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Space Resources, the Enabler of the Earth-Moon Econosphere (5)

Author: Mr. Roger X. Lenard
LPS, United States, rxlenard@gmail.com

THE GROWING STATE OF SPACE MINERAL RESOURCES

Abstract

Study Group 3.26 has spent the past 4 years working on its second book on Space Mineral Resources. In the first book we reviewed theoretical markets and opportunities, but the Study Group did not have sufficient information to make a compelling economic case for SMR. In our second volume we discovered that Space Resources writ large, encompassed Space Mineral Resources, as there were a number of resources, such as space power which is a resource in space, that while it may not be material in the sense that it is a tangible object, it can still be a commodity, much as it is here on Earth. In our first volume, we posited that water could be an exchange currency in space, however, water represents a low energy state for a substance, it needs to be broken down into hydrogen and oxygen before it has real value at which point it is propellant. In the second volume, we investigated LEO propellant depots being supplied with lunar resources to break down into propellants. At the present price for LOX-LH2 in LEO, the economic case does not appear compelling, although a propellant depot in EML-1 might provide a different result. Finally, none of this will happen without a liberal legal regime where property rights are respected, and ownership of extracted resources is globally recognized. The legal regime has been changing rapidly, and we provide the latest snapshot into that arena, realizing that it, too will change with time. The second volume is an important preview of future events.