

Forty years since the first Moon landing

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Forty years ago today, on July 20, 1969, two American astronauts, Neil Armstrong and Edwin (Buzz) Aldrin, became the first human beings to land on the Moon. This historic scientific and technological feat is all the more remarkable because the period of manned exploration of Earth's satellite inaugurated by Apollo 11 ended little more than three years later. All six Moon missions were completed during the first term of a single US president, Richard M. Nixon.

When Eugene Cernan, Ronald Evans and Harrison Schmitt returned to Earth in Apollo 17 on December 19, 1972, Nixon was in the White House, Leonid Brezhnev ruled in the Kremlin and Mao Tse-tung in China. The US military had just begun Operation Linebacker II, the so-called Christmas bombing of Hanoi and Haiphong, to pressure the North Vietnamese delegation at the Paris Peace Talks.

Forty years on, the Moon landing remains an unparalleled feat of engineering, organization and daring, using technology that was rudimentary by the standards of the 21st century. Closer to World War II than to our own day, the mid-1960s saw such innovations as the eight-track tape, the first primitive laser and the automobile airbag. The microchip was still in development. The complex calculations required for travel from the Earth to the Moon and back were performed by gargantuan computers built with vacuum tubes and transistors and using punch cards and paper tape.

The successful eight-year effort to put a man on the Moon was the product of specific social and political circumstances that made possible a massive mobilization of resources. When President John F. Kennedy declared the goal of placing a man on the Moon within a decade, American imperialism was at the height of its Cold War struggle against the Soviet Union, and was trailing in space, following the Soviet success in launching Sputnik and putting the first man in space, cosmonaut Yuri Alekseyevich Gagarin.

Sputnik gave the initial impetus to what became known as the "space race," but the vast resources of American capitalism, by far the world's greatest economic power, made possible the ultimate success of the Apollo program.

At its height, the program enlisted the technical and manufacturing prowess of 90,000 scientists and engineers and 420,000 workers altogether, and accounted for more than half of all research and development spending in the United States.

While Kennedy had given the initial green light, his motivation was primarily political—to dispel the worldwide prestige gained by the USSR. "I am not that interested in space," he told James E. Webb, NASA's administrator in late 1962. "I think it's good. I think we ought to know about it. But we're talking about fantastic expenditures."

By the mid-1960s, NASA budgets began to come under pressure as a result of increased spending on the Vietnam War. By the time of the Moon landing, the NASA and its contractor workforce was being systematically cut back, the planning horizon was narrowed, and the space program was casting about for a new mission—a condition that continues to this day.

The 40-month period of the manned Moon landings, July 1969-December 1972, represents in many ways the critical turning point in the post-World War II history of American and world capitalism. War spending and a wages offensive by the American labor movement had produced increasing strains on the financial position of American capitalism, reflected in mounting balance of payments deficits.

On August 15, 1971, President Nixon went on national television to announce a radical shift in US economic policies, ending the international currency system established in 1944 at the Bretton Woods conference, which was anchored by the dollar's convertibility into gold at \$35 to the ounce. He also announced a 90-day wage freeze and a 10 percent tariff surcharge on imports.

These decisions had profound historical significance. American capitalism was no longer capable of playing the role of stabilizer of the world financial system. Faced with resurgent capitalist competitors in Europe and Asia, and a powerful labor movement at home, the US ruling class found it necessary to embark on a drastic change of course in both international and domestic policy.

The 1970s were characterized by sharp recessions and a series of probing attacks against the labor movement, most

notably the 111-day walkout by US coal miners in which the administration of Democrat Jimmy Carter sought unsuccessfully to use the Taft-Hartley Act to break the strike. By 1980, with interest rates in double-digits, the US ruling elite brought to power the Reagan administration, and embarked on a campaign of open unionbusting and deindustrialization which provoked a decade of bitter strike struggles, all of them isolated and defeated through the collaboration of the AFL-CIO union bureaucracy.

The result of these defeats was a colossal decline in the standard of living of the American working class. It is no accident that the same year, 1972, that marked the end of manned Moon missions also marked the apogee for working class living standards in the United States. American capitalism had entered a period of irreversible historical decline, a process that has found expression in every sphere of social and cultural life.

In its foreign policy, this decline sparked a series of aggressive military adventures. After a period of retrenchment after the defeat in Vietnam, American imperialism began a military buildup directed against both the USSR and the nationalist regimes in the “Third World” which sought to balance between the United States and the Soviet bloc.

The space program was completely subordinated to this drive for military supremacy. Exploration beyond Earth’s orbit was relegated to machines only, and the manned program were devoted to the space shuttle, conceived of particularly by the Reagan administration as an adjunct to its “Star Wars” plans for placing offensive and defensive weapons systems in space.

The space shuttle was given a nominal “civilian” mission—laying the foundations for a permanent space station—but its real purpose was to provide the Pentagon greater capabilities for launching spy satellites and, if they could be successfully developed, actual space weapons. The technological failure of “Star Wars,” however, left the space program with no real purpose, and NASA budgets stagnated.

The loss of Challenger in 1987 and Columbia in 2003 underscored both the inherent limitations in the space shuttle program, and the impact of the deteriorating economic position of American capitalism. Just enough resources were provided to NASA to keep the program running, but not enough to forestall the next catastrophe. Finally, after Columbia, NASA has been compelled to announce the phase-out of the shuttle program and a turn back to Apollo-style rocket boosters, which will not be ready for use until at least 2015.

Moreover, the space station, only just now nearly complete after the expenditure of \$100 billion over two decades, will be allowed to die for lack of funding. NASA space station

program manager Michael T. Suffredini told the *Washington Post* last week, “In the first quarter of 2016, we’ll prep and de-orbit the spacecraft.”

The dead end of the US space program did not arise because of failures by the scientists and engineers who joined it out of a genuine desire to make a contribution to mankind’s emergence from a planet-bound to an interplanetary existence. NASA continues to achieve technical and scientific advances with a series of brilliant efforts to explore the solar system through robot spacecraft—in the past year alone, a flyby of Mercury, the Phoenix mission to Mars, the continued success of the two Mars rovers landed five years ago, the repair of the Hubble Space Telescope, and preparations for additional missions to the outer planets.

In the final analysis, the successful exploration of space is beyond the capability of any national state, even the richest and most technologically advanced. And under today’s conditions of worldwide economic crisis, whatever remains of the gains of past decades will be quickly lost.

Like all historically progressive tasks, humanity’s advance into space depends upon the overcoming of the barriers erected by the profit system: private ownership of the means of production, and the division of the world into rival and competing nation-states. In other words, it depends on the development of an independent movement of the world working class, based on a socialist program.

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