

EXAMPLE SHORT INFORMATIVE THEME

Prompt: Choose a science topic, and write a short multi-paragraph theme about it, based on your research. Be sure to have at least five paragraphs in your theme. Include in-text citations where needed and a reference list. Use the APA style.

TITLE OF PAPER: Robotic Spacecraft: Can They Do Everything People-piloted Spacecraft Can Do?

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American Literature I
19 September 2014

Robotic Spacecraft:

Can They Do Everything People-piloted Spacecraft Can Do?

Robotic space vehicles are some of today's most valuable explorers of the Universe. By way of definition, these spacecraft are ships that travel through space without a live pilot on board. Because no humans are on board, they can go places that are dangerous to people, and they can travel for years without ever returning to base. As a result, they can do several jobs that are helpful to people. These jobs allow people to study and explore new worlds from a distance. Three types of robotic space vehicles that have special jobs that they can do as well as people are probes, satellites, and landers which contain rovers.

The most basic type of robotic spacecraft is the pure space probe. By way of background, a pure space probe is a spacecraft that is launched into space to take measurements. It is not usually designed to return to the planet from which it was launched. It typically flies through space, and, as it passes a celestial body, like a planet or a moon, it measures certain features of that body. Necessarily then, it carries instruments which can take measurements. For example, it might carry special cameras that can take photos from which measures can be taken. It might also carry instruments that can determine the composition of an atmosphere. Furthermore, it carries instruments that enable the probe to communicate with its home base. These instruments allow the base to send commands to the probe about what measures to take and where to go. They also allow the probe to send photos and other measurements back to the base.

The next most complex type of robotic space vehicle is the satellite; satellites are different from pure space probes in several ways. Unlike pure space probes, satellites are designed to orbit eventually around a planet or moon. That is, they are launched from the Earth and then placed into orbit when they reach a certain destination. They can orbit the Earth or some

other celestial body. Like space probes, these vehicles carry a variety of instruments. Their instruments allow them to do a variety of jobs. Such jobs include communication, weather detection, military observation, and research. Interestingly, more than 6000 satellites have been launched to orbit the Earth. About 3600 remain in orbit. Only about 1000 are operational; the remainder are classified as space debris (“Satellite,” 2014).

The third type of robotic space vehicle is the lander which contains a rover. Unlike the other two types of robotic spacecraft, the lander is designed to land on a planet or other space body, open up, and allow the rover to travel around the surface of that celestial body. Because the rover can actually touch a surface, it can gather and analyze samples. It can also take “up close” photographs and conduct experiments that are guided by scientists on the Earth. Because the rover can move around, it can be directed to interesting features of a celestial body, it can be placed in sunny locations to gather solar energy, and it can move to many different locations. In this way, the climate of different areas can be determined, and the geology and composition of rocks and soil in each location can be analyzed.

To conclude, robotic space vehicles are vitally important members of our exploratory work force for a host of reasons. For one thing, probes can be launched into space to take basic measurements of celestial targets. Additionally, satellites can orbit a target for long periods of time to tell us how the target is changing over time. Moreover, landers can land on a target, and their rovers can roam around on it and do up-close experiments. Since robotic spacecraft can perform all of these jobs as well as people, there is no sense in risking people’s lives in space for this kind of work.

References

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