience Institute (KNI)** advance cross-disciplinary research in the areas of nanoscience and nanotechnology.

Ca 20

Researchers at the **Center for Autonomous Systems and Technologies (CAST)** seek to teach robots and drones to think independently.

Sc 21

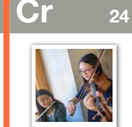
Caltech's 18 Division III varsity teams compete primarily in the **Southern California Intercollegiate Athletic Conference**, or **SCIAC**.

Ti 22

Scientists at the **Tianqiao and Chrissy Chen Institute for Neuroscience at Caltech** aim to deepen understanding of the brain and how it works.

V 23

The **Voyager** spacecraft, built at JPL, have journeyed to the outer planets and beyond, revolutionizing understanding of the solar system and the universe.

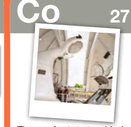
Cr 24

Two-thirds of Caltech undergrads play a musical instrument or sing in one of the Institute's **choirs**.

Mn 25

Physicist **Robert Andrews Millikan** was one of the three founders of modern-day Caltech, its second leader, and its first Nobel laureate.

Fe 26

At Caltech, economists, mathematicians, computer scientists, psychologists, and neuroscientists bring their expertise to bear on the field of **financial economics.**

Co 27

The **coelostat** atop Linde + Robinson Laboratory is a solar observatory that uses mirrors to project an image of the sun into the main lobby.

Ni 28

Caltech researchers found evidence for a potential **ninth planet** that has a mass about 10 times that of Earth.

Cu 29

The **Curiosity Mars rover** celebrated its fifth anniversary of exploring the Red Planet in 2017.

Zn 30

Astronomers at the **Zwicky Transient Facility** search the night sky for rare and exotic transients.

Ga 31

Faculty at **GALCIT**, the **Graduate Aerospace Laboratories of Caltech**, train future aerospace experts.

Ge 32

Researchers in the **Division of Geological and Planetary Sciences (GPS)** seek insights into Earth's natural systems to understand the past, present, and future of the solar system's planets.

As 33

Caltech's focus on **next-generation astronomy** is allowing its astronomers and planetary scientists to discover new worlds and listen in on the universe.

Se 34

The **Caltech Seismological Laboratory** is the Institute's center for seismic studies and the preeminent source for earthquake information around the world.

Br 35


Break Through: The Caltech Campaign, a philanthropic initiative, will provide Caltech's scholars with resources to discover and innovate for generations to come.

Kr 36

The **Kepler Mission**, developed by JPL, surveys the Milky Way galaxy to discover planets in or near the habitable zone.

Rb 37

Scholars at the **Donna and Benjamin M. Rosen Bioengineering Center** conduct research at the intersection of biology and engineering.

Sr 38

Through the **Summer Undergraduate Research Fellowships (SURF)**, students have the opportunity to do research with mentors working at the frontiers of their fields.

Y 39


The **Caltech Y** offers opportunities to engage in educational programs, outdoor adventures, community service, social activities, and cultural events.

Zr 40

Students accepted to Caltech receive a financial aid package that leaves **zero percent** of their demonstrated need unmet.

Nb 41

37 Caltech faculty and alumni have won 38 **Nobel Prizes**, with Linus Pauling receiving the awards for both chemistry and peace.

Mo 42

Caltech researchers discovered a link between the gut **microbiome** and the deterioration of motor skills in Parkinson's disease.

Tc 43

Staff in the **Office of Technology Transfer and Corporate Partnerships** help scientists and engineers on campus or at JPL transfer the fruits of their research to the commercial sector.

Ru 44

Caltech's **rigorous academic standards** prepare the Institute's students for their future.

Rh 45

Beno Gutenberg and Charles Richter developed the **Richter scale**, which measures the energy of an earthquake.

Pd 46

Caltech is an integral part of and partner with the city of **Pasadena**, and is its largest employer.

Ag 47

By studying the decay rate of lead isotopes in Earth's oldest rocks, Clair Patterson determined the **age of the planet:** 4.55 billion years.

Cd 48

Research by Caltech scientists described the nature of the **chemical bond**.

In 49

Caltech's **quantum information scientists** are building the foundations for future technologies such as quantum computers.

Sn 50

Faculty at the **Resnick Sustainability Institute** foster advances in energy science and technology.

Sb 51

In 2016, a team of Caltech students took first prize for their **robotic submarine** at the International RoboSub Competition.

Te 52

The **Center for Teaching, Learning, and Outreach** supports multifaceted educational and outreach efforts.

I 53

IPAC astronomers partner with researchers from around the world to advance exploration of the universe.

Xe 54

Chester Carlson (BS '30) invented the electrophotographic process that came to be known as **xerography**, Greek for "dry writing."

Cs 55

Computer science is the most popular major at Caltech; 95% of undergraduates take at least one CS course.

Ba 56

The 1,136-seat **Beckman Auditorium** hosts events throughout the year. It was built to be a "monumental structure" anchoring the north end of campus.

Hf 72

Hollywood films and television shows from *Legally Blonde* to *Modern Family* have been filmed at Caltech.

Ta 73

Theater Arts Caltech **(TACIT)** produces and performs two or more plays each academic year.

W 74

Caltech's **wind tunnels** were used to test WWII war planes.

Re 75

Caltech **researchers** have discovered quasars, started the field of molecular biology, and deciphered Earth's inner workings.

Os 76

Frank Capra, the **Oscar-winning** director of *It's a Wonderful Life*, graduated from Throop College of Technology (now Caltech) in 1918.

Ir 77

The Spitzer telescope is designed to detect **infrared radiation**.

Pt 78

Researchers on campus and at JPL have been issued more **patents** per faculty member than at any other university in the United States.

Au 79

There are 70,000 publications in **CaltechAUTHORS**, a repository that receives more than 3,000 new papers per year.

Hg 80

Two Caltech alumni pioneered the field of genomics and made possible the **Human Genome Project**.

Tl 81

The **turtles** in Throop Pond are a must-see on any walking tour of Caltech.

Pb 82

Research at Caltech in the 1960s showed that **lead** was accumulating in the environment, prompting regulations in the U.S. auto, gasoline, and paint industries.

Bi 83

In the **Division of Biology and Biological Engineering (BBE)**, researchers work to reveal nature's mechanisms and what happens when its processes go awry.

Po 84

The **Gene Pool** derives its name from the colored tiles laid along its floor in a double-helical pattern reminiscent of DNA strands.

At 85

Caltech's faculty club, the **Athenaeum**, opened in 1931 to promote social, cultural, and intellectual exchange.

Rn 86

The Institute aims to significantly decarbonize the campus's electrical supply by 2025 through **renewable energy** projects.

Fr 87

First-year student orientation is a weeklong retreat called **Frosh Camp**.

Ra 88

Caltech's **student-faculty ratio** of 3:1 is one of the nation's lowest.

Rf 104

A brilliant theoretical physicist and original thinker, **Richard Feynman** may be best known for his *Lectures on Physics*.

Db 105

Dabney Hall was built as the home of the humanities at Caltech and includes a performance space and gardens.

Sg 106

In 1987, to honor Hollywood's centenary, Caltech students changed the famous **Hollywood sign** to read "Caltech."

Bh 107

One of the primary goals of the NuSTAR mission is to find and study **black holes** both within the Milky Way galaxy and in other galaxies.

Hs 108

Faculty in the **Division of the Humanities and Social Sciences (HSS)** work to provide insights into human history, creativity, and decision making.

Mt 109

The four telescopes built at **Mount Wilson Observatory** each became the largest in the world in their time.

Ds 110

Caltech is willing to take risks and even to fail when there is the potential for transformational **discovery**.

Rg 111

Caltech researchers have done pioneering work on understanding **regulatory genes** and how they impact development.

Cn 112

The **Caltech-Huntington Humanities Collaborations** bring scholars together for two-year research modules.

Nh 113

Governmental agencies that fund Caltech research include the **National Institutes of Health (NIH)** and the National Science Foundation (NSF).

Fl 114

In Caltech's **Flume Lab**, scientists study fluvial bedrock erosion, sediment transport, and initiation of debris flows.

Mc 115

Since 2002, 10 Caltech faculty have been named **MacArthur Fellows**, selected for their "exceptional creativity."

Lv 116

Caltech's residential life program fosters a collaborative and close-knit learning and **living environment**.

Ts 117

Almost every electronic device we have today uses the **transistor** co-invented by Caltech alum William Shockley (BS '32).

Og 118

Caltech's adoption of the color **orange** carries back to 1900, when an orange grove lined the campus.

La 57

Caltech is minutes from downtown **Los Angeles** and within easy reach of the best that Southern California has to offer.

Ce 58

Researchers in the **Division of Chemistry and Chemical Engineering (CCE)** study nature's most intricate processes on scales from the subatomic to the macroscopic.

Pr 59

Caltech students gain **perspective** by taking humanities classes in addition to focusing on STEM.

Nd 60

58 Caltech faculty and alumni have received a **National Medal of Science**.

Pm 61

Researchers in the **Division of Physics, Mathematics and Astronomy (PMA)** create and use technologically advanced tools to explore and understand the universe.

Sm 62

Arie Haagen-Smit linked Southern California's **smog** to automobile exhaust, prompting the formation of the California Air Resources Board.

Eu 63

For the planned **Europa Clipper** mission, JPL would build and send a probe to Jupiter's icy moon in the 2020s.

Gd 64

Gordon Moore (PhD '54), who founded Intel, is known for Moore's Law, his prediction that the number of transistors that can fit on a chip would double every year.

Tb 65

Caltech faculty study **turbulance** to reduce drag and make transportation systems more energy efficient.

Dy 66

During **Ditch Day**, one of Caltech's oldest traditions, seniors set complex challenges for other students to solve.

Ho 67

Caltech has eight undergraduate "**houses**," and a new residence hall.

Er 68

The famous *Pale Blue Dot* photograph of **Earth** was taken by the Voyager 1 spacecraft in 1990 at a distance of 6 billion kilometers.

Tm 69

One of Caltech's academic options explores the impact of relativity theory on the concepts of space and **time**.

Yb 70

The Big T was Caltech's annual student **yearbook** from 1920 to 2011.

Lu 71

Caltech geologists analyzed **lunar samples** collected by the Apollo missions.

Ac 89

The **Caltech Associates** is a philanthropic organization that supports Caltech and hosts both scholarly and social events.

Th 90

Amos G. Throop first founded Caltech as Throop University in 1891.

Pa 91

Through the **Einstein Papers Project**, scholars are collecting, transcribing, annotating, and publishing the scientist's complete collected papers.

U 92

Caltech educates approximately 1,000 **undergraduates** and 1,200 graduate students annually.

Np 93

Newtonian physics is a course taken by all Caltech undergraduates.

Pu 94

Mike Brown's discovery of Eris led to **Pluto**'s demotion to dwarf planet status in 2006.

Am 95

Caltech's scholars take **ambitious** intellectual risks to revolutionize understanding of the world.

Cm 96

Caltech's **core curriculum** ensures a strong foundation in mathematics and the natural sciences.

Bk 97

The Caltech Library houses **books** and special collections, and provides access to digital resources such as research papers, theses, and ebooks.

Cf 98

Caltech Dining Services locations include the **Chandler Café**, the Red Door Marketplace, and the Café at Broad.

Es 99

Faculty in the **Division of Engineering and Applied Science (EAS)** work across disciplines to both conceive and design tomorrow's world.

Fm 100

Researchers at Caltech use functional magnetic resonance imaging **(fMRI)** to understand the brain activity that underlies and creates human decisions.

Md 101

Faculty in the **Andrew and Peggy Cherng Department of Medical Engineering** emphasize the development of medical technologies and devices.

No 102

The **North Athletic Field** was upgraded with high-quality artificial turf to allow year-round use for a wide range of campus activities.

Lr 103

Caltech alum Charles H. Townes (PhD '39) helped to invent the maser and the **laser**.

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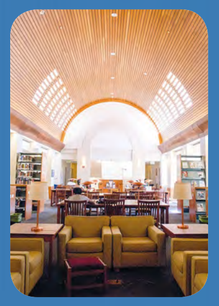
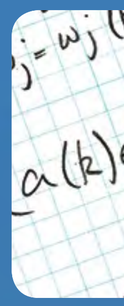
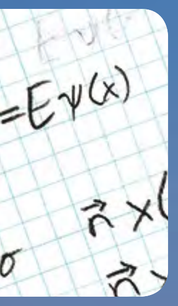
Caltech







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