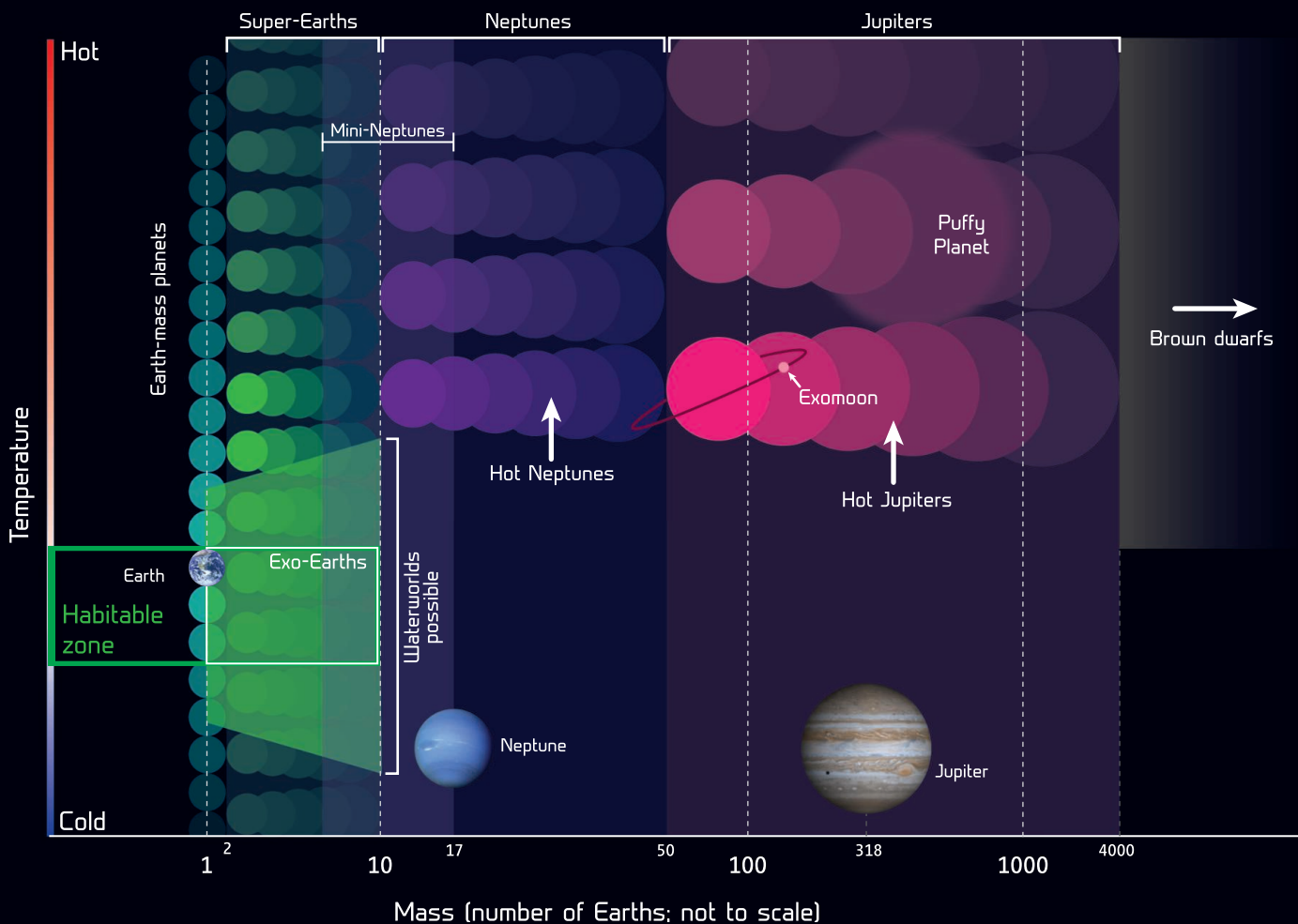


... And a Glossary of Their Quarry

—LIZZIE WADE



Hot Jupiter

Gas giants more than 50 times the mass of Earth orbiting too close to their stars to be habitable. Make up 42% of confirmed planets. Example: **51 Pegasi b**.

Puffy Planet

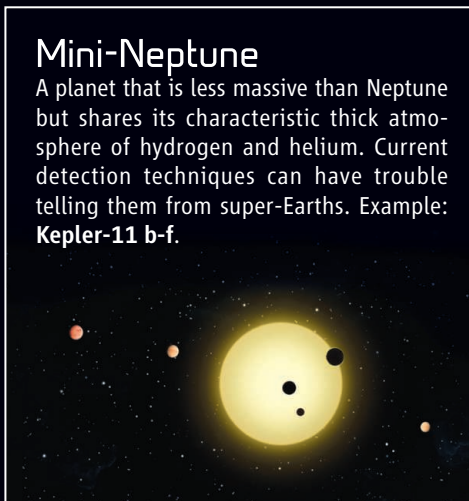
Similar to a hot Jupiter in mass and proximity to a star, but much less dense and thus larger. Synonym: Inflated hot Jupiter. Example: **HAT-P-1**.

Hot Neptune

Planets between 10 and 50 Earth masses orbiting close to their stars. Example: **Gliese 436 b**.

Mini-Neptune

A planet that is less massive than Neptune but shares its characteristic thick atmosphere of hydrogen and helium. Current detection techniques can have trouble telling them from super-Earths. Example: **Kepler-11 b-f**.



Super-Earth

A planet with about two to 10 times the mass of Earth. Can be hard to distinguish from a mini-Neptune. Example: **Kepler-62 e and f**.

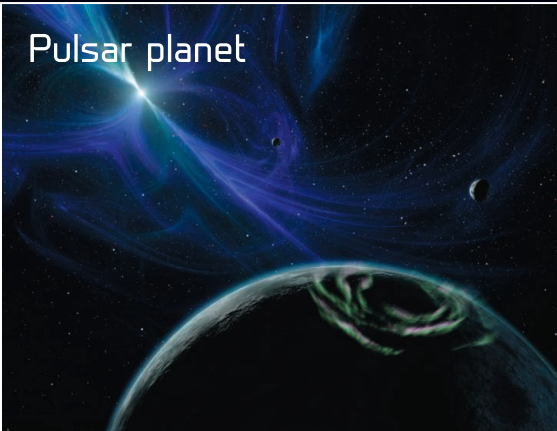
Earth-mass planet

A planet about the mass of Earth, but not necessarily within its star's habitable zone. Example: Planet orbiting **Alpha Centauri Bb**.

Exo-Earth

A rocky planet with one to 10 times the mass of Earth, orbiting in the habitable zone of its star. Possible example: expected any time. Synonyms: Twin Earth, Goldilocks planet, Earth 2.0, Earth analog, Earth-like planet.

Pulsar planet



An exoplanet orbiting a pulsar, a spinning neutron star left behind after a supernova; probably debris from the explosion, trapped by the neutron star's strong gravity. Only a handful are known. Not habitable. Examples: **PSR 1257+12 b, c, and d**, the first exoplanets ever discovered back in 1992.

Rogue planet



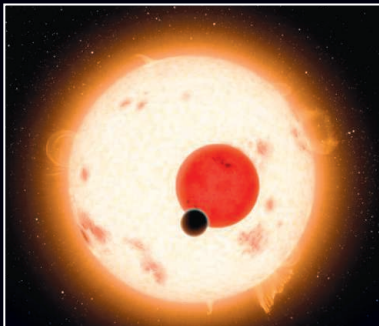
A planet that does not orbit a star. Astronomers don't know whether these wandering planets were ejected from star systems or formed by themselves in interstellar space. Rogue planets can be up to 13 times the mass of Jupiter; more-massive bodies are classified as brown dwarfs. Without stars to keep them warm, they are always frigid. Synonyms: orphan planet, homeless planet, nomad planet, free-floating planet, sub-brown dwarf. Example: **CFBDSIR 2149-0403**.

Exomoon



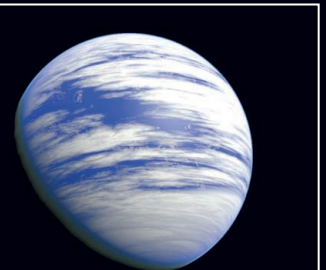
A moon orbiting an exoplanet. Some exomoons of gas giants may have molten interiors thanks to tidal heating, which could keep them warm even outside their stars' habitable zones and make them easy to spot from afar. But so far, no exomoons have been observed. Possible example: **Fomalhaut b**.

Circumbinary planet



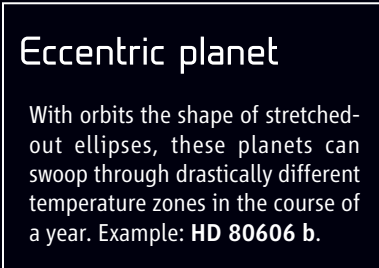
A planet that orbits a binary star system and thus has two suns instead of one. Examples: **Kepler-16 b, Tatooine**.

Waterworld



A super-Earth covered in water—in the form of ice, oceans, or a water-vapor atmosphere, depending on the planet's proximity to the star. Example: **Gliese 1214b**.

Eccentric planet



With orbits the shape of stretched-out ellipses, these planets can swoop through drastically different temperature zones in the course of a year. Example: **HD 80606 b**.

Core planet



The rocky core left behind after the gas of a hot Jupiter evaporates as a result of orbiting so close to its star. Synonym: chthonian planet, evaporated remnant core. Example: **COROT-7b** (suspected); **HD 209458 b** is in the process of evaporating.

Brown dwarf



Sometimes called a failed star, a brown dwarf forms when a cloud of gas collapses but is not massive enough to ignite the fusion reactions that fuel fully formed stars. Brown dwarfs can be 13 to 75 times the mass of Jupiter. Less massive bodies are rogue planets; more massive ones can sustain fusion and are thus stars. Some brown dwarfs have their own planets. Example: **2M1207**.