

Apollo astronaut: use Moon's valuable resources

Harrison Schmitt, the last astronaut to walk on the Moon, forecasts that in 50 years from now, "at the 100th anniversary of Apollo, there will be settlements on the Moon, people living there permanently, producing the resources of the Moon". As the only scientist to explore the Moon during the Apollo program, Schmitt is a long-time advocate of mining the Moon's resources, including helium-3 for fusion reactors that could supply humanity's energy needs for the next 10,000 years.

As a geologist, Schmitt's role in the Apollo 17 mission was indispensable in furthering scientific knowledge of the lunar regolith. He collected numerous samples of lunar rock and dust, including a rock sample that has many in NASA convinced that the Moon once had an active magnetic field. He told *The Telegraph* in July that the Moon's debris layer could be "very fertile, so if you want to produce food, that's achievable. Settlements on the Moon are going to be a piece of cake." Water ice on the Moon could be used for hydrogen and oxygen production, he added.

Schmitt recently noted that the Chinese have made no secret that part of their purpose in going to the Moon is the mining of helium-3. "Not only that will assist a Mars mission", Schmitt told the *Telegraph*, "but helium-3 is an ideal fuel for electric power generation because it creates no radioactive waste, and demands for electrical power are not going to decrease, civilisation depends on it, and this is one of the major potential and long-term sources."

Following his NASA career, as a US Senator in 1977-83 Schmitt advocated increased funding for space and science programs. In particular, he called for vastly expanding the nuclear energy budget, with a focus on fusion research and development. With abundant nuclear power and technological progress, all of humanity could be free of poverty. He outlined his vision in a February 1977 speech in the Senate: "The source of the opportunity which is before us lies in the aspirations of peoples of the developing world to enter the 20th century, the technological and material 20th century. The technological revolution in which we live today and in which we participate as a nation and as a people provides unique, historically unique, opportunities for the peoples of the developing world to enter the 20th century."

Financial oligarchy crushes scientific progress

The City of London and Wall Street financial interests behind President Jimmy Carter effectively cut funding to NASA to squash industrial and scientific progress. As a result, no human being has walked on the Moon since December 1972, when Schmitt and fellow astronaut Eugene Cernan completed the Apollo 17 moonwalks. And the attack on scientific progress didn't stop there. The US Government Energy Research and Development Administration (ERDA) in a 14 April 1977 memorandum issued an order to all ERDA offices: "The following booklets should be removed from circulation and destroyed. These publications do not reflect current policies." The list included *The Economics of America's Energy Future*; *Nuclear Power and the Environment*; *Atoms on the Move*; *The Economics of Nuclear Power*; and *The Breeder Reactor*. These publications were not written to be policy statements, but were objective descriptions by scientists of various aspects of nuclear power.

Senator Schmitt put a strong statement in the Congressional Record of 18 May 1977 condemning this "book burning" and the politically motivated firing of the Director of the US Geological Survey, Vincent McKelvey. McKelvey's "crime" was to contradict a CIA report on the world energy situation, which predicted that "in the absence of greatly increased energy conservation, projected world demand for oil will ... substantially exceed capacity by 1985."

In November 2003 testimony before a US Senate subcommittee, Schmitt emphasised the need for dramatically expanded energy production: "As background, global demand and need for energy will likely, in my estimation, increase by at least a factor of eight by the midpoint of the 21st century. This rapid rise from today will be due to a combination of population increase, roughly a factor of two; new energy-intensive technologies; aspirations for improved standards of living, and lower birth rates in less developed countries; and the need to mitigate the adverse consequences of climate warming or climate cooling, whichever way it may go. It is going to go one of those two directions."

In this testimony Schmitt emphasised the importance of the Moon's helium-3: "There is a resource base of helium-3 of about 10,000 tonnes just in the upper three metres of the titanium-rich soils of *Mare Tranquillitatis* [the 'Sea of Tranquillity']. This, of course, was the region where Neil Armstrong landed in 1969. By the way, the current electrical energy use in the United States is about 40 tonnes of helium-3 equivalent energy. That's the annual use. It's about 40 tonnes equivalence."

Climate change

Schmitt, now 84, continues to challenge the political establishment with scientific reason. In a panel at the Science Writers 2018 conference in Washington, DC, Schmitt poured cold water on climate change alarmism: "I know the Earth is not nearly as fragile as we tend to think it is. It has gone through climate change and it is going through climate change at the present time. The only question is, 'Is there any evidence that human beings are causing that change?' In my profession there is no evidence. There are models, but models of very complex natural systems are often wrong. And the

observations that we make as geologists and observational climatologists, do not show any evidence that human beings are causing this. ... I as a scientist expect to have people question orthodoxy. And we always used to do that in science. Now unfortunately, funding by governments and particularly the United States government is biasing science towards 'proving' what the government wants to hear. That's a very dangerous thing that is happening in science today, and it's not just in climate."

Australian Alert Service 7 August 2019

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