



2007 United Kingdom Space Design Competition

THE FOUNDATION SOCIETY

The Foundation Society is an organization founded for the specific purpose of establishing settlements of its members in space.

The Foundation Society began the pursuit of its goal in the mid-1990's, when it led several grass-roots space advocacy organizations in fostering development of commercial infrastructure in Earth orbit. It first researched profit potential for launch vehicles providing lower costs per pound to orbit. Then the Society assured that new launch vehicles would have customers, by providing venture capital for companies developing new products that utilized or required launch services. The Foundation Society funded lobbying in U.S. Congress that resulted in favorable tax and equity-protection laws for companies investing large percentages of their assets in perceived high-risk ventures with long-range return. Then, it further assured a strong customer base for commercial launch services with long-range commitments for government-sponsored scientific and exploratory space missions, and removed the government from the businesses of launch vehicle operation and space hardware fabrication. The results of these efforts encouraged American corporate interest in commercial development of launch vehicles and space infrastructure.

The Society outlined a master plan in the early-to-mid 1990's for establishing eight Space Settlements, in Earth orbit, on Earth's moon, in Mars orbit, and on the Martian surface; it amassed members and wealth to insure sufficient resources to begin implementing the plan as soon as economic reality permitted. The Foundation Society defined the primary condition for initiating this plan as a reduction of LEO launch costs to \$1000 per pound.

In 2010, a global warming crisis was considered real, irreversible, and disastrous to Earth's peoples. As a result, the Society voted to waive the initial condition and begin implementation of the plan, due to lucrative arrangements made with the United Nations to reduce the threat of devastating global warming on Earth. A complex deal involved venture capitalists who financed the project, with promise of profitable reimbursement from United Nations members if the project worked, or partial reimbursement from the assets of individual Foundation Society members if it failed. In return, the Foundation Society built a huge (Texas-size) solar shield at the Earth-Sun L1 libration point; when completed in 2029, it reduced insolation on the Earth by 0.5% and eliminated any future threat of global warming. The plan included construction of the Foundation Society's first space settlement, Alexandriat, as a manufacturing base, which it now operates as its own.

Construction of Alexandriat began at the Earth-Moon L5 libration point in 2014. Within five years, enough of it was completed to enable a thousand residents to move in, and then to begin construction of the solar shield. The settlement was finished and provided homes for its full population of 10,000 people by the end of 2024.

The advances in space transportation and construction techniques inspired by the urgency of the solar shield project caused some predictable related benefits. On the fringes of

Alexandriat's primary mission, some Foundation Society members developed products that can be used for other applications in space. Some satellite components can be built and installed in space less expensively than if they were designed, analyzed, and tested to withstand the rigors of launch. Relatively fragile components (e.g., antennas, lenses, sensors, and solar panels) are particularly amenable to in-space manufacture. The Foundation Society anticipated a "space construction boom" when assets involved in solar shield construction were no longer needed for that purpose. It therefore elected to build a second settlement, Bellevistat, as its primary space manufacturing center in L4 orbit. A lunar settlement, Alaskol, serves as a center for export of lunar materials to space construction projects; it also serves as a base for expansion of lunar surface infrastructure, and has become the hub of a lunar tourism industry.

It became clear to the Foundation Society that commerce in space has matured to the point that a "Singapore-in-orbit" would be valuable for providing cargo transfer and financial services to space-based businesses. Indeed, with completion of Alaskol, the Foundation society has more members in space than on Earth's surface. Columbiat, the third settlement in Earth orbit (at L5, which it shares with Alexandriat), is the largest of the Society's orbital communities, and is also the location of Foundation Society Headquarters. The demand for lunar materials, both for Foundation Society projects and other enterprises, led to a decision to establish Balderol as a second lunar facility, in close proximity to more diverse resources of the lunar far side. As human interests expanded outward in the solar system, the Foundation Society determined that the time had come to reach toward a long-term goal, settlement of the planet Mars. Ten years of human exploration missions on the red Planet have revealed plentiful water sources at the poles and in lowland aquifers, and an abundance of mineral riches. Establishment of the Aresam settlement on the Martian moon Phobos enabled the Foundation Society to conduct its own surveys of the planet for suitable surface construction sites. The Mars surface settlement Argonom is currently under construction in Valles Marineris.

All of the Foundation Society's settlements have developed successful businesses, turning ample profits for the organization. Aresam's services to the many small mining operations in the asteroid belt have grown, to the point of distracting from that settlement's primary mission as the Port of Entry for Mars. The Foundation Society has therefore determined that an additional settlement is justified to serve this market. A location in the asteroid belt will be even more convenient for trade with the mining stations, and will enable the Foundation Society to conduct its own significant materials harvesting operations, primarily to provide raw materials for construction of vehicles that can be utilized at the outer fringes of human habitation in space.

Although the Foundation Society has developed sufficient financial reserves to invest in expensive projects like Space Settlements, the organization's goal is to build as many as possible, and therefore to develop an efficient construction infrastructure. To this end, it expects that lunar and other extraterrestrial materials will be utilized extensively in construction of its settlements.

The Foundation Society has established a convention for naming the new communities it creates, allowing initial residents personal choice in selecting names for their cities, yet providing some traceability of place and history. A suffix indicates location, and communities with the same suffix receive names in alphabetical order. Hence, the three Earth-orbiting settlements are named Alexandriat, Bellevistat, and Columbiat ("at" = "(in orbit) around Terra"). The lunar settlements are Alaskol and Balderol ("ol" = "on Luna"). The first settlement in Mars orbit is "Aresam" ("am" = "around Mars"); "Argonom" is the first settlement on the Martian surface ("om" = "(in orbit) around Mars"). For contract award purposes, the first settlement in the asteroid belt is being called "Astoria" ("ia" = "in asteroids), although its occupants have not yet been selected and the name has not been finalized. Origins of the settlement names are as follows: Alexandriat (Earth orbit, L5) honors Alexander the Great, who in his time was a visionary thinker, an advocate of scientific knowledge, and expanded the civilization of the greatest empire the world had known to remote places where others dared not go.