

Text of the Speech by L. A. Fisk, President of COSPAR
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As I assume most of you know, I am President of COSPAR, the Committee on Space Research, the oldest and largest international scientific society devoted to international cooperation in space research.

And as I assume you also know, there is a close connection between COSPAR and the Space Studies Board, which serves as the U.S. National Representative for COSPAR. COSPAR and the SSB were both founded in that remarkable year of 1958, when so many of the essential institutions that have helped lead the world into space were established. NASA was established in 1958, as was the Space Science Board, the predecessor of the Space Studies Board. And COSPAR was founded in 1958, primarily for the purpose of establishing a dialogue between western and Soviet scientists in the depths of the cold war.

I am the first American president of COSPAR. Because COSPAR was founded to be a neutral venue where Soviet and U.S. scientists could interact, the initial construct was an American and a Soviet vice president, and a president who was European. When the cold war ended, that restriction was lifted, but it was not until 2014 at the COSPAR assembly in Moscow, that I was elected President of COSPAR. I am coming now to the end of my second four-year term, and only two terms are allowed. So, my successor will be elected at the upcoming COSPAR assembly in Athens this July. And since I know the candidates who are running, the next president of COSPAR will not be an American.

As you can imagine, during my tenure as president of COSPAR the relationships between COSPAR and the SSB, and for that matter the relations between COSPAR and the United States grew stronger. So, in this, my valedictory address to the SSB as President of COSPAR, I would like to reflect on what COSPAR and the SSB have been able to accomplish together. And what I hope will continued and grow after my tenure as president. And of course, in this reflection we will also reflect on the current situation for international cooperation in space research.

Let me begin by telling you about COSPAR and our mission. First, who we are. Since our beginning in 1958, when there were only a few space scientists and only a few nations that that could be said to have any capabilities in space, we have grown to where the national scientific organizations, like the U.S. National Academies of Sciences, of 45 nations are Members of COSPAR. There are 13 other international scientific societies that are also members of COSPAR. And some 10 to 12 thousand space scientists from around the world participate in our activities. We hold major scientific assemblies, like the upcoming scientific assembly in Athens this coming July, for which we have already received 3500 abstracts for presentations. We publish journals on space research, and separately on life science in space. We have panels that in some cases, like planetary protection, which we will discuss in a moment, and space weather, we perform essential tasks for the United Nations Committee on the Peaceful Use of Outer Space. We have tasks groups that pursues new opportunities that COSPAR is aware of, like constellations of small satellites which can in particular be contributed to by nations with developing space programs. And COSPAR has a President now, me, who uses the platform that being President of COSPAR provides, to make statements, and in particular, to give speeches and issue statements that

advocate the importance of international cooperation in space research for addressing the important global challenges, like global climate change, or the militarization of space.

COSPAR has a set of principles under which it operates,

The Principles that COSPAR Adheres in Pursuit of its Mission

- ▶ COSPAR promotes scientific research in space at an international level, with emphasis on the exchange of results, information, and opinions, and provides a forum, open to all scientists.
- ▶ COSPAR endeavors to ensure that a vibrant international space research effort can be conducted without impediment from geopolitical tensions or differences.
- ▶ COSPAR requires that presentations at its meetings and publications in its journals are the result of scientific research that was conducted with the highest ethical standards.
- ▶ COSPAR discloses any financial support that might be perceived as influencing its activities or positions it might advocate.
- ▶ COSPAR promotes diversity and gender equality in all of its activities and will not tolerate any form of discrimination or harassment.
- ▶ COSPAR encourages meaningful roles in all activities for younger scientists, who are the future of international space research.

The first principle is simply our mission statement, taken directly from the original charter of COSPAR that was issued by the International Council of Scientific Unions in 1958. This is our basic mission. Promote scientific research at an international level, provide a forum to exchange results, and even opinions, and be open to all scientists.

The second principle is one we have added after the ending, or the perceived ending of the cold war in the late 1980s. This principle is intended to make COSPAR more proactive in encouraging that geopolitical tensions or differences do not interfere with international cooperation in space research. Something that is now impossible with Russia following its invasion of Ukraine.

The remaining principles are about integrity, on the part of scientists who participate in COSPAR and our own, about our financial support. And finally, about our comment to diversity and gender equity and to encouraging younger scientists.

The invasion of Ukraine by Russia and the unimaginable humanitarian crisis that has resulted, has in many ways destroyed the world order in Europe and impacted the international environment in which COSPAR pursues its mission. And so, I issued the following statement, which is intended both express COSPAR outrage on the invasion and to govern the behavior of COSPAR:

Statement by the President of COSPAR

- ▶ COSPAR expresses its deep dismay and concern regarding the invasion of Ukraine by Russia and the resulting grave humanitarian crisis.
- ▶ COSPAR reaffirms its long-standing position that science is a platform for dialogue even in times of profound geopolitical conflict, and therefore a resource on which to capitalize to restore and preserve peace.

- ▶ COSPAR states that our capacity to work collaboratively on global challenges such as climate change and space research is only equal to our capacity to maintain strong collaboration amidst geopolitical turmoil. The isolation and exclusion of important scientific communities is detrimental to all.
- ▶ COSPAR pledges to advance equal participation and collaboration between scientists from all countries in its activities and to adhere to its principle that all of its activities are conducted with the highest ethical standards.

The first clause states our dismay and concern about the invasion of Ukraine by Russia and the resulting grave humanitarian crisis. Almost all scientific societies have issued a statement about Ukraine. Some did not refer to the invasion by Russia. Initially the COSPAR statement did not either, but as the situation grew ever worse, our statement was strengthened to the current version which clearly labels Russia as having invaded and the cause of the grave humanitarian crisis.

The second clause is the most important because it reaffirms the most basic of COSPAR's principles: science is a platform for dialogue, which should be maintained even in times of profound geopolitical conflict and used as a resource to help restore and preserve peace.

The third clause is simply a statement of fact. Addressing global challenges requires strong collaboration amidst geopolitical turmoil.

The fourth clause governs the activities of COSPAR. Equal participation of scientists from all countries in our activities.

The implications of these statements are as follows: we are determined, because of its value for restoring and preserving peace, to maintain the dialogue with Russian space scientists, who will be welcome, should they be able to participate, in our upcoming Athens scientific assembly. We will not, however, as we would have in the past, encourage space projects that involve the Russian space agency, Roscosmos, or with other Russian institutions, nor will we comment on actions that are being taken as part of or in response to sanctions being imposed on Russia in an effort to stop its aggression in Ukraine.

I might add here that I am not particularly concerned about Roscosmos space projects, now or in the future. Space science projects and human space flight require an economy that can support them. The sanctions being imposed on Russia as a result of their invasion are being effective. And it is hard to imagine that now or for the foreseeable future, Russia will have an economy that could support space projects worthy of being involved in.

I would like to shift gears now and talk about planetary protection. I want to put some emphasis on planetary protection, because it is one of the most meaningful examples of collaboration between COSPAR and the SSB, which I hope we will preserve after I am president.

Just to be clear planetary protection is not about protecting the planets. It is about protecting scientific investigations that are conducted on the planets, from contamination by terrestrial material, particularly terrestrial biological material that would interfere with the search for life. It is about protecting one planet, the Earth, from material that is brought back by a spacecraft returning from a planetary body.

Now, there have been briefings to the SSB about planetary protection, but under the assumption that you may have assumed that planetary protection does not concern you, because planetary exploration is not your scientific discipline, let me discuss this from a policy perspective.

In other words. Why you should be concerned, regardless of your scientific discipline, with the success that COSPAR and the SSB are having with properly dealing with planetary protection?

The only treaty that we have that governs our activities in outer space is the UN Outer Space Treaty of 1967, which has been signed by more than 180 nations, including all the major space faring nations. The only science issue that is addressed in the outer space treaty is planetary protection. And unlike other issues covered by the Outer Space Treaty, or in fact in many other treaties, with regard to planetary protection, the Outer Space Treaty actually includes an implementation process. Too often treaties simply say do something good but are silent on actually how to achieve this good. There is an opportunity here for scientists to demonstrate how to fulfill a goal of a major treaty, which could be a model for goals other treaties.

To be specific, Article IX of the UN Outer Space Treat, the first two clauses of which state the goals for planetary protection. The first clause is the general theme of the Outer Space Treaty. All signatories, referred to as States Parties in treaties, are supposed to conduct their activities in outer space with due regard to the corresponding interests of other States Parties. The second clause states the basic planetary protection goal. Conduct exploration so as to avoid harmful contaminations and adverse changes to the environment of Earth from extraterrestrial material. And adopt appropriate measures for this purpose.

The First Two Clauses of Article IX of the UN OST

- ▶ “In the exploration and use of outer space, including the Moon and other celestial bodies, States Parties to the Treaty shall be guided by the principle of co-operation and mutual assistance and shall conduct all their activities in outer space, including the Moon and other celestial bodies, with due regard to the corresponding interests of all other States Parties to the Treaty.”
- ▶ “States Parties to the Treaty shall pursue studies of outer space, including the Moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose.”

The third clause of Article XI is what creates the implementation process. The first sentence states that if a State Party or its nationals have an activity or experiment that would cause potential harmful interference there has to be appropriate international consultations before proceeding. Conversely, in the second sentence, if you believe you will be interfered with you can request consultation.

The Third Clause of the Article IX of the UN OST

- “If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space, including the Moon and other celestial bodies, would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space, including the Moon and other celestial bodies, it shall undertake appropriate international consultations before proceeding with

any such activity or experiment. A State Party to the Treaty which has reason to believe that an activity or experiment planned by another State Party in outer space, including the Moon and other celestial bodies, would cause potentially harmful interference with activities in the peaceful exploration and use of outer space, including the Moon and other celestial bodies, may request consultation concerning the activity or experiment.”

Obviously, implicit in this clause that encourages accusations and requires consultations is the requirement that there is a common agreed upon standard for planetary protection. How do you determine whether you are interfering with another states party’s experiment, or claim that you are being interfered with unless you define interference? And if all States Parties have the same standard of interference and agree that to be compliant with Article IX that they will not violate this standard of interference, then this clause never needs to be invoked.

This is where COSPAR comes in. Since its founding in 1958, indeed one of the other reasons that COSPAR was founded, COSPAR has been evaluating scientific investigations for their potential to compromise the search for life on planetary bodies by contamination from terrestrial material. And when the Outer Space Treaty was ratified, COSPAR simply continued this important function. And today, with the specific endorsement of the UN Committee on the Peaceful Use of Outer Space, COPUOS, COSPAR maintains the planetary protection policy as a reference standard for guiding compliance with Article IX of the Outer Space Treaty. Implicit in our charge is the requirement to form the planetary protection policy through consultation with all affected State Parties, so that all play by the same rules, and no State Party feels the need to demand the consultations available under consultation clause of Article IX.

COSPAR performs its responsibilities for developing the planetary protection policy through its Panel on Planetary Protection, the PPP, which is ably led by Athena Constenis. Half of the members of the PPP are the senior representatives of space agencies that are conducting planetary exploration. The other half are scientists chosen from the relevant Scientific Commissions of COSPAR. One of the vice chairs, currently Niklas Hedman, is appointed by the UN Office of Outer Space Affairs, to ensure that the PPP fulfills its responsibilities to the UN. The other vice chair is an expert on planetary protection.

The PPP has functioned well, even as more nations now have the capability to conduct planetary exploration missions. However, there is now a new challenge, commercial companies, which are planning in some cases very ambitious planetary missions. There are two complications here. Commercial companies have no special rights under the Outer Space Treaty. Article VI of the Outer Space Treaty explicitly says that non-governmental entities, i.e., companies, are the responsibility of the State Party, who is to ensure that they comply with the Outer Space Treaty. And second, the U.S. has no mechanism in place to ensure compliance.

From the COSPAR side, we know what we should do. We take seriously our mandate from the UN to develop a planetary protection policy that takes into account and balances the interests and capabilities, of both governments and non-governmental entities, and thus which reasonably can be expected to be complied with. We do this as we always have. We get advice from the Space Studies Board, the one organization in the world with the capability to give independent scientific advice. The flow of advice in this case is from NASA, to the newly formed SSB Committee on Planetary Protection, the COPP, to the COSPAR PPP, who weighs this and other advice to form new planetary protection policies. We have revised our policy on the moon, and

the policy on Mars is underway. Mars is more complicated. It is of interest to science, human space exploration and commercial use, and we lack some basic knowledge, for example, on cross contamination processes.

The relationship between COSPAR and the SSB, dealing with the complexities and challenges of planetary protection, has been one of the most important relationships of my Presidency. I sincerely hope that that this close relationship will continue unabated under the next President of COSPAR

COSPAR does many other things that can be useful to the SSB. We have international roadmaps that if properly timed can be useful inputs into decadal. We advocate common positions such as on dealing with global climate change. We have a task group on establishing an international geospace systems program, that might be of interest to your upcoming decadal on heliophysics. COSPAR is a resource that I encourage you to use.

In closing, permit me to remind you that three years ago in this meeting I spoke on space as a global commons, a resource not owned by any one nation but crucial to the future of all humankind. And every nation, which is able and dedicated to the exploration of space, the conduct of science research in and from space, and the use of space, all for peaceful purposes, should be encouraged and enabled to do so. We should be able to claim space as a global commons, where cooperation has been encouraged, competition is discouraged, and conflicts are forbidden. And if we do so we will avoid the worse consequences of the inevitable militarization of space.

That was three years ago. Very little progress has been made on the concept of space as a global commons. And now with the drums of war, even global war, beginning to beat again, progress is likely to be impossible. I still think space as a global commons is a goal to which we should aspire. Peace on Earth and space as a global commons, available to all, on behalf of all.

Thank you very much.