CHAPTER 7

A Legal Undertaking to Prevent an Arms Race in Outer Space

> *We believe that at present the priority issue is that of securing a common understanding by means of a legal undertaking or instrument on the need to prevent the weaponization of and an arms race in outer space.*
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> —Hu Xiaodi, Statement at the Informal Plenary of the Conference on Disarmament, May 27, 2004[1]

In March 1999, the Chinese delegation to the Conference on Disarmament announced that it would not support a work program for the CD that did not include an *ad hoc* committee with a mandate to negotiate a "legal instrument on the prevention of an arms race in outer space." This sudden obstruction was a change for the Chinese delegation, which prior to 1999 had played a largely constructive role in efforts to develop a CD program of work.

Explaining China's recent arms control diplomacy is, admittedly, a speculative enterprise. Participants are, for obvious reasons, reluctant to share information about internal discussions as they relate to ongoing negotiations. Understanding recent developments requires a more inductive approach and produces less definitive conclusions.

In the preceding chapters, I have suggested that China's strategic force deployments and arms control policies were complementary efforts to construct and then preserve what Marshal Nie called "the minimum means of reprisal." The delegation's March 1999 statement seems very much like the culmination of a growing concern about the potential of

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[1] Hu Xiaodi, *Statement at the Informal Plenary of the Conference on Disarmament on Item3 "Preventing an Arms Race in Outer Space"* (Geneva: May 27, 2004). Available at: http://www.china-un.ch/eng/65284.html.

U.S. missile defense systems to someday threaten those means. Chinese leaders have yet to alter their strategic force deployments in response to U.S. missile defenses and other modernization programs. Chinese arms control policies, however, have changed—China's new position in Geneva closely followed a January 1999 announcement by U.S. Secretary of Defense William Cohen regarding significant changes to U.S. missile defense programs, which was itself a response to growing political pressure in the United States.

Until March 1999, China's post-CTBT arms control policies focused on bilateral proposals regarding the mutual no-first use of nuclear weapons and securing China's adherence to the ABM Treaty.[2] China's shift in strategy toward the non-weaponization of outer space was lost on the United States—perhaps in the strain on Sino–American relations during the run-up to Operation Allied Force, the NATO military action to stop ethnic cleansing in Kosovo.[3] Although China has since softened its demand for an explicit mandate to negotiate a legal instrument concerning the prevention of an arms race in outer space, China continues to

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[2] In January 1994, China formally submitted a draft "Treaty on the Mutual No-First Use of Nuclear Weapons" to the United States, Russia, France and Britain. The presidents of China and the Russian Federation undertook, in September 1994, not to be the first to use nuclear weapons against each other or to target each other with their nuclear weapons. China pressed again, in 1998, for an agreement, which led to the June 1998 "de-targeting" agreement. See "China, U.S. Should Sign No-first-use Pact" (Washington, DC: Embassy of the People's Republic of China, June 18, 1998), http://www.china-embassy.org/eng/7063.html. On Chinese views of no-first use, see Li Bin, "Visible Evidences of No-First-Use Nuclear Strategies," *INESAP Information Bulletin*, no. 17 (August 1999), pp. 44–45; Wu Jun, "On No-First-Use Treaty" (Shanghai: The Sixth ISODARCO Beijing Seminar on Arms Control, October 1998); Pan, "On China's No First Use of Nuclear Weapons," Pugwash Meeting no. 279: No First Use of Nuclear Weapons, London, UK (November 15–17, 2002), np; and a pair of essays, published electronically by the Stimson Center but regrettably no longer available online: *No-First-Use and China's Security* by Liu Huaqiu and *China's Negative Security Assurances* by Shen Dingli (no date; about 1998).

[3] The Council on Foreign Relations, for example, published a study entitled *China: Nuclear Weapons and Arms Control* that did not refer to Chinese proposals in Geneva or China's position regarding the non-weaponization of outer space. Robert A. Manning, Ronald Montaperto, and Brad Roberts, *China, Nuclear Weapons, and Arms Control: A Preliminary Assessment* (New York: Council on Foreign Relations, 2000).

maintain the substantive position that a new, legally binding instrument is necessary to prevent an arms race in outer space.

This chapter draws largely on official Chinese government working papers submitted to the Conference on Disarmament, as well as other official statements and a series of interviews conducted in Beijing and Geneva, to describe and analyze China's position on the weaponization of outer space. The basic outline of the Chinese position in Geneva can be found in five working papers submitted to the Conference on Disarmament:

- CD/579: *China's Basic Position on the Prevention of an Arms Race in Outer Space* (March 15, 1985)
- CD/1606: *China's Position on and Suggestions for Ways to Address the Issue of Prevention of an Arms Race in Outer Space at the Conference on Disarmament* (February 9, 2000)
- CD/1645: *Possible Elements of the Future International Legal Instrument on the Prevention of the Weaponization of Outer Space* (June 7, 2001)
- CD/1679: *Possible Elements for a Future International Legal Agreement on the Prevention of the Deployment of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects* (June 23, 2002)[4]
- *Unofficial Annex: Compilation of Comments and Suggestions to the CD Working Paper CD/1679* (July 31, 2003)[5]
- Three "non-papers" circulated at the Conference on Disarmament: *Existing International Legal Instruments and Prevention of the Weaponization of Outer Space* (August 26, 2004), *Verification Aspects of PAROS* (August 28, 2004), and *Definition Issues Regarding Legal Instruments on the Prevention of Weaponization of Outer Space* (June 9, 2005)

These documents are reproduced in the appendix. On the whole, they present a reasonably coherent view of the threats to China's deterrent from space-based systems. These working papers suggest that the proce-

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[4] Working Paper Presented by the Delegations of China, The Russian Federation, Vietnam, Indonesia, Belarus, Zimbabwe, and Syria. Reproduced in the appendix.

[5] This annex was compiled by the delegations of China and the Russian Federation.

dural obstruction in Geneva regarding the weaponization of outer space reflected Beijing's continuing concern about the viability of its deterrent and was designed to induce a dialogue on strategic issues that is otherwise absent from U.S.–China relations.[6]

CHINA'S POSITION ON THE WEAPONIZATION OF SPACE

China's working papers on outer space have been issued episodically. The first working paper (CD/579) was submitted in 1985, following President Ronald Reagan's "Star Wars" speech. Fifteen years later, in 2000 and 2001, China issued a pair of working papers (CD/1606 and CD/1645), followed by a joint working paper (CD/1679) issued with the Russian Federation and five other delegations in 2002. The Chinese working papers span almost two decades, but reflect a consistent concern that space-based systems might be used to achieve nuclear superiority that would subject China's leaders to what they view as the "nuclear blackmail" that Beijing experienced during the 1950s.

1985: CD/579

President Reagan's announcement of the Strategic Defense Initiative (SDI) in 1983 appears to have unnerved many Chinese analysts. Interviews at the time with Chinese officials and academics revealed that the Chinese elite saw SDI as an "attempt to achieve clear nuclear superiority over the Soviet Union and understand such superiority to mean a first strike capability"—a view consistent with long-standing Chinese concerns about so-called nuclear blackmail.[7] Chinese concerns about SDI were probably related both to the objective threat SDI posed to China's deter-

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[6] Following a May 2001 consultation regarding U.S. missile defense plans with Assistant Secretary of State for East Asian and Pacific Affairs James Kelly, the Chinese government expressed a desire to make such consultations more frequent in the future. See Wade Boese, "Missile Defense Consultations abroad Yield Little Progress," *Arms Control Today* (June 2001), p. 19, and "Missile Meeting Ends in Stalemate," *BBC News* (May 15, 2001), http://news.bbc.co.uk/1/hi/world/asia-pacific/1331585.stm.

[7] Bonnie S. Glaser and Banning N. Garrett, "Chinese Perspectives on the Strategic Defense Initiative," *Problems of Communism*, vol. 35, no. 2 (March/April 1986), pp. 28–44, and John Garver, "China's Response to the Strategic Defense Initiative," *Asian Survey*, vol. 26, no. 11 (November 1986), pp. 1220–1239.

rent as well as the legacy of the Johnson administration's decision to openly rely on a notional ICBM threat from China as the principal rationale for the Sentinel missile defense system.[8]

In March 1985, China submitted a working paper to the Conference on Disarmament, CD/579: *China's Basic Position on the Prevention of an Arms Race in Outer Space*, outlining the emerging threat from anti-ballistic missile and anti-satellite systems.[9] This document contains most of the essential features of the current Chinese position on the weaponization of outer space, focusing heavily on the development of technologies to intercept ballistic missiles and satellites in outer space.

CD/579 expressed Chinese support for "the exclusive use of outer space for peaceful purposes." Although this broad interpretation would require the limitation of "military satellites of all types," the Chinese proposal accepted that the "complexities" of doing so would permit that question to be deferred indefinitely. Instead, CD/579 focused on a single, core obligation—"banning the development, testing, production, deployment and use of any space weapons and the thorough destruction of all space weapons." Space weapons were defined as:

> …all devices or installations either space-, land-, sea-, or atmosphere-based, which are designed to attack or damage spacecraft in outer space, or disrupt their normal functioning, or change their orbits; and all devices or installations based in space (including those based on the moon and other celestial bodies) which are designed to attack or damage objects in the atmosphere, or on land, or at sea, or disrupt their normal functioning.

CD/579 set out the requirement for a new agreement, established the CD as the appropriate forum, and called on the United States and the Soviet Union to honor "special responsibilities" for the prevention of an arms race in outer space. All countries were called on to "refrain from developing, testing and deploying space weapons."

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[8] On announcing the Johnson Administration's intention to deploy the Safeguard anti-ballistic missile (ABM) system, then-Secretary of Defense referred to it as "an ABM deployment designed against a possible Chinese attack…" See "Remarks by Robert S. McNamara Before UPI Editors and Publishers," San Francisco, CA, September 18, 1967. An actual Chinese ICBM threat would not emerge until after the system, by then reconfigured as Safeguard, had been shut down.

[9] Reproduced in the appendix.

As SDI evolved into less ambitious missile defense concepts, Chinese diplomatic efforts shifted during the 1990s toward more general efforts to manage the threat from offensive systems. China pressed to include negative security assurances in the text of the Comprehensive Test Ban Treaty and, in 1994, submitted draft "no-first use" treaties to the other NPT nuclear-weapons states. China again pressed the United States for a bilateral no-first-use agreement, before settling in 1998 for a mutual "non-targeting" agreement.[10] At the same time, China continued to object to the development of various successor systems to SDI. In 1992, for example, China expressed concern that the Global Protection against Limited Strikes (GPALS) system "would not be totally defensive, and that its development would inevitably give rise to mutual suspicion among states."[11]

2000–2001: CD/1606 and CD/1645

During the late 1990s, China's concern about missile defense and anti-satellite technologies re-emerged in response to the growing political pressure in the United States for a national missile defense system. That pressure culminated in 1999. In January, U.S. Secretary of Defense William Cohen announced that the administration would seek $6.6 billion from 2000 to 2005 for the *deployment* of a national missile defense (previous funding had been restricted to research and development) and would explore the "nature and scope" of modifications to the ABM Treaty.[12] In July, President Bill Clinton signed the National Missile Defense Act of 1999 (Public Law 106-38), which made it "the policy of the United States to deploy as soon as is technologically possible" a missile defense system.[13] In May, following Cohen's announcement and during the debate over the Missile Defense Act of 1999, the Chinese delegation to the CD announced that China would withhold its consent from

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[10] On earlier Chinese refusals to accept a non-targeting agreement in place of a no-first-use pledge, see Howard Diamond, "Sino-U.S. Summit Yields Modest Advances in Arms Control Agenda," *Arms Control Today* (June/July 1998), p. 23.

[11] *The United Nations Disarmament Yearbook*, vol. 17 (New York: United Nations Department of Political Affairs 1992), p. 198.

[12] Craig Cerniello, "Cohen Announces NMD Restructuring, Funding Boost," *Arms Control Today* (January/February 1999), p. 20.

[13] Public Law 106-38, National Missile Defense Act of 1999. Available at: http://thomas.loc.gov/cgi-bin/query/z?c106:S.269.PCS:.

any work plan in the CD that did not include negotiations on an agenda item to "prevent an arms race in outer space." In early 2000, the Chinese government submitted a new working paper, CD/1606: *China's Position on and Suggestions for Ways to Address the Issue of Prevention of an Arms Race in Outer Space at the Conference on Disarmament*, which updated the 1985 working paper. CD/1606 was itself modified the next year with CD/1645: *Possible Elements of the Future International Legal Instrument on the Prevention of the Weaponization of Outer Space.*

CD/1606 and CD/1645 largely repeated the spirit and emphasis of the 1985 document, with three significant elaborations that suggest that China's focus was, initially, to induce a dialogue about restricting missile defense deployments. CD/1606 proposes a ban on the testing, deployment, and use of space "weapons, weapon systems or their components"—a specific choice of wording that also appears in the 1972 ABM Treaty's obligation "not to deploy ABM systems or their components." To the extent that a missile defense interceptor is a weapon, China's draft proposal would prohibit the United States from basing a missile defense system or any of its components—including sensors—in space. Both Space Based Infrared System-High and -Low (now the Space Tracking and Surveillance System) would have been considered "components" of a weapon system under the Chinese definition, especially in light of the fact that the latter was considered a prohibited component under the 1972 ABM Treaty.[14]

CD/1645 also included an obligation "not to use any objects launched into orbit to directly participate in combatant activities." Chinese Ambassador to the CD Hu Xiaodi explained that from the Chinese perspective, "laser, particle beam, kinetic weapons, high precision targeting and guidance, remote sensing and detecting, etc., all are space weapons and weapon systems" [sic].[15] At the same time, CD/1645 also reiterated China's willingness to defer discussions about other military uses of outer space and contained a new proposal for an article on "per-

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[14] See John B. Rhinelander, *Statement before the International Security, Proliferation and Federal Services Subcommittee of the Senate Committee on Governmental Affairs* (April 28, 1999), http://www.senate.gov/~gov_affairs/042899_rhinelander_testimony.htm.

[15] A transcript of Hu's remarks before the NGO Committee on Peace and Disarmament panel *A Treaty to Prohibit Weapons and War in Space?* (October 11, 2001) can be found at the NGO Committee on Disarmament website, http://www.igc.org/disarm/T101101os3.html.

missible activities" that would "distinguish between activities that are prohibited and those that are not" in the military arena.

Finally, the documents proposed confidence-building measures, but deferred the discussion of verification provisions to a future date. The confidence-building measures in the 2000 and 2001 working papers—which permitted state parties to publish information about their space programs, declare the locations of space launch sites, and provide notification and basic information about objects launched into outer space—are almost identical to those provided for by the International Code of Conduct against Ballistic Missile Proliferation (Hague Code) (See Table 7-1).

The Chinese government rejected the Hague Code on the grounds that its transparency measures were obligatory.[16] This is an interesting development that perhaps points to the internal bureaucratic obstacles to transparency. The Hague Code bears noting because its proponents initially advanced the idea of a code of conduct as a multilateral diplomatic alternative to missile defense systems. When the successful negotiation of the code produced no change in U.S. missile defense policy, support for the code within the Chinese government may have dwindled.[17]

2002–2003: CD/1679 and the Unofficial Annex

In 2002, China, along with the Russian Federation and five other delegations, issued CD/1679: *Possible Elements for a Future International Legal Agreement on the Prevention of the Deployment of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects.*[18] CD/1679 represented an amalgam of Russian and Chinese positions, which often differ in wording and approach—although not in substance. The two delegations later issued an unofficial annex to the document that compiled comments of other states, *Compilation of Comments and Suggestions to*

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[16] Liu Jieyi, Remarks at the Carnegie International Nonproliferation Conference (Washington, DC: Carnegie Endowment, November 14, 2002). Available at: http://www.ceip.org/files/projects/npp/pdf/conference/lui.pdf.

[17] Undersecretary of State John Bolton made clear that although the International Code of Conduct was "an important addition" to nonproliferation efforts, an equally "important element is missile defense." John R. Bolton, *Remarks at the Launching Conference for the International Code of Conduct against Ballistic Missile Proliferation*, The Hague, Netherlands: November 25, 2002. Available at: http://www.uspolicy.be/Issues/ND/bolton.112502.htm.

[18] Joining China and the Russian Federation on CD/1679 were Vietnam, Indonesia, Belarus, Zimbabwe, and Syria.

Table 7-1: Confidence-building Measures in the Hague Code

"Transparency measures as follows, with an appropriate and sufficient degree of detail to increase confidence and to promote non-proliferation of Ballistic Missiles capable of delivering weapons of mass destruction:

i) With respect to Ballistic Missile programmes to:

- make an annual declaration providing an outline of their Ballistic Missile policies. Examples of openness in such declarations might be relevant information on Ballistic Missile systems and land (test-) launch sites;
- provide annual information on the number and generic class of Ballistic Missiles launched during the preceding year, as declared in conformity with the pre-launch notification mechanism referred to hereunder, in tiret iii);

ii) With respect to expendable Space Launch Vehicle programmes, and consistent with commercial and economic confidentiality principles, to:

- make an annual declaration providing an outline of their Space Launch Vehicle policies and land (test-) launch sites;
- provide annual information on the number and generic class of Space Launch Vehicles launched during the preceding year, as declared in conformity with the pre-launch notification mechanism referred to hereunder, in tiret iii);
- consider, on a voluntary basis (including on the degree of access permitted), inviting international observers to their land (test-) launch sites;

iii) With respect to their Ballistic Missile and Space Launch Vehicle programmes to:

- exchange pre-launch notifications on their Ballistic Missile and Space Launch Vehicle launches and test flights. These notifications should include such information as the generic class of the Ballistic Missile or Space Launch Vehicle, the planned launch notification window, the launch area and the planned direction."

Note: CD/1645 calls for confidence-building measures "to enhance mutual trust," stating "each State Party shall promulgate its space programme, declare the locations and scopes of its space launch sites, the property and parameters of objects to be launched into outer space, and notify the launching activities [sic]." See CD/1645: *Possible Elements of the Future International Legal Instrument on the Prevention of the Weaponization of Outer Space* (June 7, 2001).

the CD Working Paper CD/1679. CD/1679 contains some suggestions that reference wording from previous Chinese documents. Overall, the working paper reaffirms the positions outlined in previous working papers issued to the CD by the Chinese delegation, although it also draws

on language from Soviet draft treaties submitted to the United Nations General Assembly in the early 1980s.[19]

The obligations regarding the non-weaponization of outer space are themselves framed somewhat differently, probably to reconcile different approaches taken in prior Russian and Chinese drafts (See Table 7-2).[20] Under CD/1679, states parties undertake:

- Not to place in orbit around the Earth any objects carrying any kinds of weapons, not to install such weapons on celestial bodies, or not to station such weapons in outer space in any other manner.
- Not to resort to the threat or use of force against outer space objects.
- Not to assist or encourage other States, groups of States, [or] international organizations to participate in activities prohibited by this Treaty.

These obligations are somewhat less comprehensive in scope, restricting only deployment. Research, testing, and development of space-based weapons and anti-satellite weapons would be permitted, as would the deployment of ground-based anti-ballistic missile systems.[21]

The unofficial annex contains suggestions for strengthening the obligations articulated in CD/1679. It suggests restrictions on testing, production, deployment, transfer, and use "to elaborate the intended prohibitions" on the deployment of weapons in outer space. The annex also suggests that the second obligation could be strengthened to preclude "temporary operational disruption, displacement or other non-damaging interference with a space object by another space object" and to "include the testing of any weapons against space objects" or "for anti-satellite purposes."

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[19] See *Soviet Draft Treaty on the Prohibition of the Use of Force in Outer Space and from Space against the Earth*, U.N. General Assembly document A/38/194 (August 22, 1983).

[20] On Soviet drafts, see *Anti-Satellite Weapons, Countermeasures, and Arms Control* (Washington, DC: Office of Technology Assessment, September 1985), pp. 96–99, and *Arms Control in Space* (Washington, DC: Office of Technology Assessment, May 1984), pp. 25–27.

[21] While early Chinese drafts would have restricted theater missile defenses, the Soviet-era submissions permitted ground-based missile defenses. The current draft is probably compatible with Russian Federation efforts to promote a regional theater missile defense for Europe. On Chinese restrictions on TMD, see Li Changhe, "Statement at the Conference on Disarmament," in *Final Record of the 803rd Plenary Meeting of Conference on Disarmament* CD/PV.803

Table 7-2: Obligations and Definitions in Selected Chinese Working Papers Submitted to the CD

CD/579 (March 15, 1985)	**CD/1645 (June 7, 2001)**	**CD/1679 (June 23, 2002)**
At the present stage, the primary objective in the efforts to prevent an arms race in outer space should be "the de-weaponization of outer space," i.e. banning the development, testing, production, deployment and use of any space weapons and the thorough destruction of all space weapons.	Not to test, deploy or use in outer space any weapons, weapon systems or their components. Not to test, deploy or use on land, in sea or atmosphere any weapons, weapon systems or their components that can be used for war-fighting in outer space. Not to use any objects launched into orbit to directly participate in combatant activities. Not to assist or encourage other countries, regions, international organizations or entities to participate in activities prohibited by this legal instrument.	Not to place in orbit around the Earth any objects carrying any kinds of weapons, not to install such weapons on celestial bodies, or not to station such weapons in outer space in any other manner. Not to resort to the threat or use of force against outer space objects. Not to assist or encourage other States, groups of States, international organizations to participate in activities prohibited by this Treaty.
The aforesaid space weapons should include all devices or installations either space-, land-, sea-, or atmosphere-based, which are designed to attack or damage spacecraft in outer space, or disrupt their normal functioning, or change their orbits; and all devices or installations based in space (including those based on the moon and other celestial bodies) which are designed to attack or damage objects in the atmosphere, or on land, or at sea, or disrupt their normal functioning.	Outer space is the space above the Earth's atmosphere, i.e. space 100km above the sea level of the Earth. Weapons are devices or facilities that strike, destroy or disrupt directly the normal functions of a target by various destructive ways. Weapon systems are the collective of weapons and their indispensably linked parts that jointly accomplish battle missions. Components of weapon systems are subsystems that directly and indispensably involved in accomplishing battle missions.	

Documents are reproduced in the appendix.

The substantive equivalence of the two pairs of documents—the Chinese documents issued in 2000–2001 and the Sino–Russian documents issued in 2002–2003—is evident in how they each treat permissible military activities in outer space. Although the Sino–Russian working paper is, *prima facie*, more permissive by permitting all military uses "not prohibited by this Treaty," the Russian statement accompanying CD/1679 articulated the same test for permissible activities as CD/1606, which stipulated that permissible activities should require affirmative approval. Although this difference is not trivial in a negotiating context, the more restrictive language does not appear designed to exclude military missions in outer space beyond anti-ballistic missile and anti-satellite missions. Just as CD/1606 recognized that "military satellites involve rather complex issues and their role should not be all together negated," the Russian delegate to the CD endorsed "auxiliary" military uses that are "applied to maintain strategic stability in the world" such as arms control. The Russian representative added, however, that his endorsement did "not mean, not at all, that military activities in outer space should be used to obtain the superiority in force."[22]

The Sino–Russian working paper does not contain any discussion of verification measures. The annex merely notes the suggestion by some countries that verification would be an important element, but indicates that specific verification measures would depend upon the "the obligations to be verified and the level of confidence to be required."

(Geneva: August 13, 1998), pp. 2–5; For a review of Russian proposals for a "European Theater Ballistic Missile Defense (EuroPro) system," see Nikolai Sokov, *Russian Missile Defense For Europe: The February 20 Proposal is More Serious than It Seems* (Monterrey, CA: Center for Nonproliferation Studies, March 14, 2001), and Victor Mizin, *Russian Cooperative Proposals for Missile Defenses with NATO, European BMD: 'EuroPro'—Any 'Contra'?* (Southampton, UK: Mountbatten Centre for International Studies, 2000). For Chinese commentary on these proposals, see Sha Zukang, *Transcript Briefing on Missile Defense Issue* (Beijing: March 23, 2001).

[22] Leonid Skotnikov, "Statement at the Conference on Disarmament" in *Final Record of the 907th Plenary Meeting of Conference on Disarmament* CD/PV.907 (Geneva: June 27 2002), pp. 19–21. Available at: http://www.ln.mid.ru/Bl.nsf/arh/FDC3CF91FADC6EC443256BE600374C1F?OpenDocument. See also Hu Xiaodi, "Statement at the Conference on Disarmament," in *Final Record of the 907th Plenary Meeting of Conference on Disarmament* CD/PV.907 (Geneva: June 27, 2002), pp. 17–19.

ASSESSING CHINA'S PROPOSALS ON PREVENTING THE WEAPONIZATION OF SPACE

China's position on arms control is best viewed as a mechanism to address Chinese concerns about the U.S. strategic forces modernization begun under the Clinton administration and codified in the Bush administration's 2001 *Nuclear Posture Review*. Although some observers dismiss China's proposals as "a delaying tactic aimed at hampering American progress on ballistic-missile defense," a plausible case can be made that China's proposals are designed to induce a dialogue about strategic stability.[23] United States missile defense deployments are important to China, but only as part of a broader concern about the security of China's deterrent. This concern extends to other elements of the 2001 *Nuclear Posture Review*'s "New Triad."

Appropriate Forum and Agenda

Perhaps the most important conclusion that can be drawn from the Chinese working papers is that the Chinese government *did react* to the possibility of U.S. missile defense deployments—although perhaps not in the manner many U.S. observers expected. While Bush administration officials have denied that Chinese actions are linked to U.S. missile defense developments including U.S. withdrawal from the ABM Treaty, the working papers submitted to the CD by the Chinese government, and the subtle changes in strategy those working papers represent, suggest that Chinese leaders are reacting in the forum they consider to be appropriate, under the agenda item they consider relevant.[24]

Since 1999, China has sought a multilateral treaty regarding the military use of outer space. This change in China's position followed a major foreign policy address by Jiang Zemin, then the Chinese head of state, before the Conference on Disarmament. During his remarks, Jiang issued a very strong warning that:

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[23] Larry Wortzel, *China Waging War on Space-Based Weapons* (August 11, 2003). Available at: http://www.heritage.org/Press/Commentary/ed081103b.cfm?RenderforPrint=1.

[24] See Paul D. Wolfowitz, "Remarks to the Frontiers of Freedom," Dirksen Senate Office Building, Washington, DC, Thursday (October 24 , 2002), and Donald H. Rumsfeld, *Secretary Rumsfeld Interview with Group of Reporters*, Washington, DC (July 11, 2001).

> The research, development, deployment and proliferation of sophisticated anti-missile systems and the revision of, or even withdrawal from, the existing disarmament treaties on which global strategic equilibrium hinges will inevitably exert an extensive negative impact on international security and stability and trigger off a new round of arms race in new areas, thereby seriously obstructing or neutralizing international efforts of nuclear disarmament and nuclear non-proliferation.[25]

In hindsight, the subsequent change in China's negotiating position at the CD in Geneva suggests Jiang's choice of venue was not a coincidence. China had abandoned its unsuccessful effort, conducted from 1994 to 1998, to extract a pledge from the United States to refrain from the first use of nuclear weapons.

China's shift from a bilateral strategy to a multilateral one may have reflected the state of relations between the United States and China. Relations experienced a difficult period in the late 1990s, ostensibly related to concerns about alleged export control violations and Chinese espionage at nuclear laboratories. Whatever motive or merit the charges had, these allegations resulted in a Congressional investigation that produced the *Final Report of The United States House of Representatives Select Committee on U.S. National Security and Military/Commercial Concerns with the People's Republic of China* (The Cox Report) and a lengthy rebuttal by the Chinese government entitled *Facts Speak Louder Than Words and Lies Will Collapse by Themselves.*[26]

As multilateral forums go, the Conference on Disarmament—which the director-general of China's Department of Arms Control and Disarmament at the Chinese Ministry of Foreign Affairs described as "the sole multilateral arms control negotiating forum"—offers a number of advan-

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[25] Jiang Zemin, "Promote Disarmament Process and Safeguard World Security, Address at the Conference on Disarmament," in *Final Record of the 822nd Plenary Meeting of Conference on Disarmament* CD/PV.822 (Geneva: March 26, 1999), pp. 2–5.

[26] See *Final Report of The United States House of Representatives Select Committee on U.S. National Security and Military/Commercial Concerns with the People's Republic of China*, House Report 105–851 (Washington, DC: Government Printing Office, January 1999), http://www.access.gpo.gov/congress/house/hr105851/, and *Facts Speak Louder than Words and Lies Will Collapse by Themselves—Further Refutation of the Cox Report* (Beijing: Information Office of the State Council, July 15, 1999), http://www1.china.org.cn/Beijing-Review/Beijing/BeijingReview/99Jul/bjr99-30e-11.html.

tages.[27] The CD operates with rules that require consensus, which gives China comparative leverage to hold at risk agenda items that the United States presumably values. It also has a broad membership that includes Russia as well as some U.S. allies that are sympathetic to China's concerns.

The timing of the Sino–Russian working paper is instructive. It followed the 2002 *Moscow Treaty.* China may have been attempting to shore up a "common front" with Russia, in the wake of a treaty some in the Bush administration treated as a *de facto* Russian acceptance of U.S. missile defense deployments. Finally, Chinese leaders might have expected that negotiations in the CD would create a venue for informal P5 consultations like the ones that were common in the CTBT negotiations.

"Preventing an arms race in outer space" is a plausible agenda item under which to address the question of strategic force modernization. Space-based systems play an important role in enabling both anti-ballistic missile and long-range precision strike missions.[28] SDI was historically associated with its space-based assets because of the prompt global coverage conferred by space-basing. Even the current ground-based midcourse missile defense depends heavily on space-based sensors. Current Missile Defense Agency plans include space-based interceptor options, beginning with a constellation of three to six space-based interceptors that are scheduled to be in orbit by 2011–2012.[29] Similarly, long-range precision strike capabilities will require space-based platforms for intelligence and communications, even if space-based strike platforms remain many years from deployment.

China's decision to pursue a dialogue about strategic stability through negotiations may also reflect the historical organization of Chinese research efforts, which confined anti-ballistic missile and anti-satellite research to the work under Program 640, which ended in the 1980s.[30] In fact, the

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[27] Liu Jieyi, "Interview: Director Liu Jieyi on Disarmament and Arms Control Conducted by Phillip Saunders," *The Nonproliferation Review,* vol. 11, no. 1 (Spring 2004), p. 8.

[28] For a U.S. expression of this idea, see Simon P. Worden and Martin E. B. France, "Towards an Evolving Deterrence Strategy: Space and Information Dominance," *Comparative Strategy*, vol. 20, no. 5 (October–December 2001), pp. 453–466.

[29] FY 2005 MDA R-2, PE 0603886C, Ballistic Missile Defense System (BMDS) Interceptor (February 2004), p. 2.

[30] For basic information about the "640 program," see Lewis and Xue, *China's Strategic Seapower,* p. 182, and Mark A. Stokes, *China's Strategic Moderniza-*

technologies for intercepting satellites and ballistic missiles are quite similar.[31]

The United States has tended to treat missile defense and outer space as separate issues.[32] This tendency appears to some Chinese observers to be deceptive. Chinese officials and academics often express skepticism about the stated rationale for both missile defense and space control programs. In the case of outer space, the Chinese ambassador to the CD questioned Bush administration officials who warned of a "space Pearl Harbor": "If any country is really worried about possible menace to its space interests, this could certainly be alleviated through the negotiation and conclusion of a treaty on the prevention of space weaponization, as suggested by China." He went on to say, however, that "the [United States] real motivation towards outer space is to defy the obligations of international legal instruments and seek unilateral and absolute military and strategic superiority based on the political, economic and military strength…"[33]

Scope of Obligations

The weaponization of outer space is a plausible agenda item under which to address strategic force modernization and the CD is a suitable forum.

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tion: Implications for the United States (Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 1999), p. 118.

[31] David Wright and Laura Grego, "Anti-Satellite Capabilities of Planned US Missile Defence Systems," *Disarmament Diplomacy*, vol. 68 (December 2002–January 2003), pp. 7–10.

[32] For example, Donald Rumsfeld told KNBC-TV reporter Conan Nolan:

> The report that is the foundation for the ballistic missile defense issue is the Ballistic Missile Threat Commission, and it pointed out that a number of countries will be getting weapons of mass destruction and ballistic missiles to deliver them within the coming period of years.
>
> The Space Commission report that I chaired had nothing to do with anything other than how the United States government and the Pentagon are organized to deal with space issues. It did not change U.S. space policy at all. Indeed, the space policy today is identical to what it was during the prior administration.

See Donald H. Rumsfeld, *Secretary Rumsfeld Interview with KNBC-TV Los Angeles* (August 14, 2001).

[33] Hu Xiaodi, "Statement at the Conference on Disarmament," in *Final Record of the 876th Plenary Meeting of Conference on Disarmament* CD/PV.876 (Geneva: June 7, 2001), pp. 2–5.

A similarly plausible case can be made that China's support for outer space negotiations reflects a straightforward arms control rationale. China's previous nuclear weapons deployments and negotiating behavior at the CD both suggest Chinese policymakers strive to preserve a small retaliatory force capable of providing a sufficient measure of deterrence against nuclear attack. An upper bound on the capability of U.S. anti-ballistic missile and precision strike systems would reassure Chinese leaders that the United States is not seeking the capability to deny these deterrent means to the Chinese. A political commitment along the lines of a no-first-use agreement might usefully build on the 1998 "non-targeting" agreement signed by presidents Jiang and Clinton.[34]

If China's leaders view deterrence as relatively insensitive to changes in the balance of force size, configuration, and readiness, they should prefer an arms control solution. The alternative, an outcome where Chinese strategic forces were drawn into day-to-day operational confrontation with U.S. strategic forces, would require a large investment in and greater sacrifice of control over China's strategic forces. Beijing's preference for arms control has been an enduring feature of Chinese strategic policy and China's strategy in Geneva seems to suggest that it remains influential among China's leaders.

China's preference for arms control is also evident in the relatively limited nature of Chinese missile defense and anti-satellite research, which remains largely compatible with obligations outlined in the Chinese CD working papers. Although China has a small number of surface-to-air missiles for air and missile defense missions, the U.S. intelligence community assesses that China "lacks a coherent, national, strategic-level integrated air defense system (IADS)."[35] Similarly, China has limited anti-satellite capabilities (see chapter 6), with current research reportedly car-

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[34] See The White House Office of the Press Secretary, *Fact Sheet: Achievements of U.S.-China Summit*, June 27, 1998.

[35] Department of Defense, *Annual Report On The Military Power Of The People's Republic Of China*, Report To Congress Pursuant To The FY2000 National Defense Authorization Act (July 2003), p. 29. Some reports suggest this may include an unknown number of Russian SA-300 surface-to-air missiles. For example, see Richard D. Fisher, Jr. *The Impact of Foreign Weapons and Technology on the Modernization of China's People's Liberation Army: A Report for the U.S.-China Economic and Security Review Commission* (January 2004), http://www.uscc.gov/researchreports/2004/04fisher_report/04_01_01fisherreport.htm.

ried out under the 863 Program, a national-level science and technology research and development effort.

Verification

Judging by the working papers submitted by China to the CD, verification provisions may be the most difficult element to negotiate. If the United States insists on stringent verification mechanisms, China is likely to raise a series of objections, including concerns about compromising national security information, technical challenges, and the cost of verification measures. Hu Xiaodi, the Chinese ambassador to the CD, addressed the topic of verification during a United Nations Institute for Disarmament Research (UNIDIR) workshop in May 2004, concluding, "It may be advisable to put the verification issue aside for the time being," and "the most important thing to do at present is to reach a political consensus on the prevention of an arms race of and their weaponization in outer space."[36] This viewpoint is reiterated in the nonpaper concerning verification.[37]

For a variety of security, bureaucratic, and political reasons, transparency is a high cost concession for the Chinese government.[38] The technology, personnel, and facilities in China's space launch and ballistic missile programs are essentially coextensive. Most of China's space launch vehicles are derived from Chinese ballistic missiles and are manufactured in the same factories. All Chinese ballistic missiles undergo final assembly at the China Academy of Launch Technology plant in Wanyuan.[39] The United States Defense Intelligence Agency was able to estimate that China produced ten DF-5-type airframes a year from 1978–1982, but could not be sure how many were space launch vehicles.[40]

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[36] Hu Xiaodi, Remarks to the Seminar on Safeguarding Space for All: Security and Peaceful Uses, Geneva, March 26, 2004.

[37] This document is reproduced in the appendix.

[38] Li Bin, "China and Nuclear Transparency," in Nicholas Zarimpas, ed., *Transparency in Nuclear Warheads and Materials: The Political and Technical Dimensions*, (Oxford: Oxford University Press, 2003), pp. 50–57.

[39] Craig Covault, "Chinese Facility Combines Capabilities to Produce Long March Boosters, ICBMs," *Aviation Week & Space Technology* (July 27, 1987), p. 50.

[40] Robert S. Norris, Andrew S. Burrows, and Richard W. Fieldhouse, *Nuclear Weapons Databook: British, French, and Chinese Nuclear Weapons* (Boulder, CO: Westview Press, 1994), p. 364.

Chinese leaders may require political commitments from the United States to refrain from using verification and confidence-building measures for espionage. The decision by the Chinese government to reject the Hague Code on the grounds that transparency measures were obligatory suggests that transparency issues may divide Chinese policymakers. According to one Chinese participant, a decisive signal of reassurance during the CTBT negotiations was "a commitment to China regarding possible abuse of verification [in a letter from Secretary of State Warren Christopher to Minister of Foreign Affairs Qian Qichen expressing that] the United States understood China's concern on NTM and was committed to compliance by all parties to the CTBT with these CTBT provisions against possible abuse."[41]

China—as well as a number of other states—may also require assurances that verification assets would not also be used to circumvent agreements. A United Nations *Study On The Application Of Confidence-building Measures in Outer Space*, in which three Chinese delegates participated, expressed concern that radars that "can track satellites and other objects in space and observe missile defense tests to obtain information for monitoring purposes are also an essential component of present generation missile defense systems, providing early warning of an attack and battle management support, distinguishing reentry vehicles from decoys, and guiding interceptors to their targets."[42] Similarly, a study by RAND concluded, "X-band radars designed for debris monitoring could provide a ballistic missile mid-course tracking capability that would be useful in a National Missile Defense system."[43]

Space-based verification technologies produce the same set of challenges. The UN study suggests:

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[41] Zou Yunhua, *China and the CTBT Negotiations* (Stanford, CA: Stanford University Center for International Security and Cooperation, 1998), p. 24.

[42] The primary Chinese delegate accepted the study's conclusions without reservation and the Chinese Representative to the UN voted to commend the study to member states. See *Report of the Secretary-General, Study on the Application of Confidence-building Measures in Outer Space* (New York: United Nations, 1994), quotation on p. 36. The Chinese Ministry of Foreign Affairs sent Yu Mengjia to the first two sessions, Sha Zukang to the third and Wu Chengjiang to the fourth. See also Du Shuhua, "The Outer Space and Moon Treaties," in Serge Sur, ed., *Verification of Current Disarmament and Arms Limitation: Ways, Means, and Practices* (New York: United Nations, 1992), pp. 123–148.

[43] Daniel Gonzales, *The Changing Role of the U.S. Military in Space* (Washington, DC: RAND, 1999), p. 4.

> …technical collection systems should not be so powerful that they reproduce the…systems that they intend to limit. Verification schemes that require inspection satellites to rendezvous with other satellites in order to determine the presence or absence of prohibited activities may be difficult to distinguish from prohibited anti-satellite systems. Similarly, large space-based infrared telescope sensors used for verification may be difficult to distinguish from sensors that would form the basis for [a] missile defense battle management system.[44]

The similarity between space-based verification technologies and offensive counterspace capabilities is evident in the relevant U.S. programs. The space-based sensor currently used by the United States for space surveillance is a re-tasked Ballistic Missile Defense Organization satellite, the U.S. Midcourse Space Experiment (MSX) Satellite. The U.S. Air Force considers space object identification (SOI)—roughly analogous to on-orbit inspections—as part of the "space control" mission that also includes anti-satellite intercepts. The Air Force also intends to conduct both inspections and intercepts with the same platform, based on the Experimental Spacecraft System (XSS), a prototype series of micro-satellites. The first satellite in the series, the XSS-10, was launched in 2003. That satellite maneuvered to within 35 meters of an expended Delta II rocket body, transmitting digital images to Earth, and conducted a number of other on-orbit maneuvers for twenty-four hours before completing its mission. The Air Force launched the second satellite in the series, the XSS-11, in 2005. Unlike the XSS-10, the XSS-11 was expected to remain in orbit for a year and conduct close-proximity operations to multiple targets of opportunity.[45] The source and nature of these missions are understandably suspicious to other space users, China included.

A political commitment to refrain from abusing verification protocols may be enhanced by arrangements among parties to share data. A cooperative approach, drawing from experience with the CTBT's International Monitoring system, would be for parties to share space situational awareness data and certain space technologies. At this time, the world relies exclusively on the United States for the provision of orbital data neces-

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[44] *Report of the Secretary-General,* p. 36.

[45] Russ Partch, *XSS-11 (AFRL-0003) DoD Space Experiments Review Board*, Program Briefing, November 2002.

sary to avoid collisions.[46] The United States is currently exploring mechanisms to disseminate satellite tracking data and analytic services to other space-faring states. The United States, for instance, provided collision avoidance analysis for China's Shenzhou manned space missions. Sharing space situational awareness data with China might be an important method of reassurance.

Other forms of civil space cooperation may also be essential. Some observers have suggested, for instance, encouraging China's participation in the International Space Station. Microsatellite technology might offer another area for cooperation. A Chinese university has launched a pair of small satellites built in cooperation with a British University firm, Surrey Satellite Technology Ltd (SSTL). SSTL built and launched a satellite, SNAP-1, that maneuvered to within nine meters of a Surrey-Qinghua University satellite in 2000. The Chinese satellite contained a multi-spectral camera with forty-meter resolution to demonstrate a constellation of remote-sensing micro-satellites for natural disaster monitoring and mitigation.[47] Qinghua University launched a second satellite with SSTL, the twenty-five-kilogram Naxing 1 (a contraction of *Nami Weixing,* or "Nanosatellite"), in 2004.

Although China would, in principle, be interested in expanded civil space cooperation, any enthusiasm will be tempered by lingering wariness and animosity over accusations in the late 1990s that the Chinese military obtained "dual use" technology by launching U.S.-made satellites. For this reason, European initiatives may in fact be more helpful.[48]

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[46] General Accounting Office, *Space Surveillance Network: New Way Proposed to Support Commercial and Foreign Entities*, GAO-02-403R Space Surveillance Network (Washington, DC: General Accounting Office, June 7, 2002), p. 1.

[47] You Zheng and M. Sweeting, "Initial Mission Status Analysis of 3-axis Stable Tsinghua-1 Microsatellite," The 14th Annual AIAA/Utah State University Conference on Small Satellites, Logan, UT (August 21–24, 2000), and Xiong Jianping et al., "On board Computer Subsystem Design for the Tsinghua Nanosatellite," 20th AIAA International Communication Satellite Systems Conference, Montreal, Canada (May 12–15, 2002). Despite the innocuous mission of the Chinese satellite and its relatively limited capabilities, the Department of Defense identified TsinghuaSat-1 as evidence that China is developing "parasitic microsatellites" for use as anti-satellite weapons. See Chinese Military Power (July 2003), p. 36.

[48] Wei Long, "ESA to Help China Join ISS," Space.com (July 29, 2001), http://www.spacedaily.com/news/china-01zr.html.

CONCLUSION

The deadlock at the Conference on Disarmament after March 1999 is perhaps the most visible result of U.S. missile defense policy during the 1990s. The timing, choice of venue and choice of agenda items all suggest a real concern about the modernization of U.S. strategic forces. A legal instrument for the prevention of an arms race in outer space would provide the same sort of political assurance as a no-first-use pledge from the United States, trading some clarity of political commitment for more observable restrictions on U.S. behavior. This sort of compromise would require more intrusive verification measures, which are a high-cost concession for the Chinese. Resolving Chinese concerns may require additional political commitments, as well as confidence-building measures centered on cooperation in the peaceful use of outer space.