NEW VIEWS OF THE MOON, 2: THE FUTURE. C. R. Neal¹ and S. J. Lawrence². ¹Dept. Civil & Env. Eng. & Earth Sciences, University of Notre Dame, Notre Dame, IN 46556, USA (neal.1@nd.edu), ²ARES, NASA-Johnson Space Center, Houston TX 77058, USA (samuel.j.lawrence@nasa.gov).

Introduction: There have been 11 missions to the Moon this century from 5 different space agencies. Ten of these missions have been orbital. Significant global datasets thus derived now show our lunar sample collection is not representative [1]. The results from these 21st century missions were not included in the original New Views of the Moon book [2]. Therefore, the New Views of the Moon 2 project has summarized the progress made since the original NVM book was published in 2006. NVM-2 will be different in that it has 21 chapters instead of 7, and an electronic deposit for large data files that will be housed at the Planetary Data System Imaging Node at the USGS in Flagstaff, Arizona.

In looking to the future, it is our belief that getting to the lunar surface is an imperative as all but one of the missions since Apollo have been orbital, although the global data from these now allow intricate planning of surface operations. A recent Landing Site Workshop for Lunar Science [4] demonstrated there is much that can be done for lunar science both in situ and through sample return [4] and representative landing/investigation sites are shown in Fig. 1a,b.

Future Lunar Science & Exploration: The proposed future investigations highlighted in Fig. 1 would benefit many chapter subjects in the NVM-2 project. Assuming that landed missions, including robotic sample return, are possible in the next 5 years through commercial providers (e.g., [5,6]), visiting any of the sites proposed here will add future avenues of research to the following chapters:

**Spinel-rich lithologies, Felsic:** Magmatic Evolution 1 & 2; Evolution of the Lunar Crust; Lunar Interior.

**Impact Melts:** Impact History of the Moon; Impact Chronology; Impact Features & Processes.

**Young Igneous, Farside Mare Basalt:** Magmatic Evolution 2; Lunar Interior; Volcanic Features & Processes.

**Proplastic Deposits:** Magmatic Evolution 2; Volcanic Features & Processes; Edogenous Volatiles; Resources.

**Olivine-rich (Mantle?) Deposits:** Lunar Interior, Magmatic Evolution 1; Evolution of the Lunar Crust.

**Polar H Deposits:** Surface Volatiles; Endogenous Volatiles; Resources; Surface Processes; Space Weathering & Exosphere-Surface Interactions.

**Pure Anothostic (PAN):** Evolution of the Lunar Crust; Magmatic Evolution 1 & 2; Impact Features and Processes.

**Farside Crust:** Lunar Meteorites; Evolution of the Lunar Crust; Surface Processes; Space Weathering & Exosphere-Surface Interactions.

Undertaking landed missions to the types of sites depicted in Fig. 1 will also yield information regarding the origin of the Earth-Moon system, and samples will help understand the origin and evolution of the lunar dynamo. Small detectors on landers would also inform us about the dust and plasma environment. Conclusion – we need to get to the lunar surface for the next era of scientific exploration of the Moon.