

# **“A FUTURIST PERSPECTIVE FOR SPACE”**

**DISCOVERING AND INFLUENCING OUR  
INTENTION IN EARTH/SPACE**

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# **DANCE OF THE PERMANENT WHITE WATER MANAGEMENT**

## ***THE FACTS***

We are living in a time of the most rapid change of events in the history of humanity

## ***THE CHALLENGE***

Provide leadership and vision within this dynamic and turbulent environment

## ***THE RESPONSE***

Organizations must adapt to increasing levels of complexity and chaos, and understand boundaries and relationships with other interacting systems to remain viable and to constructively evolve

# DANCE OF THE PERMANENT WHITE WATER MANAGEMENT (CONT)

## *THE FOCUS*

- Leadership, discipline, and integrity
- Relationships at multiple levels
- Vision, intention, innovation, and insights
- Diversity, creativity, and risk taking
- Respectful dialogue and open listening
- Life-long learning and implementation skills

# **VIEWPOINT ON SPACE**

- **Transform the space program into an Earth/space movement**
  - **Expand the diversity of human experience into space**
  - **Learn from the barren engagement experience from outer space**
    - **Commercial perspectives**
    - **Ecological perspectives**
    - **Personal adventure perspectives**
- **Domains**
  - **Space Exploration - Destiny Driven**
  - **Space Science - Discovery Driven**
  - **Space Security - Threat Driven**
  - **Space Economics - Production Driven**
  - **Space Settlements - Human Genes Driven**
  - **Earth/space Sustainability - Survival Driven**
  - **Different Life Intelligence - Awareness Driven**

# **THIRD MILLENNIUM STRATEGIC INTENTION**

- **Establish permanent human settlements in Earth orbit**
- **Evolve and develop a viable space commercial market**
- **Seek discovery, purpose, value, and meaning for humankind in the frontiers of Earth/space**
- **Live, work, and prosper in multiple space communities in the solar system**
- **Develop a human-energy presence in Interstellar space**

# A PERCEPTION SHIFT OF SPACE

- An expanded perception of space
  - Inner Space - Individual aware beings at the body, mind, soul, and spirit levels
  - Terrestrial Space - The Earth's *surface* and *atmosphere*
  - Outer Space - Beyond the Earth's *atmosphere*
  - Under Space - Under the Earth's *surfaces*
  - Relationship Space - Aware beings interacting with each other and with other life forms and elements of the cosmic environment
- Relationship Space is a human frontier and involves deep connections between all life and all elements of the living universe
  - Metaphors such as weaving, layering, and birthing will be utilized, and different symbols and language forms will naturally evolve
  - Requires an understanding of the relationships between the parts and the whole of systems

# **STRATEGIC EARTH/SPACE GOALS**

- **Provide effective security of life in the universe**
- **Preserve sustainable ecological systems**
- **Develop economic prosperity**
- **Expand realms of knowledge, wisdom, and compassion**
- **Understand the origin and development of the universe**
- **Preserve the human species**

# OUTER SPACE CHALLENGES

*Drive Towards An Integral Space Movement Strategy  
Involving Both A Human Push Into Space and A  
Cosmic Pull From Space*

- Search for Origins and Life
- Evolve Outer Space Infrastructures
- Sustain Human Life on the Frontiers
- Learn to Adapt and Influence the Future
- Develop Intelligent Machine/Human Relationships
- Understand System Concepts Between Living Entities and the Regenerated Universe



# **THE APOLLO EXPERIENCE - A HISTORICAL CENTRAL PROJECT**

- **Core patterns of human experience**
  - **Changed perceptions of space and time**
  - **Impact of silence and weightlessness**
  - **An abiding concern and passion for the well-being of the Earth**
  - **An enhanced understanding that the cosmos is interconnected**
- **The Apollo Program symbolizes the birthing of outer space exploration**
- **The first human birth in space will represent the beginning of outer space settlements**

# POST-APOLLO CHALLENGE

- **Build upon the Early Earth Orbit Missions, Apollo, and the International Science Programs**
- **View civil, defense, and commercial Earth orbit space as part of the gateways to evolutionary development of outer space**
- **Search for opportunities to interweave science, human/virtual exploration, economic and infrastructure development with**
  - **Political and legal institutions**
  - **Ecological sustainable systems**
  - **Cultural and social systems**
  - **Education, learning, and work force development systems**
  - **Aesthetic institutions dealing with the nature of beauty**

# MAJOR INFLUENCE CONSIDERATIONS

- Emerging commercial markets for Space
- Must understand the importance of ultimate frontier drivers
- Self organizing systems involving fluid boundaries and layered interfaces
- An integral approach to reality - measurement and experience
- Enhanced relationship perspectives including reflecting, mirroring, and framing principles

# **OUTER SPACE SYSTEM OPPORTUNITIES**

- **Earth Orbit Access and Infrastructure Development**
  - **Distributed and mobile launch, landing, and spaceport facilities**
  - **Technologies involving new concepts - propulsion, mag levs, tethers, elevators, and low mass systems**
  - **Interweave LEO, MEO and GEO activities across civil, defense, and commercial space involving robotic and human activity**
  - **Develop space transportation hubs for planetary surface return missions and beyond earth orbit return vehicles**

# OUTER SPACE SYSTEM OPPORTUNITIES (CONT)

- **Earth Orbit Operational Missions**
  - **Communication and remote sensing satellites**
  - **Growth of space based orbital services - repair, refuel, assemble, maintain, reboost, public safety, and rescue**
  - **Space tourism**
  - **Power utilities in space**
  - **Manufacturing and fabrication**
  - **Virtual entertainment and education**

# **OUTER SPACE SYSTEM OPPORTUNITIES (CONT)**

- **Near Earth Orbit Missions**
  - Lunar operations
  - Orbital libration locations
  - Asteroids
  - Planetary defense for Earth Crossing Objects
- **Potential space industries**
  - Lunar flyby space tourism
  - Remote human health services
  - Space resources - mining, manufacturing, and processing
  - Supportability for integrated robotic and human missions
  - Power utilities in near Earth orbit space
  - Robotic and human mission maintenance

# OUTER SPACE SYSTEM OPPORTUNITIES (CONT)

- **Far Earth Orbit Operations**
  - **Basic infrastructure requirements involve information, transportation, habitation, and power**
  - **Outer stellar space operations**
    - **Virtual exploration**
    - **Robotic outposts**
    - **Observational and curatorial science**
  - **Transportation nodes beyond Earth Orbit require additional architecture systems development**
  - **Public/private sector alliances may be advantageous for infrastructure development of far outer space**

# SPACE COMMERCE

- The relationship between the private and public sectors in developing space commerce needs better definition
  - Progressive frontiers evolve from science and exploration into economic development involving commercial markets
  - A typical frontier cycle - robotic/observational programs, leading to exploration/science human missions, followed by permanent outer space settlements
  - The dynamic roles of government, industry, academia, and other social/cultural/legal elements are important to develop
- A general strategy must incorporate entrepreneurial and alliance principles
  - Long term - major public sector leadership
  - Mid term - collaborative leadership, including quasi-government
  - Near term - major private sector leadership



# SPACE COMMERCE (CONT)

- An appropriate balance between government expenditures provided, and commercial revenue generated is needed
- Strategic roundtable forums have been proposed to better develop the roles of private and public sectors
  - For the economic benefit of this country
  - For the better quality of life for all humans
  - For the expansion of knowledge, wisdom, and symbolic learning
- Potential roundtable topics
  - Develop plausible combinations of public and private energies
  - Establish world class education and work force skills
  - Initiate sensible public and private regulatory functions
  - Develop policies that encourage innovative groups and small businesses to effectively participate in the space frontier ventures

# OUTER SPACE MAJOR TECHNOLOGIES

- **Infrastructure Technology**
  - Information and Communication
  - Transportation, Habitation, and Power
- **Advanced Human Support**
  - Life support and health care
  - Long term crew psychological support
  - Mobil, light weight space garments
  - Radiation effects and design protection
  - Gravity effects and countermeasures
  - Food/nutrient generation and preservation
- **Nanotechnology and Biotechnology**

# BEYOND EARTH TO THE STARS

- Building a strong Earth orbit infrastructure is key to human exploration and development of the Solar System
  - Partnering between the civil, defense, and commercial space elements is essential
  - Space basing type operations will evolve, and require integration between aeronautics and aerospace
- Frontier strategies
  - Exploit the natural resources
  - Opportunities for everyone
  - Protect humans
  - Progressively increase self sustainability
  - Understand new chemical, biological, and physical processes

# SCENARIO PLANNING

- Scenario Planning is a way to approach the future by telling a set of stories about what is happening, might happen, and what is wanted to happen. These stories imagine the future based upon predetermined elements and uncertainties in order to influence present actions
  - Science fiction stories influence human dreams, ideas, thoughts, intention, and action for the future of space
  - The most powerful stories are driven by properties of vitality, depth, harmony, congruence, and are always compelling
  - These stories must also be relevant, emergent, and fact-based
- The entire story-telling process should be inclusive, constructive, open, credible, reflective, and must elicit choices
- Plausible scenarios dealing with the seeding of humanity into outer space are needed in order to help shape the frontier options

# EVOLUTIONARY PATTERNS

- Outer Space provides a framework to view influencing human destiny
- Understanding the lessons learned from multi-generational planning in the past is significant, such as building the great cathedrals and the Egyptian pyramids
- System scenarios to seed both virtual and actual human presence in outer space are needed
  - We must harmonize our use of inner and relational worlds to provide outward expansion from inward growth
  - We must plan the development of enhanced symbols, languages, and rituals, to be utilized by the frontier settlers

# EVOLUTIONARY THINKING

- Establishment of Vitality Councils
  - Membership should include anthropologists, psychologists, sociologists, artists, biologists, ecologists, folklorists, and others to advise development of human relationships in the outer space environments
- Sustainable ecological strategies for Earth/space
- A viable vision for including all nations of the world
- Adaptive space governance options and choices
- We must enrich our planet Earth by taking our experiential learnings, our discoveries, and interweave them with the knowledge and wisdom gained from the space movement

# **A DYNAMIC MODEL FOR THE EARTH/SPACE LIVING UNIVERSE**

- **Develop an Earth/Space Vision and Intention around Frontiers**
- **Construct Plausible Scenarios for Sending Humanity into Outer Space**
- **Encourage Creative, Innovative, and Inspirative Approaches**
- **Plan Concrete Actions for Outer Space Development and Evolution**
  - **Invest in Science and Technology**
  - **Construct an Evolutionary Human Space Infrastructure**
  - **Develop a Viable Commercial Revenue Activity**
- **Build a Political Will Strong Enough to Provide Effective Yearly Funding Needed for the Space Vision**

# **IMPLEMENTATION MAP FOR TODAY'S FRONTIER**

- **Develop a viable Earth orbit commercial infrastructure**
  - A major private sector role
  - Establish capability for relational leadership involving industry, academia, and government
- **Evolve missions within our “local Sun universe” utilizing science and technology, and expanding into new human frontiers**
  - A major public sector role
  - Invest in revolutionary S & T, and expand into evolutionary human infrastructure, outposts, and development
- **Establish a virtual presence beyond our “local Sun universe”**
  - A major academic/scientific role
  - Understand the creation and unfolding of the living universe
- **Improve communities and develop new settlements for Earth/space**
  - A major role involving elements of our cultural/political systems
  - Explore ways to develop entrepreneurial community leadership



# THE CELEBRATION OF DOING

It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, and comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows the great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievements, and who at worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who know neither victory nor defeat.

Theodore Roosevelt, 1910