

The space exploration, which is the best strategy ?



In this year 2016, of many exploits and advanced technologies were carried out within the aerospace one but also of the major discoveries scientific, which we will help to achieve this dreamed human ambitious, gigantic and insane that is space exploration. So far this great project remains slowed down by the economic factor like by the fundamental question: What will we make there in space ? The answer would be a quotation of C. Tsiolkovsky: "The Earth is the cradle of humanity, but one does not pass his whole life in a cradle." Early or late, Humanity will have to leave the Earth, by this fact, our curiosity, our thirst for exploits and new places to discover and our instinct unrelentingly push us towards stars. Where are we in all that and which is the best strategy ?

For a few years, the actors of the sector have thought at the stages which we will make it possible to arrive there. One of the first objectives, with the projections in engineering, is cost cutting financial. It is while starting with launching that starts. Indeed, a reusable rocket makes save tens of million dollars on each takeoff and this major advance was carried out by the SpaceX company as well on the terrestrial ground as on a barge drone in the ocean (photographs below). ArianeSpace should develop this technique for future the ARIANE 6 as well as the others aerospace companies, interested to reduce their costs in the future.



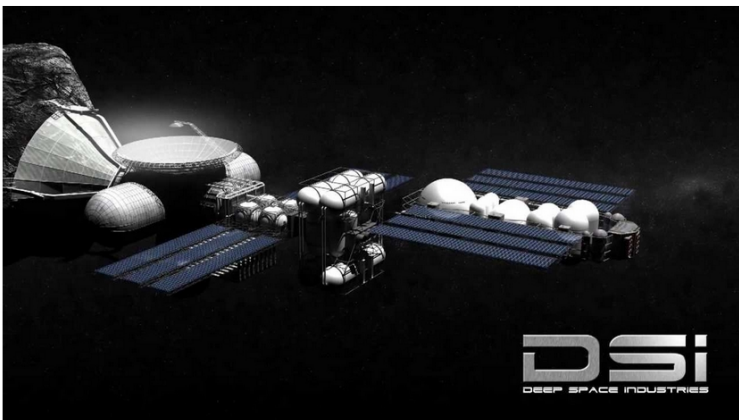
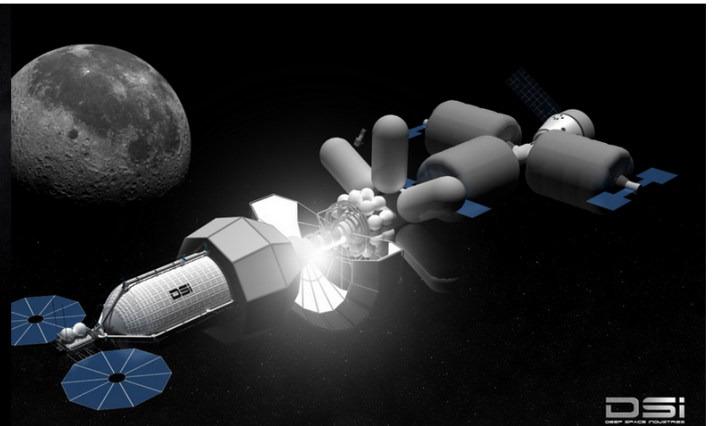
If the sector of tourism with companies visionaries, like Virgin Galactic or Blue Origin (pictures opposite), the mining sector is a showpiece of space exploration. The base of the prospection mine is found the good asteroids orbiting in the Solar system. The asteroids are rich in materials to create fuel but also for future constructions extra-planet gears. Since ten years, various missions robotized probes came out with more or less success as with Deep Impact for NASA or Rosetta for the ESA (images-below). The program FireFly de Deep Space Industries is in the course of deployment in order to locate and to analyze the asteroids them more interesting for mining. Let us not forget only what cost the expensive one is the cost of energy to put weight into orbit. Continuation of the project can become much simpler with a system of orbital refineries and service refuel stations. It's a big puzzle who comes to begin.



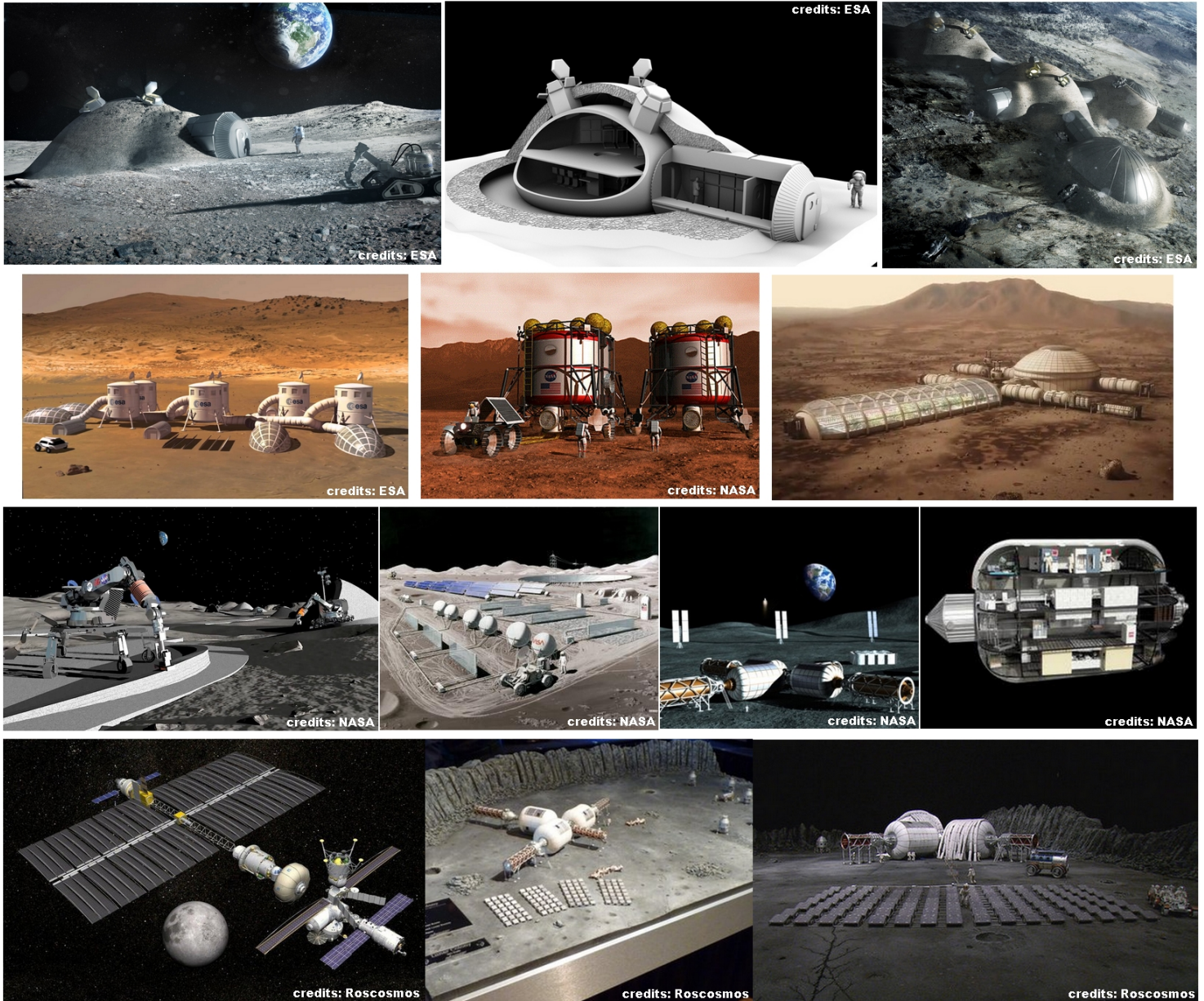
The visionaries as well as the engineers are and will be put to the test. But also astronauts with regard to limits of the physique and the mental one. Currently, on board the ISS, the astronauts carry out some 6 months missions. With the course of these stays in orbit, physiological studies and examinations are established in order to know the negative points of one long stay in space and to cure it as for the osseous and muscular loss by a meeting day labourer of 2 hrs of sport. This year, a 365 days experiment on board the ISS shared by the American astronaut Scott Kelly and the cosmonaut Russian Mikhail Kornienko was completed. This experiment shows that Human one can remain in space during one year without gravity. The next live missions could last from 1 to 3 years according to the cases. All these scientific experiments on board International Space Station is used to contribute to the improvement of the living conditions and security because space is a very dangerous place. The future scientific astronauts and "blue-collar" workers will have much with all these experiments as with Scott Kelly and Mikhail Kornienko (photographs below). Some 500 days missions of insulation on Earth were realized to devote itself to the psychological aspect of the long missions. Results of these tests showed that people having strong bonds for several years and an altruistic spirit had been able to fill their mission more easily.



The next stages, not counting the missions probes robotized towards various planets and the moons of the System Solar, will be space exploration by mining. Orbital refineries and service stations will be created to be able to increase considerably our autonomy and our energy independence of the Earth. These stations would be an intermediate point of anchoring between the Earth and all the future bases or colonies extra-planetary gears. In this model, the company Deep Space Industries shows us a plan of road to follow for space exploration and these ideas as this strategy can currently be one of the best (images below). In its wake, DSI proposes one alliance with all the other companies of the aerospace sector in order to carry out the plan more quickly.



Once the achieved previous part, we will be able to build bases and colonies on another planets or the moons. The ideas and the projects do not miss for the space conquest. Publics companies with the privates companies, many illustrations and models very inform us on the possibilities of colonizations in hostile space area. It is not very probable to have large colonies, following the example of a big city but more of the small colonies with as a majority of the scientists being able to study planet or the minors engineers dealing of maintenance and the good operation of the installations. It is important that the Man uses robots assistants to simplify the tasks astronauts. But also, a future lunar base suggested by European Space Agency. This base will be an asset for the analysis of our natural satellite and for the training of the future explorers. Because once left attraction gravitational of the Earth, the return voyage is several months. This base will be the perfect place to go up there the first land autonomous base with more security than a possible base on Mars which will be more complicated with to set up but which should all at least be the theatre of some missions from 6 to 12 months wanting to be more like an challenge for humanity that for the possibility of founding colonies with a long installation. It is a challenge for whole humanity and our future generations. (images basic projects below)



During 2018 - 2020, we will see the first stages of this gigantic project, while inserting to us in this new era of space exploration. The motorizations of the spaceships are increasingly powerful. In 1969, Apollo XI was to make a journey 3 days towards the Moon. The current techniques and equipment can it in 1 day, to see a few hours. Without forgetting the promising ionic motorization. A vision and a road plan to be held as previously quoted in this document, will be able to allow Humanity to leave its "cradle" in better conditions and in a methodical way. Like by the same occasion, to preserve our planet by the use available resources in space and with minima on Earth. This great project is the base of an adventure which will make us, can be one day, travel towards the other stellar systems and why not everywhere in our Galaxy.

Guillaume Mahe