

Futuristic Colony Settlement in Outer Space: A Review

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Abstract

Space Settlement is a habitat in orbit. As opposed to live outwardly of a planet, people will live inside an enormous space craft. The aim dictum of space settlement is to endow with great conditions to living outside Earth, Arrangements to acquire cash from the extraterrestrial assets, stipulation of sufficient technologies which are revolutionary as well as modernization in the design. There will be robot cops and many CCTV surveillances for safety purpose in our space colony. Gravity will be provided to necessary things. Zero gravity for children's play area as they fly in air and enjoys a lot. Our colony covered with solar panels, which absorbs the heat and energy from sun and produce in our colony. Food is what gives us energy nutrients, and power to work. It is what keeps us going. Agriculture activities in space aren't that easy to that on earth. The best and efficient ways for cropping in space are aeroponics, hydroponics and zeponics. Space colony guarantees a safe and sound locale for the contemporary society to survive in and provide excellent conditions for living outside the Earth. This paper provides an overview of main cases like life management, water management and waste management in colony settlement.

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1. Introduction

SPACE SETTLEMENT is very important because if the earth is dead or destroyed then where would the people live, because of this main reason colony for the people to live or settlement is created. It is like giving a new birth to a new planet. But it takes more than ½ year to get settled because it is totally different from our planet. There are 4 torus in our colony. Hospitals, schools and securities are very important for the people which are provided in our space colony.

In India currency used is rupee, space colony use tags as the currency 1 TAG=55 RUPEES .For every purchase there is tax. included. In the colony, government is very important as there should be democracy to give equality and maintain colony from not doing crime or kill or fight. There are many industries like clothing industry etc. Our colony is having many companies because if the people go for

work only they can earn some money and run the family. The main obsession is the accommodation of people in the colony is 25 -30 thousand. In contrast space settlement is the fantastic result to the crisis of protecting a number of human race, together the valuable contribution of ethical understanding in the world [1].The initiative in the arouse of the construction of Space colony is to provide a cordial and inhabitable condition in the environment of Space.

2. Literature Survey

Brian Patrick Green[1] proposed that individual endurance is jeopardized through various dangers. Many humans will agree that humankind is in problem. Since space state gives human race the possibility to strikingly lift the likelihood of perseverance for our gathering, it is hence an ethical

basic to settle space as fast as could reasonably be expected.

Jose V. Lopez et al[2], proposed a proposed a frame structure for new exchange dependent on the logical ramifications of future colonization and terraforming. They additionally illustrated a hidden standard and plead remark to drive an open and private research motivation that improves different life forms for potential space colonization.

Leonard M. Weinstein[3] tested a new-fangled technique for growing business society ahead of globe. The method would possibly take advantage of the particular composition of Mars and its moon Phobos to build a delivery tool able to elevating mass from the ground of Mars to area at a low value.

Navdeep Sharma et al.[4], proposed the elementary needs of individuals existing in space .They are position of the settlement, planned Considerations , Life hold up System, expertise used to construct such a huge structure and the technology for managing the various functions of the settlement.

Stephen Covey et al[5]., concerned the incredibly first stages of life styles growth for the duration of the sun system and beyond. It is ready a noticeably easier route to the first area settlements. They also mentioned a Space settlement is a home in space in which humans work, live, and, for folks that desire, raise their youngsters.

Moreno Tiziani [6] proposed that individual existence in space has transformed. They mentioned no longer a subject of “winning The Space”, but to let mankind reside in “a space”. They examined that Anthropology could assist upcoming people to rethink the surroundings of the spacecrafts, and the habitats of upcoming colonies Svetoslav Alexandrov [7] provided a new space colonization foundation. Author predicts that, in spite of criticism, there are reasons for manned space exploration and succeeding colonization. author also indicated two reasons for space colonization: 1) adjustment to new milieu for areal development; 2) fiscally practicable benefits from mining on asteroids.

3. Why do we require space colony?

Space colony is very important because when our earth dies then the people living in earth, where they will go? So we created a one more planet means a settlement in which people can live like they live in earth. It is required because if we live like that only then many people will die. In our settlement occupation is 25 – 30 thousand if this gets successful then we will launch many like this. Space colony considerably dreamed of planetary break away from the expansion of Homo sapiens to outer area[2] .It is same as earth but in different ways there are recreational activities like zero gravity basketball, football and galactic racing, gym, parks, and many more entertainment activities for the people to enjoy. 90 percent it resembles like earth but 10 percent will

be different form of it. This is the main reason why we need space colony.



Figure 1: shows space colony settlement with torus

In Space colony or space settlement there is a middle torus which is used as head quarters. It is most important in settlement because they have to control the space settlement .For example, if some asteroid occurs then these people will rescue the space settlement from some disasters.

4. Preferred Location

Preferred location of space colony is EARTH GEOSYNCHRONOUS ORBIT. It is selected as the primary location because of the asteroid 3554 Amun .Since we need complete protection for space colony ,we have kept in such a location .If asteroids come near the Amun, it can capture and extract the minerals ,water from Asteroids. This is the main reason why we have placed our space colony away from earth. Near to earth this may cause many problems to our space colony since asteroids move faster near earth and it will not be able to capture the asteroids.

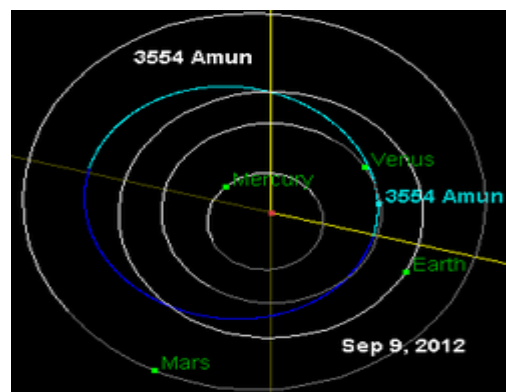


Figure 2: shows location of our space [8]

5. Requirement For Populace In Space

Table 1: Requirements for populace in space

1	Oxygen	4.2kg
2	Hydrogen	16
3	Temperature	20-40degree.
4	Pressure in space equal to	1 atmosphere in earth
5	Energy is	1kwh
6	Each person can eat upto only 3.5 kg per day	3.5
7	Use limited water for all the purposes	20-30 litres per day.

The above table shows the requirements like oxygen, hydrogen, temperature pressure needed in space.

6. Life Management Support

Space colony has a completely practical existence support system so that it will be used to achieve the aspire of the agreement to make the life of the humans comfy[4]. Colonisation have smooth and reusable water, fresh Air , all kinds of vegetation and fauna for adequate meals, outstanding Climate with intervallic transform in seasons. It's going to additionally have provisions of electricity like Hyper Ex Solar panels. In space we are not going to use petrol, diesel etc instead we use battery cars which is directly connected through roads. When the vehicle is on road moving it gets charged automatically .For this there is a separate lane for those vehicles which need charge. Robotics does all the impossible works and it is much easier for the humans to live there and do the work. Robots can a help us in many ways and it is help full to police department also.it can stop robbery, theft, murder and accident and many more fights. Different method to grow food crops in space are

Hydroponics

Hydroponics means food grows without soil by using nutrient solution.

Aerophonics

Aerophonics is the approach towards developing plants noticeable all around with the help of a fog situation.

7. Water Management Support

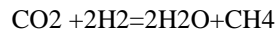
Water would be used all over the time and is most essential in our life .In space it is very hard to produce water. we can also extract water from asteroids by

capturing them and extracting from it. So the method to produce water is Laboratory method.

Two types are

1.BOSCH

H₂, CO₂ and O₂ will be used to provide water



Extraction Of Water From Moon

R.L.S.S[Regenerate life supporting system]

To generate current in space, electrolysis is used since decomposition of oxygen and hydrogen will produce electric current.

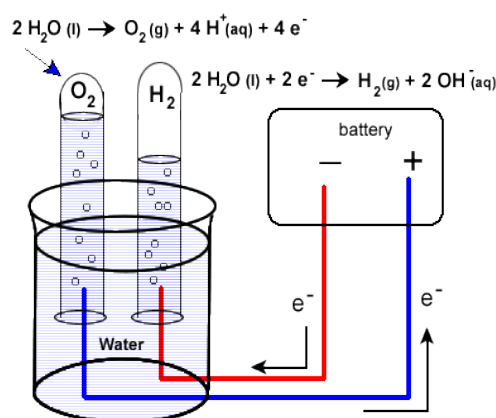


Figure 3: Process of electrolysis [9]

Waste water is produced because of main reasons

1. If we keep the tap open
2. And while brushing we leave so much of water from tap
3. While bathing also we have to take only I bucket of water

Water recycling is very important in space because their is less amount of water, so we have to reuse water and use as a fresh and clear water.. The process of making dirty water becoming the regular clear water is called water recycling. Reuse may include irrigation of agricultural fields. Water recycling is important because we waste much of water so, water may be recycled and reused.



Figure 4: Water recycling [10]

Total Water Used

RESIDENTIAL [per person]	20 litres
AGRICULTURE [per day]	70 litres
INDUSTRIAL[per day]	40 litres
INSTITUTION AND [per day]COMMERCIAL ZONES	20 litres
TOTAL WATERUSED	150 litres water

8. Waste Management

One of the main problems in space is waste management. If we don't manage this then it may be toxic and stinking, and we now that there are many diseases spreading because of this. Because of that so many people died. There are 3 main types of wastes those are

- Solid waste
- Liquid waste
- Gaseous waste

In space we have limited resources, so we have to recycle them we now that everything is recyclable. Solid waste like paper, plastic wood, glass etc. Can be recyclable. Food are also important and its waste is also produced like some unused food, waste food etc.

9. Conclusion

Space colony is helpful and useful to humans in earth as they can live comfortably on space. This also provides security by Survival capsule or Survival pods which helps evacuation of people living in space settlement in case of any emergency. In this the capacity of people is 2, like this there are many survival pods for the safety of people. The desires of a individual living support system for long-duration space settlement are studied. These regions can be further addressed through studies and improvement.

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