# Dossier: TRANS ASTRONAUTICA CORPORATION

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,248,144.00

**Award Date:** 2024-05-01

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

TransAstra Corporation is a privately held, US-based company focused on developing technologies for in-space resource utilization (ISRU), specifically targeting asteroid mining and lunar ISRU. Their core mission is to enable a future where space resources are readily available for use in building and operating a self-sustaining space economy. They aim to solve the logistical and economic challenges of long-duration space missions and large-scale space infrastructure development by providing on-site resources, reducing reliance on Earth-based launch capabilities. Their unique value proposition centers around their ability to extract, process, and utilize resources found in space, offering a significant cost advantage compared to transporting materials from Earth.

**Technology Focus:**

* Omnivore Optical Mining:\*\* A proprietary system for extracting water and other volatiles from asteroids and the lunar surface using concentrated solar energy. Prototype systems have demonstrated efficient heating and extraction in simulated space environments.
* Worker Bee/Hopper Spacecraft:\*\* A line of small, reusable spacecraft designed for orbital transfer, resource prospecting, and in-space manufacturing. The "Hopper" variant is intended to "hop" from crater to crater on the Moon, prospecting for water ice.

**Recent Developments & Traction:**

* NASA Tipping Point Awards:\*\* TransAstra has secured multiple NASA Tipping Point awards, including one announced in September 2020 for "Microwave Ablation Extraction of Lunar Ice" and another in September 2022 for "Optical Mining of Water Ice on the Moon." These awards support the development and testing of their ISRU technologies.
* Partnership with Honeybee Robotics:\*\* In 2021, TransAstra announced a partnership with Honeybee Robotics to develop a robotic arm for their optical mining system, enhancing its capabilities for extracting resources in space.

**Leadership & Team:**

* Joel Sercel (CEO):\*\* Extensive background in advanced space propulsion and space resource utilization. Founder of multiple space technology companies.
* Dr. Philip Lubin (Science Advisor):\*\* Professor of Physics at UC Santa Barbara. Known for his work on directed energy systems and interstellar propulsion concepts, bringing expertise in advanced beam-based technologies relevant to optical mining.

**Competitive Landscape:**

* Astrobotic Technology:\*\* Focuses on lunar lander services and resource prospecting. TransAstra differentiates itself through its specific focus on in-situ resource \*extraction and processing\* rather than simply transportation and surveying.
* Lunar Outpost:\*\* Focuses on lunar rovers and resource prospecting. Similar to Astrobotic, TransAstra focuses on extracting resources.

**Sources:**

1. https://www.transastracorp.com/

2. https://www.nasa.gov/directorates/spacetech/home/feature/nasa-partners-with-industry-to-advance-tipping-point-technologies/

3. https://spacenews.com/nasa-awards-12-tipping-point-contracts-for-space-technology-development/

4. https://honeybeerobotics.com/transastra-corporation-and-honeybee-robotics-partner-to-develop-robotic-arm-for-optical-mining/