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LEONARDO THINKS

Opinion: The Cultural Dimension of Space Exploration

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This century has seen the birth of the space age, a new age of exploration. In the night sky we see not only the stars and planets familiar to the ancients, but also objects that we ourselves have placed in space. There are, today, some half-dozen space-faring nations-while the community of all nations is joined through satellite-communications networks. Specific plans for permanent settlements both on the Earth's Moon and on Mars are being implemented. Space activities result in numerous, more direct benefits for those of us on Earth-ranging from the monitoring of our global environment, to the development of coordination systems for disaster relief, to remote sensing of natural resources. Some of the dreams and visions of artists and writers throughout history are being realised: Human culture now extends beyond the surface of our home planet.

The year of 1992 has been designated the International Space Year by the United Nations with the theme 'Mission to Planet Earth'. In a series of articles this year, *Leonardo* will seek to explore what space means for art and culture by addressing questions such as: How are artists involved in space activities and exploration? What are the cultural effects of this new age of discovery? How can artists and composers influence and participate in the development of human culture in space? How can we prepare for possible contact with extraterrestrial intelligence?

THE NEW LANDSCAPE

Space photography is now an art form in its own right. The photographs of the first human on the moon and of our planet seen as a whole are among the most important images of this century. The very ideas of 'spaceship earth' and 'global house' are not mere abstractions but actual descriptions of our own landscape seen through the eyes of artists, filmmakers and writers who create works that allow us to imagine the places we have yet to visit ourselves. Just as the drawings and descriptions of early European visitors to China and the Americas served to entice the next explorers, images from space (whether



created by humans or robotic instruments) serve to incorporate this new landscape into our culture and language.

A NEW VIEW OF OURSELVES

The reality of space travel forever changes our concepts of ourselves and our systems of thought. Artists, from the architects of Stonehenge to contemporary artists such as Nancy Holt, James Turrell and Janet Saad-Cooke, have created artworks that seek to make plain our connections to the sky. Projects have been designed to send and receive messages from other civilisations in space: perhaps in our life-time 'first contact' will be made. Artists such as Lowry Burgess launch artworks into space, making gigantic drawings that reach out into orbit. Astronauts and cosmonauts have described an 'overview effect' from their space travel, an experience that radically changed how they view themselves and the Earth.

ART IN SPACE, VIEWED FROM EARTH

Sculptors are creating vast artworks that are designed to be visible from the surface of the earth. This most public of all public arts challenges our vision of how we choose to design our global house. Do we want artworks in the night sky? Should we exclude artmaking from the celestial canvas and allow only military and commercial users to crowd the night sky? Who should decide?

ART ON EARTH, VIEWED FROM SPACE

For thousands of years artists have created drawings and earthworks that could only be viewed in their entirety from a distance above Earth. This artmaking continues, from Jose Wagners Garcia's drawings in the fields of Brazil to Pierre Comte's earthworks in the South of France. Jean-Marc Phillippe has sent vast messages into space using radio telescopes, and Ezra Orion points laser beams into the celestial void.

THE ARTS FOR SPACE TRAVELLERS AND SETTLERS

The first monuments in space have been left on the surface of the moon; others are now leaving the solar system on the Pioneer spacecraft. The Voyager spacecraft included a compact disc of earth music. Music has been played in space, and drawings and paintings have been created in space. These are the first artifacts of a new and eventually distinct space culture. Science fiction writers have imagined future space cultures. Today's artists can now create the first elements of a space culture that will help shape the lives of space inhabitants. We cannot doubt that space settlers will themselves develop new arts and music-cultural elements that respond to their own situations.

SPACE ARCHITECTURE, SPACE HABITATS

The first school for Space Architecture was founded in Houston, Texas. Architects and interior and product designers already wrestle with issues of design for space environments. This is becoming a profession in its own right.

SPACE TECHNOLOGY



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In the special issue "Connectivity: Art and Interactive Telecommunications" (*Leonardo* 24:2, 1991) we presented the work of artists using satellite networks. Inevitably, this artmaking will extend to the orbiting space station and other space settlements, becoming an essential component in the creation of new communities.

A COMMITMENT FOR TWO GENERATIONS

The exploration of space is entirely financed by taxpayers. Politicians decide the direction and rate of space exploration. What is our vision for space settlements? What kind of tracks do we wish to leave outside the planet Earth? Cultural professionals of all types need to be involved in shaping this vision, a vision we must transmit to our children. The establishment of a permanent space settlement on Mars requires a 40-year commitment, requiring our children and our children's children to pay the bill. Without a shared vision, without the extensive involvement of artists, composers, writers and poets, I do not believe that the task will be completed. The cultural dimension of space exploration is not a secondary issue-it is part of the very commitment that makes space exploration possible.



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