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H. CON. RES. 117

Commemorating the 40th Anniversary of humanity's first landing on the Moon, celebrating the success of the United States human space flight program, and recognizing the accomplishments of NASA's human space flight centers.

IN THE HOUSE OF REPRESENTATIVES

MAY 4, 2009

Mr. CULBERSON submitted the following concurrent resolution; which was referred to the Committee on Science and Technology

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CONCURRENT RESOLUTION

Commemorating the 40th Anniversary of humanity's first landing on the Moon, celebrating the success of the United States human space flight program, and recognizing the accomplishments of NASA's human space flight centers.

Whereas President John F. Kennedy inspired our Nation to new heights when he remarked on May 25, 1961, ''I believe that this Nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish'';

Whereas the National Aeronautics and Space Administration, at President Kennedy's direction, worked diligently to land a man on the Moon;

Whereas the mission of Apollo 11, which departed Earth on July 16, 1969, was to perform a manned lunar landing and return safely to Earth;

Whereas Apollo 11's crew consisted of Commander Neil Alden Armstrong, Command Module Pilot Michael Collins, and Lunar Module Pilot Edwin Eugene ''Buzz'' Aldrin, Jr.;

Whereas, on July 20, 1969, the Lunar Module ''Eagle'' landed on the surface of the Moon, and Neil A. Armstrong took the first steps on the Moon and remarked, ''That's one small step for (a) man, one giant leap for mankind'';

Whereas the plaque affixed to the landing gear of the Eagle read: ''HERE MEN FROM THE PLANET EARTH FIRST SET FOOT UPON THE MOON JULY 1969 A.D. WE CAME IN PEACE FOR ALL MANKIND'';

Whereas the first lunar landing was viewed by millions of Americans on television and countless others throughout the world;

Whereas Astronauts Neil Armstrong and Buzz Aldrin spent more than two hours exploring the surface of the Moon performing and setting up experiments to study solar wind composition, lunar seismic activity, lunar dust and soil mechanics, and lunar field geology, among other things;

Whereas Apollo 11 astronauts returned the first samples from another planetary body; these first samples were basalts, dark-colored igneous rocks, and aged 3.7 billion years;

Whereas the science conducted by the Apollo missions provided scientists around the world with new information about Earth's nearest neighbor, and its discoveries included the following:

(1) The Moon is not a primordial object. It is an evolved terrestrial planet with internal zoning similar to that of Earth. Before Apollo, the state of the Moon was a subject of almost unlimited speculation.

(2) The Moon is made of rocky material that has been variously melted, erupted through volcanoes, and crushed by meteorite impacts.

(3) The Moon is ancient and still preserves an early history (the first billion years) that must be common to all terrestrial planets. The extensive record of meteorite craters on the Moon, when calibrated using absolute ages of rock samples, provides a key for unraveling time scales for the geologic evolution of Mercury, Venus, and Mars based on their individual crater records. Before Apollo, the origin of lunar impact craters was not fully understood and the origin of similar craters on Earth was highly debated.

(4) The youngest Moon rocks are virtually as old as the oldest Earth rocks. The earliest processes and events that probably affected both planetary bodies can now only be found on the Moon. Moon rock ages range from about 3.2 billion years in the maria (dark, low basins) to nearly 4.6 billion years in the terrae (light, rugged highlands).

(5) The Moon and Earth are related and formed from different proportions of a common reservoir of materials.

(6) The Moon is lifeless; it contains no living organisms, fossils, or native organic compounds. Extensive testing revealed no evidence for life, past or present,

among the lunar samples; even nonbiological organic compounds are amazingly absent. Traces can be attributed to contamination by meteorites.

(7) All Moon rocks originated through high-temperature processes with little or no involvement with water. They are roughly divisible into three types: basalts, anorthosites, and breccias.

(8) Early in its history, the Moon was melted to great depths to form a ''magma ocean''. The lunar highlands contain the remnants of early, low-density rocks that floated to the surface of the magma ocean. The lunar highlands were formed about 4.4 to 4.6 billion years ago by flotation of an early, feldspar-rich crust on a magma ocean that covered the Moon to a depth of many tens of kilometers or more.

(9) The lunar magma ocean was followed by a series of huge asteroid impacts that created basins which were later filled by lava flows. The large, dark basins such as Mare Imbrium are gigantic impact craters, formed early in lunar history, that were later filled by lava flows about 3.2 to 3.9 billion years ago. Lunar volcanism occurred mostly as lava floods that spread horizontally. Volcanic fire fountains produced deposits of orange and emerald-green glass beads.

(10) The Moon is slightly asymmetrical in bulk form, possibly as a consequence of its evolution under Earth's gravitational influence. Its crust is thicker on the far side, while most volcanic basins—and unusual mass concentrations—occur on the near side.

(11) The surface of the Moon is covered by a rubble pile of rock fragments and dust, called the lunar regolith, that contains a unique radiation history of the Sun,

which is of importance to understanding climate changes on Earth;

Whereas, beyond their scientific achievements, the Apollo missions also afforded all the peoples of the world an unprecedented opportunity to see their home planet as a fragile abode of life in the cosmos, contributing to the development of the ecology movement;

Whereas NASA's rich history of human flight into space continues today with the Constellation Program, which will return American astronauts to the Moon in 2020;

Whereas Constellation represents the next generation of United States human space flight systems, and the continuation of a strategic national capability;

Whereas these new expeditions will build upon the science and technology of the Apollo Program and NASA's pioneering work in space in the decades since, enabling future explorers to stay on the lunar surface for longer than was possible in the 1960s and 1970s;

Whereas lessons learned by these men and women will continue to expand our knowledge of the Moon and the solar system, and inform the development of technologies and techniques Americans will use in furthering the reach of humans beyond the Earth-Moon system;

Whereas, on September 19, 1961, Houston was chosen by NASA as the site for its Manned Spacecraft Center;

Whereas beginning with the Gemini 4 mission in 1965 and continuing with subsequent missions throughout the 1960s and 1970s, the Manned Spacecraft Center in Houston was central to the operations of human flights to space;

Whereas the Manned Spacecraft Center played a key role in the Apollo Program, providing Mission Control for the flights as well as intensive training for the astronauts, and engineering development activities that pushed the boundary of the state of the art;

Whereas the Manned Spacecraft Center in Houston, Texas, was renamed Johnson Space Center in 1973 and has continued to be the operations center of the human space flight program through the Skylab, Apollo-Soyuz, Space Shuttle, and International Space Station programs;

Whereas Johnson Space Center's foundation remains its people—their talent, vision, and dedication—and the integrated organizational framework composed of the engineers, program managers, astronauts, flight controllers, flight surgeons, and scientists;

Whereas in July 1962 NASA established its Launch Operations Center on Florida's east coast, and renamed it in late 1963 to honor the President who put America on the path to the Moon;

Whereas NASA's John F. Kennedy Space Center has helped set the stage for America's adventure in space for more than four decades, serving as the point of departure for American human space missions and hundreds of advanced scientific spacecraft;

Whereas from the early days of Project Mercury to the Space Shuttle and International Space Station, from the Hubble Space Telescope to the Mars Exploration Rovers, the Center enjoys a rich heritage in its vital role as NASA's processing and launch center;

Whereas, since its beginning in 1960, Marshall Space Flight Center in Huntsville, Alabama, has provided NASA with

mission-critical design, development, and integration of the launch and space systems required for space operations, exploration, and scientific missions;

Whereas Marshall's legacy in rocket science includes providing the rockets for the Apollo Program, developing the Space Shuttle's propulsion system, and managing the development of Skylab, Spacelab, International Space Station nodes, the Hubble Space Telescope, the Chandra X-ray Observatory, and many scientific instruments;

Whereas Dr. Wernher von Braun, the first director of NASA's Marshall Space Flight Center in Huntsville, Alabama, and his team of rocket scientists designed the mammoth Saturn V rocket that launched humans to the Moon;

Whereas NASA's Mississippi Test Operations site was established to test the engines for the Apollo Program;

Whereas the facility was renamed in 1988 for Mississippi's Senator John C. Stennis, and is now the Nation's largest rocket engine testing facility;

Whereas Stennis Space Center tests all the main engines for the Space Shuttle and will test the engines for NASA's Constellation Program;

Whereas NASA's greatest asset will continue to be its people, the thousands of individuals across the country in both government and industry who conceive, design, build, operate, and manage an ambitious program of space exploration on behalf of the Nation;

Whereas this workforce includes about 13,000 employees at the Kennedy Space Center, over 15,000 at the Johnson Space Center, over 1,600 at the Stennis Space Center, and over 7,000 at Marshall Space Flight Center, who

make NASA's achievements possible, and contribute to both the local economies of communities around their Centers and the national economy as a whole;

Whereas NASA's human space flight teams are working to transition the Agency from operating the Space Shuttle to expanding America's reach to the Moon, Mars, and beyond; and

Whereas at the same time, the teams are operating and utilizing the International Space Station, the first element of which was launched into orbit more than ten years ago, so that America can learn what it needs to know about long-duration space flight in order to make future flights of exploration possible: Now, therefore, be it

Resolved by the House of Representatives (the Senate concurring), That Congress commemorates the 40th Anniversary of the first landing on the Moon.

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