

Sample RAG Testing Document: The Planetary Survey Report

Page 1: Introduction to Exoplanet Xylos

The primary objective of the **Alpha Mission** (code name: A-74) was to survey the exoplanet **Xylos** (designation: Kepler-186f). Xylos is classified as a **terrestrial world** residing in the habitable zone of a red dwarf star. The surface temperature averages 22°C but can drop to 5°C in the northern hemisphere during its **80-day winter cycle**.

A key discovery reported on **March 15, 2077**, was the presence of a unique biosignature: **Chlorophyll-zeta**. This pigment is optimized for the absorption of red dwarf light and gives the dominant plant life a deep, midnight-blue color. Analysis of the atmospheric composition showed a high concentration of molecular oxygen (O_2), approximately **35%** by volume, significantly higher than Earth's **21%**.

The initial landing site was designated "**The Azure Basin**" due to the dominant blue flora. Retrieval of samples confirmed the basin's soil composition includes rare-earth element **Neodymium**. This element is not found in high concentrations near the equator.

Page 2: Mission Protocols and Risks

All field operations are governed by **Protocol 7** of the Interstellar Survey Corps (ISC). This protocol strictly mandates that no crew member is allowed to venture more than **2 kilometers** from the primary habitat structure (the **Habitat Dome**). The purpose of this distance limit is to ensure rapid retrieval in case of a sudden **weather inversion event**.

The primary risk identified in the pre-mission briefing was the activity of the native micro-organism, *Tylospora viridis*. While non-pathogenic, this organism, when exposed to direct sunlight, releases a dense, particulate fog that severely degrades optical and thermal sensors. This fog lasts for **4 hours** after sunset. As a safety precaution, all external equipment must be powered down between **14:00 and 18:00** local time.

The mission's secondary goal is to locate a stable water source suitable for long-term colonization. Initial telemetry data suggests a large, subterranean reservoir beneath the **Crest of Valor**.