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Author: Ms. Carrie Paterson
California State University, United States

OLFACTORY KITS AND PERSONAL GREENHOUSES FOR SPACEFARERS

Abstract

This paper will present work to date from my dual-tiered project to create olfactory-stimulation kits and personal greenhouses for astronauts.

It has been determined that the experience of a space habitat can be improved through the use of greenhouses for alimentation, oxygen exchange, and recreation. As discussed in *Architecture for Astronauts* by Sandra Haeuplik-Meusburger (Springer, 2011), physical wellbeing in space is augmented by plant-human relationships, frequently documented in astronauts' use and design of personal space.

My olfactory *Homesickness Kits* are palliatives for the spacefarer against dislocation and alienation from the planet, just as "air sick bags" are provided to airline travelers. These are multi-perfume carrying devices with botanical fragrances embedded in beeswax. This work builds on the idea that specific scents are important to the preservation and continuation of health and culture. Justification is taken from research by artist/perfumer Gayil Nalls, "The Importance of Natural Olfactory Stimulation ..." published in *Annals of The New York Academy of Sciences* (Volume 1121, 2007) as well as her work with 270 U.N.-member nations to determine important cultural scent-memory triggers. Using appropriate scent-memories can also aid in sociability and crew relations.

Because any trip into space, whether as part of space-tourism (a few days), a stay on the ISS (a few months), or an extended space missions (500+ days) will require stamina to ward of psychological and existential crises as detailed in Kanas N., Manzey D. *Space Psychology and Psychiatry* (Springer, 2003), and because of the serious ramifications of such crises on other crew, it is important to begin to experiment with the effects of plants on wellness in space and to devise appropriate locations for plant-human relationships to occur. The second aspect of the project, *Personal Greenhouses for Spacefarers*, is a live-plant extension of the *Homesickness Kits* but with the added element of hydroponic sculpture/chambers, built within the requirements for feeding established in Hoehn, A., et. al. "Design, Testing, and Operation of Porous Media for Dehumidification and Nutrient Delivery in Microgravity Plant Growth Systems" (33rd ICES, 2003-01-2614).

As further detailed in Haeuplik-Meusburger and Paterson, "The Road Less Travelled: Greenhouses and Their Humanizing Synergies" (IAC 12-E5.3.10), astronauts' use of individual plants as "love objects" and "pets" can be extended as a type of philosophical enquiry into the nature of human-plant partnerships. The *Personal Greenhouses* accommodate practical, aesthetic, and philosophical concerns.