



**National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore-12**

International Strategic and Security Studies Programme

LECTURE

Date: Monday, November 16, 2009

Speaker: **Dr. Geoffrey Forden,**
Principal Research Scientist in MIT' Program on
Science, Technology and Society
U S A
Email: forden@MIT.EDU

Chairperson: Prof. S Chandrashekar
JRD Tata Visiting Professor

**Title: The International Missile Proliferation Consortium:
The Cases of Iran and North Korea**

Time: 4:00 pm (Tea 3:30 pm)

Venue: Auditorium

Abstract: The past two years have seen a flurry of missile development activity in both Iran and North Korea. While both countries have used these launches to further their understanding of missile technologies, the launches have also given outside observers unprecedented insight into how these countries are progressing. A series of videos released by Iran of its missile production lines and rocket launches together with several leaked secret internal Iranian memos discussing their missile development program are used to understand the level of indigenous production capacities and the level of foreign assistance from countries such as North Korea and China. Photo-comparisons between Iran's Safir two-stage satellite launch vehicle and North Korea's U'nha-2 indicate that both used the same last stage for orbit insertion. The launch history of this stage, a failure and then a success for Iran and then a failure for North Korea indicate that not only is Iran solving its own problems but is probably not sharing the solutions with its partners. This strategic decision on Iran's part is also indicated by the secret Iranian memos, which shed light on the interesting internal dynamics of this international missile development consortium. A unique satellite image taken during the launch of North Korea's U'nha-2 is used to estimate the trajectory flown by that missile as it passed through both the speed of sound and the point of maximum dynamic pressure. North Korea took pains to fly the U'nha-2 through both these events with nearly zero angle of attack. It is possible that this represents a lesson learned the hard way when the DPRK's 2006 satellite launch attempt ended in a catastrophic failure forty-some seconds after launch.

All are invited to attend



NIAS

**National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore-12**

International Strategic and Security Studies Programme

Public Lecture

**How China Loses a War in Space – and the
Consequences for All of Us**

by

Dr. Geoffrey Forden

Principal Research Scientist in MIT's Program on Science,
Technology and Society
USA

on

Tuesday, November 17, 2009

At 4: 00 pm

Venue:

**J R D Tata Auditorium [NIAS]
National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore 560012**

Program

3:30 p.m.	Tea
4:00 p.m.	Introduction of Speaker
4:05 p.m.	Lecture by Dr. Geoffrey Forden
4:45 p.m.	Discussion
5:15 p.m.	Program Concludes

Abstract: China's destruction of an obsolete weather satellite in January 2007 gave ample evidence that they are prepared to challenge rivals, both the United States and regional rivals, in space. This is particularly worrying for the United States because its armed forces have become so dependent on satellites. For instance, the US military uses satellites to not only relay the orders to drop bombs but also to actually guide them to their target. This dependence on space assets has many worried that the US could be especially vulnerable to anti-satellite (ASAT) attacks by the Chinese in an attempt to negate the conventional military advantage the US has. However, the US dependence on space has produced so much redundancy that the US could ride out the largest space attack China could throw at it. In addition, simple defensive maneuvers could all but eliminate the threat from China's ASAT. On the other hand, China could easily eliminate the space assets of its regional rivals both in low-Earth orbit and in Geostationary orbit. The solution to these threats is a global partnership of all nations, including China, that guarantees the continued flow of information to any nation whose satellites are destroyed by the actions of another. Eliminating the military utility of ASATs also eliminates the threats to peaceful uses of space that arises from the inevitable space debris generated in such a space war.

Geoffrey Forden, principal research scientist in MIT's Program on Science, Technology, and Society. Dr. Forden—whose PhD is in physics—has been at MIT since 2000 where his research includes the analysis of Russian and Chinese space systems as well as trying to understand how proliferators acquire the know-how and industrial infrastructure to produce weapons of mass destruction. In 2002-2003, Dr. Forden spent a year on leave from MIT serving as the first Chief of Multidiscipline Analysis Section for UNMOVIC, the UN agency responsible for verifying and monitoring the dismantlement of Iraq's weapons of mass destruction. Previous to coming to MIT, he was a strategic weapons analyst in the National Security Division of the Congressional Budget Office after having worked at a number of international particle accelerator centers.

All are invited to attend