

Flowers of the Cosmos

By John A. Bossard, PhD

Our Life in the Cosmos is a precious thing, probably more precious than we can ever truly appreciate. It contains our consciousness; it is the source of our inspiration. It is where our dreams come from and what inspires our hopes. All of the great things of our humanity find their expression in this cosmic life, our life.

And our life has many facets, many ways in which it may be conceived. Perhaps it begins with our own individual needs to maintain our physical life: air, water, food, shelter. Next comes needs for physical and mental stimulation, social interaction, challenges, puzzles, fun. These are followed by ever-deepening and more complex notions of self-worth and fulfillment, and even spirituality. Transcending these needs and notions, we discover that we have a marvelous and mysterious capacity for the consideration for others, rather than just ourselves. Whether this consideration for others came from basic survival mechanisms to preserve our offspring is not as important as the fact that this capacity for considering others has expanded and grown. Because we can consider others rather than just ourselves, we can consider other creatures and even our environment as entities that we can respect, value, interact with, and also protect and nurture. As our view pans back from our local environment, we begin to see lakes, streams, rivers; then mountain ranges, plains, deserts, oceans; and then we behold this Earth, our island home, shining like a blue-green jewel floating in the cosmic blackness. We are struck with the simultaneous notions of both the vast loneliness of our world, tiny in the vastness of the black Cosmos, and also the profound closeness that we are compelled to feel towards our fellow humans, creatures, all life, and even the earth itself.

At this point in our evolution, all of the life that we know about is contained on this single planet. We have not discovered any other life anywhere else, despite our diligent efforts to find it. Perhaps that will change. In fact, maybe we are ready to start thinking about how we can make that change. Maybe we are ready actually to become the life that exists elsewhere in the Cosmos. And maybe we can start to consider *why* we need to make that change, that profound extension when life from Earth is intentionally carried into the Cosmos. But in order to understand the why of it all better, we are going to have to expand our thinking and develop broader and more sweeping notions about such seemingly diverse topics as the physical space in which we live, our notions about what defines life, what constitutes consciousness and intelligence, and how will we recognize it. We are going to have to dig a little deeper into what our true motivations are and what are some of the larger and perhaps more important considerations when it comes to our lives in particular and the burning flame that represents all life in general. We are also going to have to discard some of the mental baggage and negative self-image constructs that have been holding us back from more fully realizing our potential, constructs that in some cases have been self-induced, but in other cases have been foisted upon us or sold to us because it was in best interest of other forces, rather than our best interest and that of humanity as well.

By some miracle of chance or otherwise, the terrestrial environment has remained undisturbed or at least insufficiently disturbed so that at least one species (*homo sapiens*, humans) could develop sufficient knowledge and technological mastery to leave the planet. But this situation could change at any moment. Any number of terrestrial or extraterrestrial calamities could snuff out all human progress in an instant and the Cosmos would have to wait hundreds of thousands or millions of years more before the extra-planetary spread of life could try again. The reality of the situation is that we, and all living things on Earth, are small and fragile. We cling tenuously to a small planet orbiting a medium sun, far out on one of the numerous arms of the Milky Way Galaxy. Far from being big and malicious, we are actually puny and ephemeral.

The image that I think symbolizes our situation in the Cosmos is that of a single flower, growing on a volcanic island, a small, fragile creature that has found a foothold in a dangerous, turbulent environment, where at any moment its existence could be snuffed out. That flower is life, it is us. We are, in effect, the flowers of the Cosmos. Here one day, bringing a bit of beauty to the Cosmos, before we wilt and pass away, casting our seeds to the cosmic winds. And as we make the transition from our life on the planet Earth and struggle to make our way out into the Cosmos, we too will be small, fragile creatures facing a dangerous Cosmos, dangerous in the sense of having many unknowns and where our life could be forfeit in an instant. In a time when we feel we are stumbling giants thrashing through the garden, crushing all that is beautiful with our selfishness and stupidity, it is worth remembering that, in terms of even just the neighborhood of our solar system, we are profoundly insignificant. All we have, everyone we know and love, everyone who has ever been, all our history, art, science, and books are pretty much contained on this one planet, our island home. There are a few exceptions. We have got some hardware on the Moon, Mars, Venus, Mercury, one of the Moons of Saturn, stuff in Orbit around Earth, some probes flying outward through the solar system, and a couple even beyond that. But by and large, the Earth is where it is at; we are the endangered species in a small pond.

The symbolism goes deeper, too. A flower is also a symbol of beauty and I think we humans are beautiful too. We do not hear that too much. We hear the opposite a lot. And so we start to believe that we are ugly, that we are a problem. That people are a plague or a blight upon the planet, even a cancer. But it is not true. We have many shortcomings and we create problems for ourselves, our fellow beings, and the Earth itself. But we also create beauty, and harmony, and we value life. And if you hold that all life is sacred and has value, then you must also value your own life, and by extension, the lives of your fellow humans.

This notion of self-value, of self-worth, is important because, as any psychologist will tell you, in order to value others, you also have to value yourself. So when you think of yourself, and humanity, and Earth's ecosystems in general, the image that you should hold on to is that of a small, fragile flower holding uncertainly onto a volcanic shore. My friends, you are the hope of life in the Cosmos, to grow, blossom, and propagate across that shore. Your life has infinite value because it is from you that more life will come. Flowers make seeds which make other flowers. A colony of flowers makes a patch of

soil where other plants and insects came grow and live. That patch of soil becomes a meadow, then a forest, and eventually an entire ecological system emerges. To find beauty in an ecological system is to find beauty in yourself. I bring you the message that you are worthy of salvation, my fellow brothers and sisters, all people, and all life on this our island home. And you are not just worthy of salvation; you are, in fact, an incredibly rare, precious attribute of our Cosmos.

We are at a unique moment in the history of terrestrial life. A few billion years of evolutionary action seems to have created life forms that have learned how to leave the surface of a mid-sized planet and travel arbitrarily far away. And as we leave our planet, I believe that we need to start thinking about our physical expansion off the planet as the new form of environmentalism, a transcendent concept of environmentalism that is far more inclusive, more outward thinking, and growth-oriented, not limit-constrained.

Until we get a better name, I group these notions that connect off-planet expansion and environmentalism under a different philosophical premise, a premise I call *ex*vironmentalism. *Ex*vironmentalism could be defined as a broad philosophy that seeks to develop a perspective which includes, yet transcends terrestrial concerns. Instead of looking inwards only on the Earth, *ex*vironmentalism turns to look outwards, encompassing not just the Earth, but as much of the Cosmos as can be comprehended. Although in a sense, *ex*vironmentalism can be thought of as extending, expanding, and broadening the meaning of environmentalism, *ex*vironmentalism has concerns that cannot be addressed or considered within environmentalism and therefore cannot be extrapolated from environmentalism itself. As such, we need a bigger concept; we need a philosophical basis that can embrace this increased understanding of our life in the Cosmos. The first time humans saw pictures of our blue planet floating in the blackness of space, we had an intuitive understanding that not only was our Earth our island home, but that we were more than just Earthlings, and that the space we lived in was more, infinitely more, than just the surface of our planet. I do not know about you, but the word “environment” just was not big enough to convey the vastness of our life in the Cosmos. And so, whereas environmentalism is focused on conservation and improvement of the environment of the Earth, *ex*vironmentalism seeks to turn the focus outwards, so that the ideas of conservation, and improvements of terrestrial environments are part of much broader and more inclusive notions regarding life not just on Earth, but also of life in our solar system and out into the Cosmos.

The word *ex*vironmentalism has its etymological roots in Latin, just as does the word environmentalism does. In Latin, the word *environ* comes from the words “en”, meaning in, “viron”, meaning circle, and “vertere”, meaning to turn. Thus, *environ* means literally “to turn in a circle inwards”. Your *environs* are therefore what you encircle. Thus, environmentalism is the concern for what one encircles, for one’s surroundings.

By contrast, *ex*vironmentalism would substitute “ex”, meaning out, for “en”. Thus, *ex*vironmentalism would mean to turn in a circle *outwards*. Thus, the concern and focus moves from an inward-gazing to an outward-gazing perspective.

These ideas are more than just words, because we can use these definitions to reframe our considerations, to open up the notions of life-expansion and life preservation, and to use the best of the ideas of environmentalism as we experience this epic transition of mankind off the planet and out into the Cosmos. We can positively combine these ideas, these philosophies, to make something better than the sum of the parts. This then, is the essence of environmentalism: the synergy of the space movement, the environmental movement, and perhaps many other ideas, productively to encourage, identify, and promote the expansion of life outwards from the planet Earth and into the Cosmos.

There is another, more subversive notion that I want you to take with you, that you are valuable, your life has worth, you are a priceless creation, no less so than any other beautiful creature. Life on Earth is counting on you to help it transcend the limitations of a terrestrial planet; to leap over the constraints of gravity and carry life onwards and outwards to moons, other planets, asteroids, and to live in the very fabric of space itself. A far too common misperception is that people are the problem. But I want you to know and to come to understand that you are, in fact, the solution. So this is another important distinction between environmentalism and exenvironmentalism. I believe that environmentalism should see human beings as part of the solution, as opposed to being part of the problem. Humans can and must play an important role in enabling the growth of living creatures, plant, animal, and other, in the otherwise sterile environments of the Cosmos. As such, human life has intrinsic value and worth, like all living and sentient creatures, and therefore is also worthy of respect and should be valued. And someday, if in our far travels and explorations, we should come upon other life forms and intelligences, may we seek to understand, and then be understood.

There is one final aspect or dimension of life that bears particular importance on why your life has value and that aspect is our mortality. By that I mean not just your own personal mortality, but also that of the entire human race. We are here now, in our prime, feeling lively and dominant. But that will not always be the case. Someday, the human race will be no more and we will pass into oblivion. But instead of mourning our inevitable demise, we need to celebrate the life we have now. The very notion of our finiteness adds to the poignancy of our humanity and I think this is a dimension, perhaps infrequently considered, that underscores the intrinsic value of our lives.

And so my friend, if you find nothing else worth reading about in this essay, then it is my wish for you that you begin a journey of understanding and that at some time along that journey, you come to the realization that you are the bearer of a great intention, the intention to carry life into the Cosmos. You bear up the flame of life and all future generations of creatures, plants, animals, machines, art, and song, will owe their existence to your intention. To see further and understand more, we are called, maybe compelled, to turn our gaze outward and look up and out. If environmentalism is to find any resonance with you and with the rest of humanity, then maybe it comes from the fact that each of us already possesses that intuitive knowledge, that primal understanding, and we are merely turning our gaze back to where we came from and where we might go.

We are small, we are fragile. We are the seeds of transcendent terrestrial life. We are the Flowers of the Cosmos.

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About the Author: John Bossard has over 25 years of experience in aerospace and advanced-technology industries and has served in a variety of technical, management, and executive leadership positions prior to founding his own company, BSRC, LLC, in 2007. Dr. Bossard's areas of interest include aerospace propulsion and high energy-release rate systems and he has been an active proponent for the off-planet expansion of mankind, promoting the advancement of both technological and philosophical approaches to enable this process. He received his PhD in Mechanical Engineering from Arizona State University in 1996, an MS in Aeronautical Engineering from Rensselaer Polytechnic Institute in 1986, and an Honors BS in Mechanical Engineering from the University of Utah in 1984. He is an Associate Fellow of the AIAA.



Editor's Notes: We are proud to have Dr. Bossard publishing in our Spring 2013 Journal of Space Philosophy. Describing humanity as "*The Flowers of the Cosmos*" is consistent with our Kepler Space Institute philosophy, proposed in the Fall 2012 issue, Article #8, which envisions Space settlements as being founded on the reverence of life within ethical civilizations. [Bob Krone, PhD](#).