When Europeans explored the Earth during the Age of Discovery, their objectives were to learn about the world around them and make discoveries that would inform and benefit the communities they came from. Much of what we now know as the foundations of biology arose from observations and collections that were made during these explorations, and brought back to Europe for further study. Unfortunately, many of the organisms carried by the explorers during these travels were not benign, when introduced by European sailors to other continents or brought back with returning sailors to Europe -- the consequences of some accidental introductions were dramatic, and in several cases can still be felt today. Learning from these experiences, and making responsible efforts to avoid them during exploration of the solar system, was identified as an important effort even before the launch of Sputnik in 1957, and motivates the application of planetary protection to spaceflight missions now and in the future.