

ASE Theme Session
Learning from Space, Enriching World Culture
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Twenty One years and three months ago I was in Moscow meeting with Alexei Leonov, Vitali Sevastianov, and Alexei Yeliseyev to explore their interest in the possibility of forming a professional organization of astronauts and cosmonauts. Over three years later, and after a great deal of difficult and turbulent work by many people, the ASE held it's first Congress in Cernay, France. That was almost exactly 18 years ago.

I've often thought about why I felt so strongly that this organization should exist. We were at the height of the cold war. President Ronald Reagan had just declared the Soviet Union to be the "evil empire" and the U.S. was intent on deploying the MX mobile missile throughout Europe. Nothing could have been more challenging in the midst of that politically charged situation than for some crazy American astronaut to be proposing to create an organization of astronauts and cosmonauts... he was even meeting, in the Soviet Union with a bunch of Soviet Cosmonauts!

Nevertheless, and despite the alarm that this was causing in U.S. political circles, I felt that the experience of real human beings, real flesh and blood, having seen the Earth from the outside was a personal and historically important experience whose significance for the future of humanity was far greater than the terrible but temporary political conflict between the U.S. and the Soviet Union.

For the first time, human beings had actually seen with their own eyes, experienced deep in their innermost selves, the reality of our relationship with this planet. Yes, we all knew intellectually that we were living on a sphere, that we were all dependent on a delicate web of life support, and that we were all related to one another in this miraculous phenomenon called life. But no one had seen the Earth directly with human eyes; no one had experienced orbiting the planet hour after hour, day after day, month after month... until we were selected to have this great privilege.

This new reality was too important to allow mere international political conflict to stand in the way of our sharing our common experience, not only with one another, but with the citizens of the world. All of us know that it is not Leonov, Schweickart, and Ivanov who have flown in space. It is not Fabian, Makarov and Merbold or Mohri, Chang-Diaz and Solovyev who have flown in space. It is humanity that has now stepped off the planet. We are only representatives of this historic event when humankind, born and nurtured in the womb of planet Earth, first emerges into the larger cosmos.

Who knows where this great venture will lead? Who knows how far we humans will go... who, if anyone, we will meet along the way? What you and I know is that we are on the way; that we humans will never again be confined only to the surface of the planet that nurtured us.

We have learned a great deal through the exploration of space; and what we have learned, we have shared with people all around the world. Every school child in every country of the

world sees pictures of our Earth from space and learns about the mysteries of the origins of life that have been unraveled by astronomy and space exploration.

We know now, through the exploration of space, both with instruments and now in person, that life emerged on the Earth not as some isolated, miraculous process... but rather as an integral part of the same processes that led to the formation of the galaxies, stars, and planets. When, where and how this great process made the great leap from chemistry to biology we do not yet know, but we certainly know that it was built into the fundamental fabric of the universe from the outset. We know today of the formation of complex organic molecules in dense cold clouds of gas and dust in deep space. We know that these same complex organics were present in the formation of the early Solar System and that water and hydrocarbons rained down on the early Earth from collisions with asteroids and comets. Out of this turbulent and dynamic history life emerged... and eventually we human beings.

This cosmic education is a subject of fascination to every thinking human being throughout history.. and especially to children and young adults. Today we refer to the subject of the origins and evolution of life in the cosmos as astrobiology. But before it had a name it was the subject of fascination and speculation back through history as far as we are able to see... and undoubtedly the first humans, and even pre-humans, looked at the stars, the Sun and the Moon in wonder. There seems to be an innate understanding that somehow, in some way, we are related to the larger cosmos.

And we astronauts and cosmonauts are the embodiment of that curiosity today. We share a great responsibility to bring the excitement and wonder of our experience to the children and parents of Earth. After all, none of us paid for the trip!

We know so little, but we are all learning so much! Through this great educational process, through this unbelievable learning experience, we and our fellow human beings will surely emerge successfully one day into the cosmic community, whatever it may be or become. Life appears to be an essential part of the Universe; it seems to have been built into the unfolding of the Universe almost as an inevitability. And we humans are privileged to be the first representatives of life here on Earth to peek out of the womb into the larger, amazing world beyond.

We astronauts and cosmonauts have just now begun a historic journey into the unknown... and by sharing our thoughts and our experience and wonder with the children of the world we will bring the whole of humanity along with us on this amazing journey into the future.