

SNAPSHOT

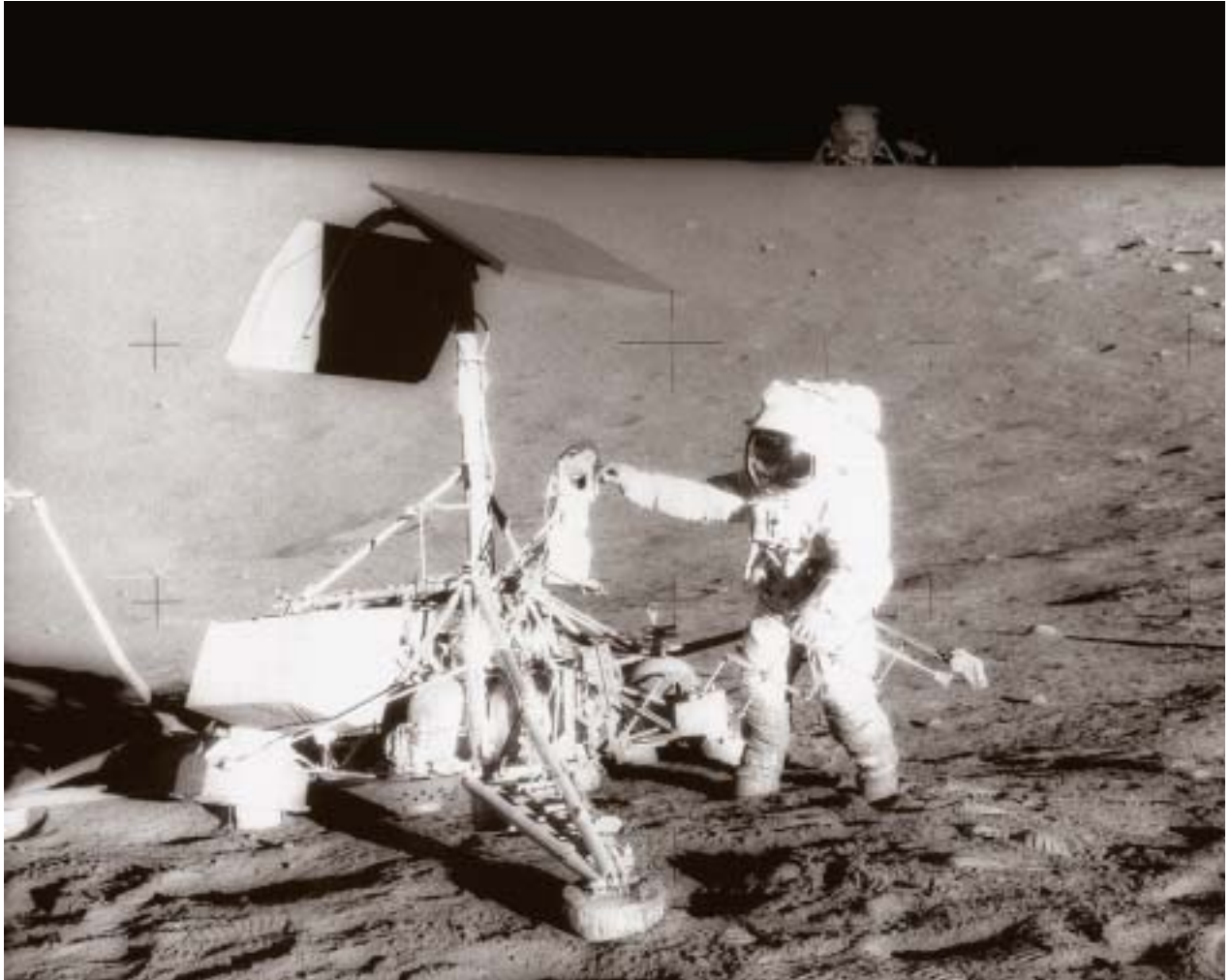


PHOTO COURTESY OF NASA

THE PARTNERSHIP

As humans continue to expand their exploration and exploitation of space, robots will be their scouts, companions, teachers, extended senses, enhanced muscles and even their sharpened wits. And, considering how severely hostile the space environment is; only such a partnership, such a synergistic symbiosis, seems even remotely to be a match for the extraterrestrial challenges ahead. Robots will also be a material resource for humans, both in spare parts and in inspiration. As humans and robots overlap in their ecological niches in space, worn-out or broken robots will provide spare components for fabrication of different devices. Sometimes parts will be used for simpler, specialized automata, sometimes for supplemental hardware for human life-support systems, and sometimes two inoperable units will be cannibalized to obtain one working machine.

This photograph, showing astronaut Pete Conrad retrieving equipment from the Surveyor 3 moon robot in 1969, commemorates an altogether different fruit of such a man-machine partnership. The robot's camera was removed so that the long-term effects of the space environment could be evaluated. Laboratory examiners, on a long shot, took a few swabbings of the interior and cultured them—and on one dish, bacteria grew. It was a common human disease germ—a technician may have sneezed on the camera when it was being assembled years before. If so, organisms had survived for years despite the lunar vacuum, extreme temperatures and ambient radiation. If this meeting had never occurred, this discovery would never have been made. When future meetings occur, new revelations—surprising, powerful, and as of now indescribable—are bound to occur. — *Jim Oberg* ©