CHAPTER 5

CREATING RULES-BASED BEHAVIOUR TO HELP SPACE-FARING NATIONS AVOID CONFLICT IN SPACE

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For almost 50 years, the cooperative and peaceful uses of space have yielded immense benefits to humankind. The degree to which the world relies on space for an increasing number of everyday activities has shown a truly amazing trend line. Space has been integrated seamlessly into our everyday lives. Satellites have become fundamental to modern society, especially so in the developed world but also increasingly in developing nations.

Television programming, the Internet, automatic bank machines, banking transfers, telephone service, credit card validation, weather prediction, terrestrial and oceanic mapping, atmospheric and natural disaster monitoring, urban planning, navigation, search and rescue, and arms control verification all rely on the use of satellites.

There is also a greater dependence of military and government on the commercial space industry. The revolution in military affairs is reliant on the use of space to enhance communications, command, control, surveillance, reconnaissance and intelligence, and these services are increasingly provided by commercial entities.

At least 19 nations have launch capabilities. Some 40 nations operate satellites for various purposes. There are some 600 to 800 operational satellites in orbit. Nations must be confident that their critical space assets will be secure from threats, both artificial and natural. This makes it a question of security. I believe we are now at the intersection of security in space and sustainable access to space. In fact, Canada uses a definition that connects the two. Our working definition of space security is "secure and

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sustainable access to and use of space; and freedom from space-based threats".

Therefore, it is timely that we speak of the architecture of sustainable access to space and how it should be designed. My remarks here focus on rules-based behaviour as an essential part of that architecture. I start with a couple of observations on what I believe are key elements of any approach to rules-based behaviour to help space-faring nations avoid conflict in space.

BROADENING OUR CONCEPT OF SPACE AND SPACE SECURITY

Space security should be considered in the context of the overall space environment. These include political, economic, environmental, technological and military influences, all of which support the creation of an empirically based case for a broader view of space security.

It is for this reason that Foreign Affairs Canada has contributed funding for the past three years to a research programme on all elements of the space security continuum. The research quantifies the current economic benefits of the peaceful uses of space and underscores the long-term global benefits derived from maintaining secure access to space for all.

Spacesecurity.org, a consortium of non-governmental organizations (NGOs), is currently undertaking research with input from space experts from around the world on space security developments since 2005. The resulting *Space Security Index 2005*, the third in the annual series, is scheduled for issue in June 2006. I look forward to Sarah Estabrooks' presentation on the preliminary results of the 2005 survey at this conference.

FOCUSING ON ENSURING THE PROTECTION OF OUR SPACE ASSETS

Ensuring the safety of satellites is vital to our security and prosperity, but we fear that the presence of weapons in space could actually make it harder to achieve security for these assets. This also means pursuing steps

to build confidence and thus reduce the temptation to place weapons in space as a means to protect space assets.

It is sometimes said that the international community should not bother with the prevention of an arms race in outer space (PAROS), as there are currently no weapons in space and, therefore, there is no arms race. However, one can look at PAROS in a different light: as an exercise in preventative diplomacy to take advantage of the present non-weaponized status of outer space to ensure that this situation will be preserved.

All measures that build confidence that nations will not station weapons in space are important. We, therefore, need to consider alternative means to defend our space-based assets. Alternatives in this regard include weapons-effects hardening, evasive manoeuvring, redundancy and electronic protection measures such as anti-jamming technologies.

The use of some types of anti-satellite weapons could create significant debris, and thus significant damage to operational space assets. The resulting large increase in debris could render the space environment unusable. Moreover, basing weapons in space could force industry to assume burdensome liability and protective hardware costs that would eat into the profits of satellite operators. By contrast, increasing international cooperation between space-faring nations bodes well for space security. We foresee the increasing numbers of actors with access to space creating even more broadly based support to sustain and manage that access.

ADVANCING RULES-BASED BEHAVIOUR

The rest of my remarks focus on building confidence through ways and means of managing access and use of space, of increasing transparency about space launches and of protecting our space assets from damage—that is, advancing the work on rules-based behaviour.

Work has begun in the Committee on the Peaceful Uses of Outer Space (COPUOS) to address this, for example, by tackling debris mitigation. The drafters (I had the opportunity to sit on this working group as a Canadian delegate) have naturally limited their work toward mitigating debris caused by the peaceful uses of space. In their present form, the new

proposed guidelines only obliquely address the issue of debris that could be caused by anti-satellite activities by including a paragraph against the intentional creation of long-lived debris. The guidelines also note that debris due to collisions of space objects will be without question the primary source of debris in the future. In fact, it may already be the primary source of debris creation.

Nevertheless, an important milestone was reached in March 2006 when the COPUOS Scientific and Technical Subcommittee accepted its working group's recommended space debris mitigation guidelines. The guidelines, which are based on the technical contents of the Inter-Agency Space Debris Coordination Committee (IADC) Guidelines, will be submitted to the United Nations General Assembly in 2007 if there are no objections from any countries. We expect that they will be passed, given the wide cross-section of countries that have contributed expert delegates to work on them.

But the importance of the space debris mitigation guidelines extends beyond their immediate applicability. The guidelines are the first set of recommended practices to flow from COPUOS in a long time, given the increasing importance of space and the difficulty in obtaining consensus on difficult issues. They demonstrate that COPUOS continues to be effective.

I believe that this success can be built upon by using the process employed for the debris mitigation guidelines as a template to address the outstanding need for other rules-based behaviour in space. For example, a multinational working group from the COPUOS Scientific and Technical Subcommittee is well into the process of developing guidelines on the use of nuclear power sources in space with their final recommendations expected in 2007.

Another example of an outstanding need that immediately comes to mind would be the creation of "rules of the road" based on technical space traffic management guidelines, which is discussed later. As we are all aware, success often breeds success, and one should not be hesitant to try out similar approaches. COPUOS negotiated all of the major space treaties now in existence, and there is no reason that they cannot re-assume this pre-eminent role in space. And if successful in instituting this rules-based behaviour in space, it might eventually influence the political will of the Conference on Disarmament (CD) to get back to the table on the PAROS.

We might, therefore, re-examine existing UN structures with a view toward encouraging closer cooperation between the CD and multilateral forums working on other dimensions of space such as the First Committee, the Fourth Committee, COPUOS and the International Telecommunications Union. There is a need to establish rules of the road that all can understand and follow. Order and expectations of acceptable behaviour must be instituted. We would all benefit from such standards. And we believe that the CD can also become particularly effective in acting as a conduit for many of these changes.

As one example, in 2005, Michael Krepon of the Henry L. Stimson Center released a model code of conduct to suggest one way to prevent incidents and dangerous military practices in outer space. Key provisions included avoiding collisions and dangerous manoeuvres; safer traffic management practices; prohibiting simulated attacks and anti-satellite tests; information exchanges, transparency and notification measures; and more stringent space debris mitigation measures.

Perhaps consideration should be given to an expanded international code of conduct, devised jointly by the CD and COPUOS, which would provide guidance for civil and commercial space activities as well as military activities. We could also consider whether a code of conduct would be best targeted toward the military uses of space, with the agreement to honour its provisions being struck between nations. I pose this question because commercial entities are not always strictly observant of voluntary guidelines, particularly if doing so will serve to decrease profits or negatively affect business expansion plans. While prescriptive rules would be difficult to negotiate in the UN setting, voluntary rules based on voluntary UN principles might work best, with implementation left up to national mechanisms.

As I mentioned previously, it might be pragmatic to suggest that rules of the road be negotiated for civil and commercial uses of space, which can then be made non-discretionary at the national level with passage of national mechanisms. These mechanisms, enacted by each country according to their needs, would proscribe and regulate the activities of their own industries' space-related ventures. This is but one suggestion.

The negotiation of guidelines that would provide examples of acceptable behaviour to all space actors would go a long way to create and

maintain space security. Both the CD and COPUOS have the potential, but need the political will of member states to accomplish the necessary preconditions for the continued security of space. In the case of the CD, we need a political breakthrough. We, therefore, need to develop at the outset a long-range strategic plan in COPUOS. A wide range of actions is possible, but each poses certain questions. For example, would the successful negotiation of rules of the road by COPUOS then engender the creation of a permanent UN space coordinating body to implement them? Are there better ways to monitor compliance with agreed procedures? Where conflicts develop, should the details be referred to COPUOS, the CD or to some other body for remedial action? Should COPUOS or the CD be assigned responsibility for the overall coordination/regulation of the world's civil and commercial space activities? Is there a potential role for the International Civil Aviation Organization in this mix? These are just some of the questions that arise, but I will leave that for future discussion.

In conclusion, Canada believes that the evolution in space activities and benefits provides a strong rationale for the global community to work together to foster a stable politico-diplomatic environment. No one wants to lose the benefits that space provides. There is scope for much activity in the area of rules-based behaviour as part of sustainable access to space. Some of this may be more pertinent to discussion in the CD; some is really the preserve of COPUOS, building wherever possible on existing agreements. In the latter regard, Canada is preparing a paper for the UN Office of Outer Space Affairs as a follow-up to the 2005 informal organizational initiative of the COPUOS chair. We hope to confirm that the range of activities that can be carried out under the existing mandate is sufficient to reflect today's space requirements. If so, we would propose that COPUOS begin the process of establishing a forward-looking programme of activities to create new standards for behaviour in space.

To return to the two elements I mentioned earlier, we believe that development of rules-based behaviour to avoid conflict between space-faring nations would benefit if we adopt a broadened approach to space security and a perspective focusing on how we protect space assets.