"The Project Work On Study About The History Of Space Exploration"

A PROJECT WORK SUBMITTED FOR THE PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE GRADE-XII SCIENCE IN PHYSICS

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ABSTRACT

Space exploration is the ongoing discovery and exploration of celestial structures in outer space by means of continuously evolving and growing space technology. While the study of space is carried out mainly by astronomers with telescopes, the physical exploration of space is conducted both by unmanned robotic probes and human spaceflight. From the discovery of space, humans have been curious about exploring space. In the process of exploring universe, we discover new things and explore new things. Therefore, the study of science is becoming more and more profound. In the process of exploring, people constantly improve their own technological level, which makes the development of science and technology more and more rapid and the technological level constantly improves. However, many people think exploring space would expose them to unknown risks. Many of modern scientists are studying about the outer space.

ACKNOWLEDGEMENTS

We would like to express our special thanks of gratitude to our Lecturer of Physics ***Mr. Bimal Adhikari,*** who gave us the golden opportunity to do this wonderful project on the topic **"TO STUDY ABOUT THE HISTORY OF SPACE EXPLORATION",** which also helped us in doing a lot of research in space and we came to know about so the history of space. We are really thankful to them. Secondly, We would also like to thank our friends, who helped us a lot in finalizing this project within the limited time frame.

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CERTIFICATE OF APPROVAL

The project work on **"TO STUDY ABOUT THE HISTORY OF SPACE EXPLORATION"** by us under the supervision Lecturer of Physics ***Mr. Bimal Adhikari***, National Academy of Science and Technology College, Nepal, is hereby submitted for the partial fulfillment of requirement of Physics in Grade XII. This project work in our knowledge has not been submitted in any other schools or institutions.

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RECOMMENDATION

This is to certify that the project work entitled "TO **STUDY ABOUT THE HISTORY OF SPACE EXPLORATION**" has been carried out by us as a partial fulfilment of grade XII in Physics under my supervision. To the best of knowledge, this work has not been submitted to any other purpose in this institute. I, therefore recommend the project work report for appraisal.

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DECLARATION

We are hereby declare that the project work entitled "TO **STUDY ABOUT THE HISTORY OF SPACE EXPLORATION**" under the supervision Lecturer of Physics ***Mr. Bimal Adhikari***, National Academy of Science and Technology college, Nepal, presented here as genuine work done originally by me and has not been published or submitted elsewhere. Any literature, data or works done by others and cited in this project work has been given due acknowledgement and listed in the reference section.

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"The Project Work On Study About The History Of Space Exploration"

INTRODUCTION

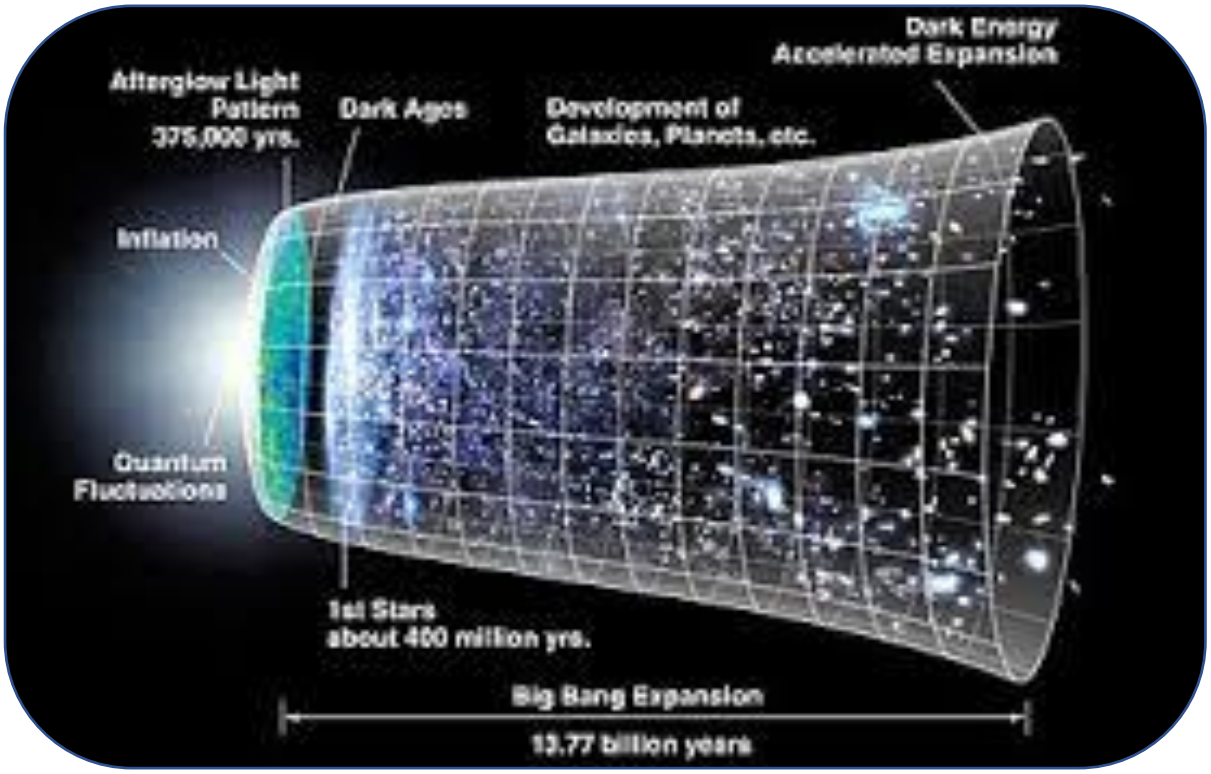
Space exploration is the use of astronomy and space technology to explore outer space. While the exploration of space is carried out mainly by astronomers with telescopes, its physical exploration though is conducted both by unmanned robotic space probes and human spaceflight. Space exploration like its classical form astronomy, is one of the main sources for space science.

THEORY

During the time that has passed since the launching of the first artificial satellite in 1957, astronauts have traveled to the moon, probes have explored the solar system, and instruments in space have discovered thousands of planets around other stars. We human beings have been venturing into space since October 4, 1957, when the Union of Soviet Socialist Republics (U.S.S.R) launched Sputnik, the first artificial satellite to orbit Earth. This happened during the period of political hostility between the Soviet Union and the United States known as the Cold War. For several years, the two superpower had been competing to develop missiles called intercontinental ballistic missies(ICBMs), to carry nuclear weapons between continents. In the U.S.S.R., the rocket designer Sergei Korolev had developed the first ICBM, a rocket called the R7, which would begin the space race. This competition came to a head with the launch of Sputnik. Carried atop an R7 rocket, the Sputnik satellite was able to send out beeps from a radio transmitter. After reaching space, Sputnik orbited Earth once every 96 minutes. The radio beeps could be detected on the ground as the satellite passed overhead, so people all around the world knew that it was really in orbit. Realizing that the U.S.S.R. had capabilities that exceeded U.S. technologies that could endanger Americans, the United States grew worried. Then, a month later, on November 3, 1957, the Soviets achieved an even more impressive space venture. This was Sputnik II, a satellite that carried a living creature, a dog named Laika. Prior to the launch of Sputnik, the United States had been working on its own capability to launch a satellite. The United States made two failed attempts to launch a satellite into space before succeeding with a rocket that carried a satellite called Explorer on January 31, 1958. The team that achieved this first U.S. satellite launch consisted largely of German rocket engineers who had once developed ballistic missiles for Nazi Germany. Working for the U.S. Army at the Redstone Arsenal in Huntsville, Alabama, the German rocket engineers were led by Wernher von Braun and had developed the German V2 rocket into a more powerful rocket, called the Jupiter C, or Juno. Explorer carried several instruments into space for conducting science experiments. One instrument was a Geiger counter for detecting cosmic rays. This was for an experiment operated by researcher James Van Allen, which, together with measurements from later satellites, proved the existence of what are now called the Van Allen radiation belts around Earth. In 1958, space exploration activities in the United States were consolidated into a new government agency, the National Aeronautics and Space Administration (NASA). When it began operations in October of 1958, NASA absorbed what had been called the National Advisory Committee for Aeronautics (NACA), and several other research and military facilities, including the Army

Ballistic Missile Agency (the Redstone Arsenal) in Huntsville. The first human in space was the Soviet cosmonaut Yuri Gagarin, who made one orbit around Earth on April 12, 1961, on a flight that lasted 108 minutes. A little more than three weeks later, NASA launched astronaut Alan Shepard into space, not on an orbital flight, but on a suborbital trajectory—a flight that goes into space but does not go all the way around Earth. Shepard's suborbital flight lasted just over 15 minutes. Three weeks later, on May 25, President John F. Kennedy challenged the United States to an ambitious goal, declaring: "I believe that this nation should commit itself to achieving the goal, before the decade is out, of landing a man on the moon and returning him safely to Earth."In addition to launching the first artificial satellite, the first dog in space, and the first human in space, the Soviet Union achieved other space milestones ahead of the United States. These milestones included Luna 2, which became the first human-made object to hit the Moon in 1959. Soon after that, the U.S.S.R. launched Luna 3. Less than four months after Gagarin's flight in 1961, a second Soviet human mission orbited a cosmonaut around Earth for a full day. The U.S.S.R. also achieved the first spacewalk and launched the Vostok 6 mission, which made Valentina Tereshkova the first woman to travel to space. During the 1960s, NASA made progress toward President Kennedy's goal of landing a human on the moon with a program called Project Gemini, in which astronauts tested technology needed for future flights to the moon, and tested their own ability to endure many days in spaceflight. Project Gemini was followed by Project Apollo, which took astronauts into orbit around the moon and to the lunar surface between 1968 and 1972. In 1969, on Apollo 11, the United States sent the first astronauts to the Moon, and Neil Armstrong became the first human to set foot on its surface. During the landed missions, astronauts collected samples of rocks and lunar dust that scientists still study to learn about the moon. During the 1960s and 1970s, NASA also launched a series of space probes called Mariner, which studied Venus, Mars, and Mercury. Space stations marked the next phase of space exploration. The first space station in Earth orbit was the Soviet Salyut 1 station, which was launched in 1971. This was followed by NASA's Skylab space station, the first orbital laboratory in which astronauts and scientists studied Earth and the effects of spaceflight on the human body. During the 1970s, NASA also carried out Project Viking in which two probes landed on Mars, took numerous photographs, examined the chemistry of the Martian surface environment, and tested the Martian dirt (called regolith) for the presence of microorganisms. Since the Apollo lunar program ended in 1972, human space exploration has been limited to low-Earth orbit, where many countries participate and conduct research on the International Space Station. However, unpiloted probes have traveled throughout our solar system. In recent years, probes have made a range of

discoveries, including that a moon of Jupiter, called Europa, and a moon of Saturn, called Enceladus, have oceans under their surface ice that scientists think may harbor life. Meanwhile, instruments in space, such as the Kepler Space Telescope, and instruments on the ground have discovered thousands of exoplanets, planets orbiting other stars. This era of exoplanet discovery began in 1995, and advanced technology now allows instruments in space to characterize the atmospheres of some of these exoplanets.



OBSERVATION

We observed that the first person went to space was Yuri Gagarin. The animal went on space was Laika "Dog". The first person step on moon was Neil Armstrong. From their experiences many more scientists are studying about space by using satellites, rockets etc. in the present time.

CONCLUSION

Hence, the study about the history of space exploration is successfully completed and presented.

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