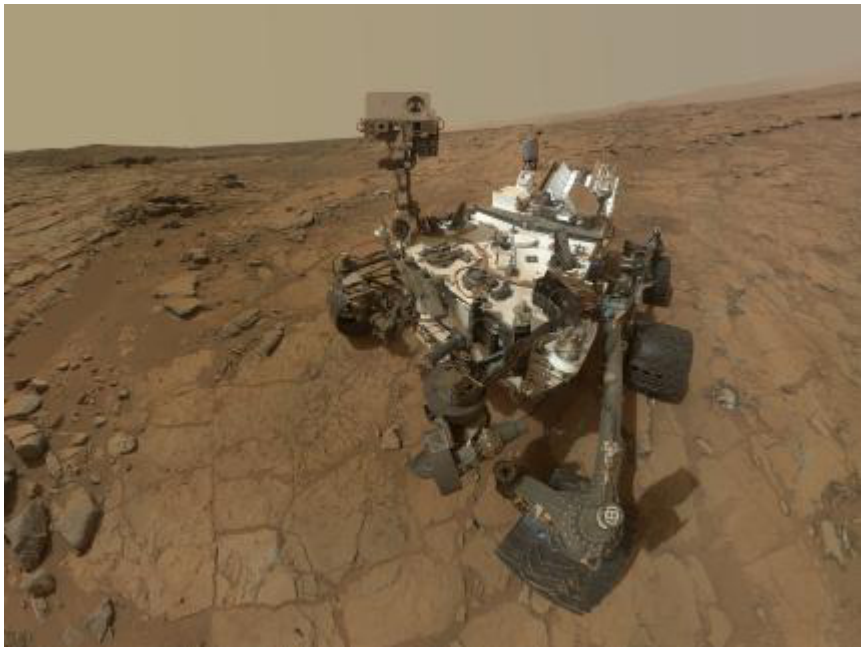
PROJET BEEMO



I – WHERE DO ROBOTS COME FROM ?

A robot is an automatic mechanical device often resembling a human or animal. The robots are famous because NASA uses them for space exploration. We have seen robots in films since the 1950' s. Robots are used in TV shows too. Moreover, the computer is a robot which helps scientists in their research on robots. For example, with computers, scientists can program robots with artificial intelligence. The first person to use the word "robots" was named KAREL CAPEK. It was in 1921. He was a Czech writer. For Capek, robots were used as electronic servants who turn on their masters when given emotions. Isaac Asimow, a science fiction writer, invented robotics in 1941. Unimate is the first industrial robot designed by General Motors Factory in1961.

II - IDENTITY : WHO IS CURIOSITY ?

Mars Science Laboratory ; Jet Propulsion Laboratory
NASA
The MSL mission has four scientific goals: Determine the landing site's habitability including the role of water, the study of the climate and the geology of Mars. It is also a useful preparation for a future manned mission to Mars. To find out, the rover carries the biggest, most advanced suite of instruments for scientific studies ever sent to the Martian surface. The rover will analyze samples scooped from the soil and drilled from rocks. The record of the planet's climate and geology is essentially "written in the rocks and soil" -- in their formation, structure, and chemical composition. The rover's onboard laboratory will study rocks, soils, and the local geologic setting in order to detect chemical building blocks of life (e.g., forms of carbon) on Mars and will assess what the Martian environment was like in the past.

III - WHAT IS CURIOSITY MADE OF?

Metal	Use
Titanium tubing	Form Curiosity's legs
Titanium springs	Add cushioning within Curiosity's wheels
Titanium bridle	Part of the parachute deployment mechanism used during the rover's landing sequence
Aluminum	Curiosity's wheels
Aluminum mortar	Part of the parachute deployment mechanism. Hand forged from an aluminum billet
Aluminum honeycomb	Formed the core of Atlas V, Curiosity's launch vessel
Bronze	DU® metal-polymer bearings are critical components in the rover's drill
Copper	Curiosity will collect samples in cells, which are sealed in a pyrolysis oven by pressing the cell's copper collar into a knife-edge seal with a force of up to 250lb. The sample is then heated to 1100°C for analysis.
Lead	Curiosity's will be powered, in part, by a Radioisotope Thermoelectric Generator that will use PbTe/TAGS thermocouples produced by Teledyne Energy Systems.
Tellurium	
Germanium	
Antimony	
Silver	
Stainless Steel	Stainless steel gas generators provided the high-pressure gas used to propel Curiosity's parachute from the spacecraft.
Rhenium	A RD AMROSS RD-180 booster engine powered the propulsion system used to launch Atlas V. Rhenium is alloyed in the jet turbine.
Tantalum	630 tantalum multi-anode capacitors are responsible for powering the ChemCam laser module on-board Curiosity
Tungsten	The back shell of Curiosity's atmospheric entry vehicle released two sets of detachable tungsten weights in order to alter the spacecraft's center of mass as it approached Mars. Individual ballasts weighed 165 pounds (75kgs) or 55 pounds (25kgs).
Gallium	Photovoltaic cells layered with minor and semi-conductor metals will provide Curiosity with power during the day.
Indium	
Germanium	
Silicon	Silicon chips etched with more than 1.24 million names are aboard Curiosity.
Copper	A penny minted in 1909 (when they were still mostly copper) is on-board to help scientists

	calibrate the cameras currently sending images back to Earth

IV - MISSION OBJECTIVES : WHAT ARE THE ROBOT'S MISSIONS ?

The Mastcam can take high-definition video at 10 frames per second.
Curiosity determines the composition of soils and pebbles with Chemistry & Camera (ChemCam).
Curiosity can determine Mars's atmosphere thanks to the Rover Environmental Monitoring Station.

V - PROBLEMS : WHAT PROBLEMS DID SCIENTISTS MEET ?

The scientists worked on researching the quality and the device of explore. During this mission, the robot met some problems : If the robot lost a piece of the element, how could the problem be solved ? If the robots was disconnected, how could they reconnect them. If their wheels were damaged, how could they repair the wheels of the robots. Curiosity cost 2 billion dollars, it's a problem to find the money.

VI - EVOLUTIONS : WHAT EVOLUTIONS CAN BE EXPECTED IN THE FUTURE ?

In the future, the scientists hope the robots can be able to differentiate the traces of organisms. It's a biological objective. For the geological and geochemical objectives, the scientists hope the robot can interpret the processes that have formed and modified rocks and soils. There are other objectives like planetary process and surface radiation objectives.

CONCLUSION

We think it's useful because the scientists need information on the galaxy and other planets that are in the solar system. It's also useful for exploring planets like Mars to find out whether life is possible on Mars.

WE USED THE FOLLOWING SOURCES to write our work

http://mars.jpl.nasa.gov/msl/mission/
http://en.wikipedia.org/wiki/Mars_Science_Laboratory
http://www.space.com/26472-mars-rover-curiosity-wheel-damage.html
http://mars.jpl.nasa.gov/msl/mission/science/objectives/
http://commons.wikimedia.org/wiki/Category:Photos_by_the_Curiosity_rover#mediaviewer/File:725554main_pia16764-43_428-321.jpg