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POLICY RECOMMENDATIONS FOR ECONOMICALLY AND SOCIALLY VALUABLE ASTEROID
RESOURCE EXPLOITATION ACTIVITIES

Abstract

Asteroids are quickly moving from a speculative resource to potentially economically valuable deposits. There is a potential for a large scale disruptive innovation within the fundamental resource base, and at the same time policy does little to ensure that asteroid resource exploitation is socially and economically valuable. Existing international policies were put into place to prevent militarization of space and related basic risks, and the first national policies focusing on basic ownership rights are only now being put into place.

We identify five major technology, policy, and social issues that must be addressed: surveying duties, technology development, mining and ownership right, profitability or market demand, and protection of the commons. We use analysis of existing proposals and relevant historical cases from other resource rushes to evaluate regulatory concepts and determine who (international, national, or private agents) should exercise these policies. The goal is to use history and anticipatory governance to ensure the social and economic value of space resource extraction activities.

Technology development and surveying duties do have a successful precedent when done by nations trying to assay the value of their land and promote innovation within their own countries. In the context of asteroid mining and its potential global impact, these activities should be sustained by an international community. As for maintaining profitability as well as supporting space mineral resource ownership rights, history indicates policies that allow for competing interests rather than potential monopolies provide better social and economic benefits in the short and long term. In light of the extreme scale of asteroid mining, it is crucial to establish policy structures before large investments, entrenched interests, and outbound asteroid mining expeditions make policy changes difficult.