

Abstract

Terrestrial Analogue Sites are places on Earth with assumed past or present geological, environmental or biological conditions of an extra-terrestrial body such as Mars. Analogue sites are used in the frame of space exploration to either study geological or biological processes observed on other planets, or to prepare astronauts for their missions.

The Dallol hydrothermal field is a remote volcanic area of the northern Danakil Depression in Ethiopia. Surrounded by a wide saline region, Dallol area is the hottest and one of the most acidic places of the planet. Here, the rusty and hostile ground has no visible life, therefore this alien environment can host life in a very extreme physical and chemical setting. The geological features and chemical-physical environmental parameters of the Dallol and its location close to regional basaltic volcanism of planetary-scale importance make it a suitable analogue to ancient Mars's environments.