

IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)  
Space Mining: National Authority? International Authority? Both? (5)

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SPACE RESOURCES: STEWARDSHIP VS SOVEREIGNTY

**Abstract**

The pursuit of resources (exploration, mining, etc.) has been a perpetual source of conflict and destruction throughout history. If existing strategies are continued, the conflicts inherent in the “Westphalian System of Sovereign States” will be perpetuated into the Commons of Outer Space. The purpose of this paper is to define the optimum methodology for establishing legitimate Resource Disposition Authority in Outer Space. The unique methodology utilized to develop this solution is adapted from the practices of Systems Science, Social Science, and Mechanism Design Theory (convergence modeling). Legitimate Space Mining activities require a System of Laws that are fit for the Commons of Outer Space. Once legitimate Authority has been determined a just System of Laws can be established. A “Hierarchy of Justice” is presented that identifies the legitimate Origin of Authority in all 4 Systems of Law. A complete framework is presented that addresses all Resource System activities in a Commons (Outer Space, High Seas, etc.). The legal fiction of “Property” is compared to “Custody” as the legitimate basis for disposition of Space Resources. An Ethic of Sharing matrix is also presented that provides basic principles to ensure peaceful sharing of Outer Space Resources. A model for recasting the universal Commons (Cosmos Nullius) into a managed Commons subsystem is presented. The system dynamics for recasting managed Commons resources into an Economy (private property) are also modeled and analyzed for comparison. The framework of models presented encodes the optimal solution to the question of “Authority” for Space Mining activities.