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Non-Governmental Organizations importance and future role in Space Exploration

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ABSTRACT

Space Exploration is a complex and long-lasting undertaking for all humankind. The definition and implementation of Space Exploration missions has been international so far and it is expected to become really global in the future when complex human exploration beyond Earth Orbits will take place. Space Exploration needs to be sustainable and as such should be supported by a constituency as wide as possible, at global level, beyond Space Agencies. Exploration programs will offer new market opportunities to the involvement of many industries especially of small and medium size by consolidating technology frontiers opened by the governments or opening new ones. This however requires stimulation of the industrial landscape to produce new start-ups.

So far the implementation of complex exploration missions is carried out generally by Space Agencies, but Non-Governmental Organizations (NGOs) like the International Academy of Astronautics (IAA), AIAA, National Space Society, Mars Society, etc. have played and can play an even more important role in the future of Space Exploration, especially if coordinated. This coordination can increase the impact of appealing directly to the ultimate constituency financing, via public or private funds, Exploration programs, that is the public at large. The public can then influence the political representatives and the government priorities as direct consequence.

NGOs not directly related to Space Exploration (ie. Environmental groups) have already acquired large impact on the public policy, and Space Exploration NGOs should also explore possibilities to be associated to them, increasing their effectiveness on the public.

The paper will first carry out a mapping of the existing NGOs operating in the field of Space Exploration and their associated activities as well as of some, non-space NGOs, which could have interest in Space Exploration. The paper will then assess the role played so far by these organizations and will make proposals on how to coordinate their operations, in full synergy with Space Agencies and Private Companies, to increase the public awareness, at global level, of the importance of Space Exploration. The ultimate goal shall be to obtain higher priorities in the governments for space exploration programs.

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1. Introduction

Space Exploration is a complex and continuous undertaking for Mankind and it started with the launch of Sputnik in 1957. Space Exploration is one of the best investments for the future of Mankind, however it is not yet fully understood, by the public at large as well by the political circles, in terms of its implications and future prospects.

Space Exploration has improved enormously the understanding of the Universe by achieving incredible results that have changed our lives like the landing of men on the Moon by 1969.

The main justifications for this undertaking have been

1. Scientific discovery and understanding.
2. National security and military implications.
3. Economic competitiveness and commercial applications.
4. Human destiny/survival of the species.
5. National prestige/geopolitics.

Till now the importance of each justification has dynamically changed, depending on the country and the political and social landscape of the time. In general the public opinion was not very supportive of Space Exploration as such [1].

Even at the time of the Apollo program and the USA/USSR Race for the Moon, the US public opinion was not fully supporting the huge government spending. The exception was in 1965 where more than half of the public favor continuing human lunar exploration [12].

This situation has not changed since the public opinion support to Exploration is still low in the USA, as expressed in a recent NRC Report [8]. In Europe or Japan, there has never been the effect of the Moon race, therefore the public opinion support to Human Exploration activity has always been weak.

Mainly Human Space Exploration, has been politically driven and conducted by Space Agencies at National and International level.

The future of Human Space Exploration beyond Earth orbit will require the undertaking being global and sustainable.

Future exploration programs, especially in the human spaceflight component, are not sustainable with the present budgets (see NRC Report [8]). The budgets should increase and this possible boost can come from an increased public support to the exploration programs.

Public support will increase with its better awareness of Space Exploration achievements and prospective, and this can provide a boost either in increasing the private investments (i.e. new space) or changing government priorities in favor of space exploration. The latter can be achieved since the public is the constituency of all political democratic systems.

The public can then influence the political representatives and the government priorities as direct consequences.

Exploration programs will provide new market opportunities to the involvement of many industries especially of small and medium size by consolidating technology frontiers opened by the governments and opening new ones.

To try to increase the support for Space Exploration, non-space Non-Governmental Organizations (NGOs) have been considered as a source of inspiration.

It is known that Non-Governmental Organizations (NGOs) have played major roles in civil society by sensibilizing and engaging public in many domains like the medical, social, environmental, religious and to much less extent science.

Non-space NGOs, especially in the environmental area, have managed to bring to the attention of the highest level this topic, as demonstrated by the many global Conference and Agreements. Governments are pushed regularly to act by these NGOs. It cannot be said the same for space matters.

In a similar manner, it is expected that Space Exploration NGOs, like the International Academy of Astronautics (IAA), IAF, AIAA, National Space Society, Mars Society, etc. can play an even more important role in the future of Space Exploration, especially if coordinated at a global level. The coordination of the Space NGOs between themselves with the involvement of key non-space NGOs should achieve a wider exposure by reaching out the public on a global scale. This will improve the understanding and the importance of Space Exploration for future generation.

2. Role and achievements of NGOs in public policy

A *Non-Governmental Organization* [2] (NGO) is an organization that is neither a part of a government nor a conventional for-profit business. Usually set up by ordinary citizens, NGOs may be funded by governments, foundations, businesses, or private persons. Some avoid formal funding altogether and are run primarily by volunteers. NGOs are highly diverse groups of organizations engaged in a wide range of activities, and take different forms in different parts of the world. Some may have charitable status, while others may be registered for tax exemption based on recognition of social purposes. Others may be fronts for political, religious or other interest groups.

The concept of NGO was first used in the UN Charter approved in 1945. The rise of NGOs was quite naturally prompted by progressive globalization and the increasingly trans-boundary nature of the most urgent social and economic problems faced by mankind. In addressing these issues, NGOs from early on tended to emphasize non-strictly economic issues thus to counterbalance the tendencies of Intergovernmental Organizations (IGOs) and International Treaties.

The number of International NGOs has grown proportionally with the increase of States and International Government Organizations (IGOs), see Fig. 1.

NGOs have achieved large impact on the public policy and society in many fields. Many of them operate at local level with an international coordination group to harmonize the activities.

Non space NGOs, especially in the environmental area, have managed to bring to the highest political level this topic, as demonstrated by the many global Conference and Agreements. Governments are pushed regularly to act by these NGOs. It cannot be said the same for the results achieved by Space NGOs.

Some examples, extracted from the open literature [3]

- The *World Wide Fund for Nature* (WWF) is working on issues regarding the conservation, research and restoration

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