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China's race for superiority in quantum technology and hypersonic weapons

Chinese universities and US technology companies – such as IBM and Microsoft – are racing to develop quantum computers that will allow the use of subatomic particles to process data on a scale vastly superior to today's ones.

In the military field, quantum technology can help China build global communication networks, improve computing and decryption capabilities, assist in the detection of stealth weaponry, and make submarine navigation more accurate. In this sector the Peoples' Liberation Army's Academy of Military Science (AMS) is a research leader that has spawned in July 2017 the National Defence Science and Technology Innovation Research Institute (also known as NIIDT – National Innovation Institute of Defence Technology). In early 2018 AMS should have enrolled a contingent of 120 highly qualified researchers working also on artificial intelligence and quantum technologies.

In August 2016, China sent the world's first quantum satellite into space, paving the way for a secure quantum communication network.

In May 2017, Chinese scientists declared they had built the first form of a quantum computer.

Moreover, China is focussing on research in hypersonic weapons, an area in which it is also quickly narrowing the gap with the United States. Last August, it successfully tested a hypersonic aircraft named the Starry Sky-2 (Xingkong-2), an experimental craft known as a "waverider" for its ability to surf one or two layers of the shock waves it generates. Once fully developed, waveriders could be used to carry warheads at speeds capable of penetrating any anti-missile defence system currently available at speeds up to six times the speed of sound. Hypersonic weapons could be used to carry out global strikes.

The 23rd of April the Xiamen University, after having secured permission from the PLA that apparently funded its development, tested in the Gobi desert a "double waverider" aircraft, called Jiajeng-1. Chen Jiageng was a businessman who founded Xiamen University in 1921. The claimed speed of the aircraft should be Mach 5, but for the time being distance and speed remain classified by the PLA.

Later on, the China Aerospace Science and Technology Corporation (CASC) will produce a computer generated imagery advertising/propaganda video on the new palette of hypersonic weapons including the Dong Feng DF-17 missile that should carry a hypersonic glide vehicle (first test the 1st of November 2017).

Waveriders were already developed by the US first as manned aircraft in the Sixties (the XB-70 Valkyrie supersonic Mach 3+strategic bomber, never fielded) and then as unmanned aircraft in 2010 (Boeing X-51 Waverider Mach 5 hypersonic scramjet). Then development was slowed until a recent revival.

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