Glossary of Mars Program and Scientific Terms

From The Mars Colonist: Training for the Symbiocene — *Book Three*

This program draws on the real institutions, missions, and research programs that are, as of this writing, actively preparing for human exploration of Mars. The terms below are the surrounding world of Mars-program science and space-analogue research that this book assumes some familiarity with.

Term	Definition
Anthropocene	The proposed current geological epoch, defined by decisive, planet-scale human impact on Earth's climate, ecosystems, and geology. The term against which the Symbiocene is offered as a hoped-for successor.
Symbiocene	A term coined by the Australian environmental philosopher Glenn Albrecht (2016) for a future era in which human activity is re-integrated with, rather than set against, the rest of life. The organizing concept of this program and its companion volume, *The Human Imperative*.
Terraforming	The hypothetical, long-timescale process of deliberately modifying a planet's atmosphere, temperature, and surface chemistry to make it habitable for Earth-derived life.
ESA	The European Space Agency, coordinating Europe's space programs, including the human-spaceflight preparation research conducted at Concordia Station.
Concordia Station	A permanent French–Italian research base at Dome C on the East Antarctic Plateau, jointly operated by IPEV and PNRA. Used by ESA since 2005 as a space-analogue environment.
IPEV	The Institut polaire français Paul-Émile Victor (French Polar Institute), co-operator of Concordia Station with PNRA.
PNRA	The Programma Nazionale di Ricerche in Antartide (Italian National Antarctic Research Programme), co-operator of Concordia Station with IPEV.
Dome C	The site on the East Antarctic Plateau, roughly 3,200 metres above sea level, where Concordia Station stands — one of the most isolated inhabited places on Earth.
Winter-over	The roughly nine-to-ten-month period each year when Concordia (or a comparable polar or space station) is completely cut off from resupply or evacuation.
Analogue environment (space analogue)	A location on Earth whose isolation, confinement, or environmental extremity is used to study conditions relevant to long-duration spaceflight, in the absence of an actual mission.
	Shorthand in the spaceflight-psychology literature for an Isolated, Confined, and Extreme

ICE environment	environment — the formal research category that includes Concordia Station and, eventually, a Mars settlement.
EVA (Extravehicular Activity)	Work performed by a crew member outside a spacecraft or habitat, typically in a pressurized suit.
Closed-loop life-support system	A system that recycles air, water, and waste products within a sealed habitat rather than depending on continuous resupply from Earth.
Launch window	The limited, periodically recurring interval — roughly every twenty-six months — during which a spacecraft can travel between Earth and Mars using a practical amount of fuel.
Long-duration spaceflight	Any mission lasting many months to years, associated with a distinct body of psychological and physiological research, much of it conducted at Concordia.
Crew cohesion	The degree of trust, mutual reliance, and shared purpose within a small, confined team. A central outcome measure in analogue and spaceflight psychology research.
Biosphere	The sum of all living systems and their interactions on a planet. Mars currently has none of its own.