Genesis of Atmospheres or Assimilated

XR-GENESIS Mission

Note: several satellites and other planets have already been the subject of technical remarks in this Agency presentation.

The purpose of our mission is to determine which means are available to the first settlers in order to install a colony on a celestial object (planet or moon) or on an orbit, that would possess considerable resources capable of ensuring their survival.

It is reasonable that the first settlers would arrive in limited numbers aboard of a spacecraft originally built on the Moon or on the terrestrial or lunar orbital place.

Indeed the release speed of ejection on the Moon is lower of 1/6 compared to that on the Earth and the construction of a spacecraft destined for colonization, could have dimensions of 300-500 meters (poly-shaped:cylinders-spheres-toroids) or 300 tons (on the Moon base).

His lunar weight would be close to 50 tons, much easier to launch.

Click here to be directed to some information about the Moon

The Moon

It would be better and easier to build on the Moon, rather than to assemble in orbit a large spacecraft.

The propulsion required for the release could be provided by liquid hydrogen engines coupled to high-density plasma motors (patents 2006-2016).

It would not be necessary to use solid chemical propulsion in order to free oneself from the lunar attraction, especially since the basic chemical raw materials for chemical propulsion do not exist on Moon (Liquid oxygen and compounds unstable nitrogen).

Only fundamental and vital resources exist on the Moon including WATER.

This water could easily be decomposed into Hydrogen and Oxygen by mini-nuclear power plants producing sufficient electrical energy. THE PAYLOADS MADE AVAILABLE TO COLONS 2020-2025.

A recent agreement has been sign between NASA and Russia for an rbital station, proof of the important interest for Moon.

For the characteristics of a terrestrial launcher we can quote the Saturn V, with a payload of 45 Earth tons or 7.5 tons on the Moon (so to speak).

Click here to be directed to some information about Saturn V

This first payload could consist of a first lunar module equipped with powerful engines that would be assembled with other lunar modules, at least 5 in number, in order to constitute the final ship on for the Moon or lunar orbit.

Then this ship might consider trips to Mars or other planets and moons. The lunar base solution is preferable because settlers could build parts of additional vessels and habitable domes on the ground or underground and thus apply the plasma technologies to manufacture many necessary materials.

Oxygen could be removed from ice water or rocks by simple or plasma thermal dissociation(thermolysis).

Oxygen could be low enriched with Helium 3%.

Some of the breathable nitrogen could be obtained by applying the plasma tools to the lunar rocks.

Nitrogen is a gas that our breathing uses and rejects during pulmonary circulation, it is not vital to lung life, however biological nitrogen must be absorbed by human via food only for participating in the cycle cellular and genetic (purine and pyrimidine bases) AGTC, U.

Nitrogen (N) is an essential component of DNA, RNA, and proteins.

Click here to be directed to some related information

Basaltic rocks very rich in nitrogen could be discovered in shallow hard Moon, the Moon having lived volcanic or magmatic periods in the past, when it possessed a magnetic field.

PRELIMINARY CONCLUSION (limited)

It can therefore be concluded that the atmospheres N2, O2, He, will be available on the Moon by chemical means of high temperatures chemical engineering and by electro-synthesis. As well, considerable liquid water reserves could be available (warming of ice zones on polar surfaces or average depth (300 meters frozen lakes) - Moon spectrometry will verify. The moon has been bombarded for 2 billion years by solar and / or cosmic radiation, when the lunar magnetic field disappeared, lunar atmosphere quickly was exhausted all the more because the gravity is 1 / 6em of that of the earth, and it attracts less easily the N2-O2 molecules that could have been present 2 billion years ago.

It won't be necessary to bring a large amount of initial resources from the Earth for use on the Moon.

PERT-HELIOTORR-type plasma tools will be essential.

There are other variables on the Moon or on other celestial objects that will depend on the advancement of our Technologies.

GENESIS OF A PARTIAL LUNAR TECHNOLOGY ATMOSPHERE

It will not be necessary to consider the significant creation of an atmospheric reserve.

The creation of domes or structures weakly permeable to UV, γ, and cosmic radiation cannot be composed of polymers that are generally transparent to EM hard radiation.

Only silicates or borosilicate glasses can represent a protection for the colonies.

UV radiation could be conveyed by mirrors in some agronomic, hydroponic greenhouses.

The UV radiation of plasma machines installed in domes could serve as artificial UV sources for agronomic or biological areas.

Some domes would be partially coated with special opto-quantum layers manufactured by ULTRA PURE plasma processes to provide some of the electrical energy and would relay some of the relaxed thermal energy into spheres or agronomic zones.

It is logical to conclude that settlers will be able to settle on the Moon or in Moon orbit in order to safely prepare trips to Mars or other planets and moons with an excellent control of colonization.

The following note is linked to the Missions, XR-PROPULSION and XR-COLONIZATION

Moreover it is possible that the research and development of more powerful plasma engines of 10 K Newton! and more (compared to the chemical propulsion system) allow accelerations of more than 30,000 to 300,000 seconds (SI) Specific Momenta, some developing in other laboratories and at ionic speeds of 1000 km/s or more.

It does not currently exist known plasma methods able to deliver ionic velocities of more than 100 km/s.

The ideal plasma engine should eject in the deep space the ions at 10'000 km/s or 100 times faster than the velocities obtained on earth.

This challenge can be overcome, with new plasma technologies that will emerge in a decade (2017) to be utilized at 36'000 km altitude (Earth) or in lunar GEO orbit.

VASIMR currently works for 2017 with a relative force of 5 Newton.
The VASIMR 200 engine delivers during 1000 seconds (SI) of ejection of ionized Xenon atoms from the plasma (Xe at 50 km/s) - complicated calculations must be made taking into account the drift velocity ΔV, the progression of the drift velocity is logarithmic.

Consult the MISSION XR-PROPULSION or XR-COLONIZATION.

It is clear that with such speeds of propulsion,even at 3/1000 em of the speed of (c) - 300'000 km/s, will require the spacecraft to detect the objects which can collide with it. The detection will have to be fast and most anticipated, only Quantum Machines in development will be able in real time to carry out these calculations of detection and prevention and corrections of trajectories in case of imminent danger.

Lunar requirements in various artificial atmospheres will be easily elaborated.

The oxygen coming from the electrolysis zones, and some helium, and a percentage d of nitrogen, which mechanically serves the pulmonary alveoli but whose biological action is useless.

Further studies of vital gas mixtures will have to be tested on the Moon, before considering long stays on the moon, given the differences in gravitational force.

Studies of gaseous mixtures in the absence of gravity cannot be extrapolated to lunar conditions.

VENUS

This planet cannot be considered as able for harboring human colonies under standard conditions of temperature and pressure as on Earth. On the other hand, colonies of robots could be envisaged, with a surface pressure considerably high 93 bars and with a temperature of 740 K, only mechanized and protected structures could carry out scientific missions, but also Mining and Refining, including the search for liquid masses of water or hydrocarbons.

On the other hand, in a collateral manner, the VENUS atmosphere could constitute an important source of oxygen and finely divided carbon which can serve as catalytic beds for hydrogenation operations.

VENUS should be considered as a possible industrial site on which it would be possible to extract resources - C, Oxygen, WATER, Hydrogen and possibly methane and / or Hydrocarbons and Silicon.

The oxygen being obtained by transformation of the CO 2 (Gas become super-critical liquid at 93 bars) by means of the PERT-Agency plasma technologies.

The ground temperature of 740 K can confirm by analogy that this temperature is relaxed and comes from an initial plasma in the state PLTE originally 3 billion years ago, for confirmation, Venus has a very weak magnetic field , and trails in its wake a 45-million-kilometer-long plasma tail, first observed by the SOHO probe in 1997.

In all cases, it is possible to create plasma on VENUS.

C02 can be used in plasma tools and traces of rare gases such as Argon or Xenon are favorable to the creation of plasma even atmospheric pressure.

MARS

The atmospheric pressure on Mars is very low (100 times lower than on Earth) and does not allow its thermolysis in simpler chemical elements C and 02 by the plasma tools.

The creation of special synthetic atmospheres (02, N2, C, He, Ar, Xe) and 03 will be carried out from volcanic rocks on the surface, sediments and semi- deep and WATER which are mainly composed of Silicates simple or complexed with Aluminum and Na.

The PERT Agency plasma tools will be used for these GENESIS missions. Domes and cockpits for robots and men (ground and underground) would be built according to the processes already described in XR-COL, XR-SPACI and XR-PRSE sections.

Logically, the first operations would be carried out from pre-fabricated materials in small quantities in orbit and assembled robotically on the ground.

The technological vessel could come from the Moon.

The Martian and Terrestrial gravity being substantially the same, the plasma engines for the return of technological space shuttles (having brought plates and other materials on Mars) should be more powerful than those having been built on MOON.

The installation of laboratories on Mars, including agronomic zones, would be developed later, because they require large quantities of oxygen and a little Ozone, which the vital immediate production destined for the colonists could not ensure, the first plasma tools serving for the IMMEDIATE elementary spots.

The complete ENGINEERING of a colony implantation in the solar system is the subject of this presentation, although many guiding elements have already been described.

JUPITER and SATELLITES

Depending on the known information

We must consider JUPITER as a considerable industrial reserve of Hydrogen 90% and HELIUM 10% and certainly of its isotope 3He.

These superficial reserves could be supplemented by deep reserves to be qualified and quantified.

These reserves would allow industrial spacecrafts built by settlers to "market" in this gigantic CRYOSTAT and recover H2 gas, liquid or metal and Helium to store these precious reserves for engines, factories, and WATER and atmospheres.

Despite strong winds of 300 MPH - it would be possible to penetrate the Jupiterian space with tanker engines, but the ejection speed 53 km/s almost 5 times that of the Earth forbids for the moment this kind of industrial pumping. In addition the technology for the storage of H2 and the pull out from the Jupiterian attraction once the payload loaded, does not exist yet.

Only atmospheric pumping of reserves H2 and He would be conceivable-2017.

EUROPA (moon)

Europa is the smallest of the four Galilean moons orbiting Jupiter, and the sixth-closest to the planet. It is also the sixth-largest moon in the Solar System.

Europa was discovered in 1610 by Galileo Galilei and was named after Europa.

Slightly smaller than Earth's Moon, Europa is an essential Iron-Nickel core. It has a preserved atmosphere of oxygen. Its surface is striated by cracks and streaks, whereas craters are relatively rare. In addition to Earth-bound telescope observations, Europa has been examined by a succession of space probe flybys, the first occurring in the early 1970s.

EUROPA can be considered a possible place for the installation of a colony, the presence of liquid water is demonstrated.

However the atmosphere is not viable for man due to its extreme rarity Surface pressure 0.1 µPa (10-12 bar)

Thus it would be necessary to bring for the colonies of men domes and cockpit installations containing a viable atmosphere.

This atmosphere of synthesis, would be elaborated from the rocks and minerals present on Europa, thermolysis plasma, are able to generate O2, N2, He, Ar.
Controlled thermolysis could provide a water content of non-negligible composition which can be used directly.

Water could also be used as a raw material in electrolysis operations.

Other minerals could be exploited also by more conventional chemical methods (reaction correction for the use of water in reactors which would be mandatory due to the low gravity on Europa).

With respect to organic chemistry, it would be ensured by the thermolysis of carbonates or by the discovery of hydrocarbons or methane pockets.

As we do not know whether fossil carbon life has existed on EUROPA, these hydrocarbon resource assumptions are temporarily to be discarded.

SATURN

The remarks of experimental physical chemistry are the same as for JUPITER with the difference that SATURN contains Hydrogen Deuteride 1H-2D at 0.01% in its atmosphere and certainly in free or icy waters.
This residual atmospheric concentration is very low compared to 3.2 / 1000em (heavy water / light water) for the concentration of D20 (heavy water) in terrestrial water.

SATURN could become an important industrial source for the settlements provided we possess the future appropriate technologies (engines) for the filling of a spacecraft's liquid hydrogen tanks.

Only the heart of Saturn seems to be rocky or metallic.

The operations of releasing the gravity of Saturn will be difficult after filling because the gravity on Saturn is substantially equal to that of the earth. Saturn10.34 / 9.81 Earth.
ONLY AN EXTERNAL ORBITAL COLONY WOULD BE DESIGNABLE FOR MEN AND ROBOTS AND INDUSTRIES (PERT-HELIOTORR STATIONS)

URANUS and NEPTUNE

These glaciated giant planets have very interesting atmospheres with 25% Helium and 74% Hydrogen and 1% CH4 and are considered as source of water and industrial gases.

MERCURY(strategic planet)

XR-COL, XR-SPACI and XR-PRSE

HELIOTORR- PERT STATION CAN BE INSTALLED NEAR THE PLANET MERCURY

(station built with new materials coming from ultra-pure elements technologies elaborated in Deep Space or Moon)

RESOURCES: Telluric planet-mineral composition ("similar to Moon").

The atmosphere of Mercury is constituted with traces of He, H2, Ne, Na and cannot be mined in order to create atmospheres.

The ground of Mercury could reveals 3He, because Mercury is the nearest planet of Sun (4He-3He - ejection from sun plasma at surface).

In addition MERCURY could represent the ideal place in order to load HELIOTORR station.

The HELIOTORR station (built on Moon) would be installed and parked on the Mercury planet.