

# My Seven

# NATIONAL GEOGRAPHIC



## Why We Must Go Back to the Moon

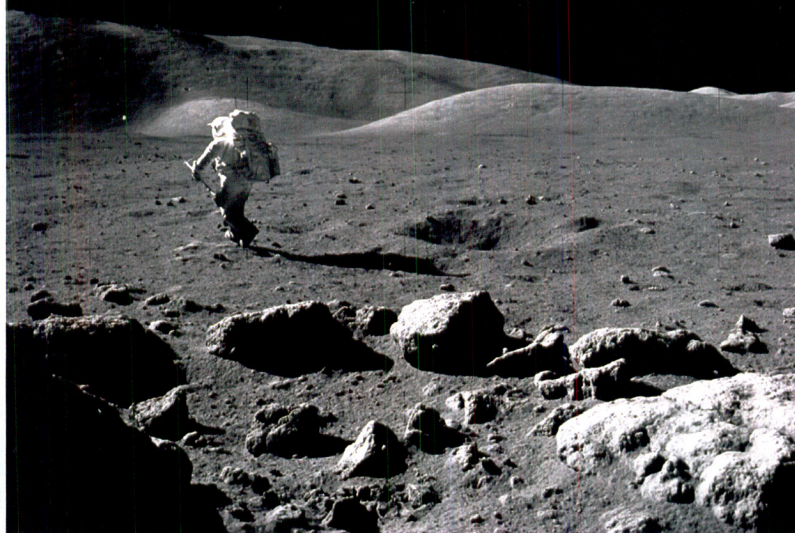
**Harrison H. Schmitt** *Geologist and Apollo 17 astronaut*

On December 14, 1972, Harrison "Jack" Schmitt finished 22 hours of rock and dust sampling (below) and climbed back into the lunar lander. No humans have landed on the moon since. Now Schmitt is one of the loudest voices calling for us to go back. There's something in the dust, says the Apollo missions' only scientist, that will make it worth the trip.

**1 Clean, abundant energy** When I sampled lunar dust in 1972, I had no idea it contained a future fusion-energy resource—helium 3, a rare (on Earth) helium isotope implanted by the solar wind. By-products of lunar helium 3 processing would include hydrogen, water, and oxygen—exactly what space settlers will need.

**2 A stepping-stone to Mars** A return to the moon to mine helium 3 will require heavy-lift rockets and will lead to fusion propulsion systems. I believe this combination ultimately will enable the exploration and settlement of Mars.

**3 Species survival** Humans need to find other places in the solar system to live. A permanent return to the moon will be as significant as our early ancestors' migration out of Africa.



NASA (BOTH)

**4 Expanded understanding of the universe** Lunar-based geology and astronomy will provide insights into our solar system, other galaxies, and perhaps other life-bearing planets.

**5 Save Earth from threats from space** Today we have nothing like the Apollo moon rockets. Only rockets big enough to reach the moon could

divert an asteroid—and help us avoid the fate of the dinosaurs.

**6 Education** Decades of interacting with students has convinced me that concepts taught in the context of space exploration stimulate minds in unique ways.

**7 Lunar tourism** Fly me to the moon? For the Apollo missions,

I estimate that it cost about \$26,000 per pound (in today's dollars) to send cargo to the moon. Successful mining could get the cost down to \$1,000 per pound—low enough to send a tourist for about \$200,000. A few travelers might be interested.

### WEBSITE EXCLUSIVE

See text and photos from Schmitt's 1973 *Geographic* article on the Apollo 17 mission at [nationalgeographic.com/magazine/0407](http://nationalgeographic.com/magazine/0407).