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CONCENTRATED RESOURCES ON THE MOON: POLICY AND LEGAL CONSTRAINTS

**Abstract**

After two decades and more of delineating lunar geology from orbit, we now know that the Moon is far from undifferentiated “magnificent desolation”. Instead the maps from Clementine, LRO, Chandrayaan-1, GRAIL, and others have picked out numerous locations of especial interest. While many of these regions are widespread, other locations are quite small in area. For example, the “Peaks of Eternal Light” near the poles, which are almost continuously illuminated by the Sun, cover only about 1 sq. km (Bussey et al., 2005). Similarly, the coldest of the cold traps at the poles (T<sub>i</sub>40K), which presumably contain the most volatile of the materials from the early solar system, cover only a few sq. km (Paige et al. 2010). The regions richest in thorium (Prettyman et al., 2006) or in iron (Wieczorek, Weiss, and Stewart 2012) are also quite small.

Whenever a scarce resource is found - be it a scientific resource or a commercial one - disputes will arise over how, and by whom, these resources should be exploited (Elvis, Milligan Krolikowski, 2016, Planetary Space Science). Deciding how to resolve these disputes are policy questions. Once multiple players are involved they will need to be considered. The imminent prospect is for lunar landers from many sources: Chinese (Chang-e’ 4, 5), Indian (Chandrayaan-2), Japanese (SELENE-2), Korean, Russian (Luna 25, 26), European (Resource lander), US (Lunar Resource Prospector) and commercial (Moon Express, Astrobotic, others). Hence these questions should be addressed soon. The goals of all these players will be diverse. They will include: lunar science, astrophysics, and even commercial exploitation. Not all of these goals will be compatible (Krolikowski Elvis 2017, submitted to Space Policy). Hence an international approach to lunar regulation will be needed. I will discuss the issues involved.