

# The Study for Quantum Computer Technology and Astronautic Craft of High End Equipment

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## Abstract

The high technique quantum computer would develop the sustainability cut edge scientific project recently, therein searching for it could provide higher computation capability applied to 5G information and big scale logistics management etc. now. On the other hand, the Change series lunar explorer has been launched on May 3rd, 2024 whose task is going to carry back moon back territory soil sample to earth of China. Above two projects are able to ensure Chinese high end technological level to go upside existing former line of world altitude in near future. As known Chinese high technology has been becoming gradually dominant in world, so the cut edge projects will contribute to world human beings innovation and science progression, which is concluded here.

**Keywords:** High technique; Computer; Quantum; Develop; Sustainability; Astronautics; High equipment

## Introduction

In China the many high technique like quantum computer and astronautic craft etc. would occupy more important position in the world. Thereby Chinese equipment level must be searched further for seeking exceptional technology for its utilization in those field to improve the world exploring eyes whose aim is about to conquer the mysterious fields for contributing to human being. The more talents may be regulated to participate those high end equipment research and development from now on. They need to push the high intelligent technique development to a new era where the D wave molecule and moon exploratory working has been actively proceeding by us [1-9]. Firstly the quantum technique is able to establish some experimental trial for utilizing its characteristic to computer CPU (Central processing unit) and chip product currently. Secondly the astronautic craft would proceed space and moon exploratory task for our knowledge out earth whose destination is space competitive and beneficial survival and utilization. Therefore the above two aspects will become important and significant for our benefits to utilize source ultimately. So the certain research and developing situation could affect our live

better and conveniently which is able to be acquiring more experience. On the other side, the high end technique will wield its role more and more on behalf of human being advantage and capability. In near future the more high technology products will occupy the more effectiveness in daily live. The advanced talents can play an important role on sustainability developing innovativeness and materials for satisfying humans demand to control the cut edge knowledge and produce many equipment to convenience live and work. After all much research and products can be created continuously for improving many recruiting talents exceptionally to resolve the working opportunities then develop economic level and environment.

## Discussions

### Quantum computer technology

In the past few years, quantum computers have become a topic of great interest in the technology world, as they are the intersection of the fields of computer science, physics and mathematics, providing a new method of computation that could theoretically process information more efficiently than traditional computers on a number of problems. Quantum computer has a wide range of applications in information security, material science, optimization

problems and other fields. D wave molecule has been central part in quantum computer whose frequency attains 110G to ensure it the bigger value proceeding at lower temperature made the difficulty. The basic principles of quantum computers are based on superposition and entanglement states in quantum mechanics. Unlike conventional computers, quantum computers use quantum bits (qubits) as the basic computing unit, which can represent superposition states of 0 and 1 at the same time, processing multiple states simultaneously. Quantum entanglement allows information to be passed between different qubits instantaneously, greatly increasing the speed of computation [3]. At present, the development of quantum computers has made important progress. In terms of hardware, scientists and research institutions in various countries are committed to developing more efficient qubits, including superconducting qubits, ion trap qubits, topological qubits, and so on. On the software side, a number of quantum programming frameworks and tools have also emerged that make it easier for developers to write quantum programs. In the future, as quantum computer technology continues to develop, we can expect to see its application in various fields. For example, in the field of information security, quantum computers can improve the security of data by breaking traditional encryption algorithms. In the field of materials science, quantum computers can predict the properties and properties of new materials by simulating the behaviour of microscopic particles. In the field of optimization problems, quantum computers can solve some problems that are difficult to solve with traditional methods, such as large-scale power system optimization and logistics network planning. In short, quantum computer, as a new computing method, has great potential and broad application prospects. As the technology continues to advance in the future, we can expect to see it play an increasingly important role in various fields. For enterprises and individuals, understanding the basic principles and application scenarios of quantum computers will help them better cope with future challenges and opportunities. “Zuchongzhi-2” has been superconductive quantum computer prototype found by University of Science and Technology of China Panjianwei and Zhuxiaobo and Pengchengzhi who were combining research team with CAS(Chinese Academy of Sciences) Shanghai technology physics institution to cooperate and succeed in October 2021 [1]. In December 21st 2021 Journal of American Physics Society in physics web site had announced 2021 year international physics field ten important progressions and ZuChongzhi-2 was candidate and selected. The quantum computer may surpass the solution supercomputer with special problem, which is quantum one first milestone and attains it to acquires more than 50 relative qubit. The super conduction qubit that is regarded as international certificating had realized extending quantum computation physic one system. Panjianwei etc. Long aims to super-conduction computer computing field and in May 2024 they constructed internationally

the biggest quantum qubit number 62 prototype “Zuchongzhi-2”, moreover realized programming availably two dimensions quantum walk.

### **Astronautic craft and military**

On May 3rd, 2024 ChangE Six explorer used Changzheng Five Yao eight transferring rocket has launched and succeeded in Wenchang rocket launching place. After that it precisely entered earth and moon orbit and started world first moon back digging perish tour. The transferring rocket had filed after about 37 minutes the rocket and craft separated and took ChangE Six explorer directly to push near earth 200Km and remote earth height about 3.8 hundred thousand Km predictive earth and moon orbit. It has been combined with orbiter, recoverable capsule, landing one, lifting one. [5] and then it will experience earth and moon transferring, near moon braking, surrounding moon flight, landing downward, moon surface soft landing course. At moon back preliminary region collecting moon surface rock and moon soil sample, meanwhile developing scientific explore. ChangE Six task predicting needs about 53 days to compare with 2020 year moon front digging gem of ChangE Five task, this time task period long and engineering creation big, risky highly, difficult big which needs to break out anti-orbit designing and controlling, moon back intelligence quick digging sample, up and down key technology. ChangE Six is going to collect gem moon samples and anticipate deeply human being research about moon forming cause and evolving history. The moon back is more complicated than front. Up to now human beings collecting sample returning task all exists in moon front. ChangE Six preliminary land area to be south Aitken basin has been moon three body which is owning an important research value. ChangE Six still carries Europe space bureau, France, Italy, Pakistan four international loads and this time would develop the many item researches at moon back. From CAS (Chinese Academy of Sciences) space application engineering and technology center Chinese space station No. 6 space science test samples had come back with Shenzhou 17 manned craft on April 30<sup>th</sup> 2024. They carried life science test ones which transported to Beijing scientists on May 30<sup>th</sup> and material science test ones which will transport to Beijing with manned craft in light of introduction this time coming back test samples included 23 science items are including protein crystal life organic molecules seed etc. 32 kinds life test ones and non-container materials high temperature materials and off cabin exposing one etc 18 types materials experiment ones that is 31.5Kg totally. Table 1 may show that the Navy Ship tons for former ten countries whose country is America with 300.8 tons in 2012 and secondly is Russia with 68 tons, thirdly is China with 64.5tons for former three ones. On the other hand the nine is Brazil with 14 tons and the ten may be South Korea with 12 tons.

Table 1: The Navy ship total tons with former ten countries [4].

No.	Countries	Tons/10,000
1	America	300.8
2	Russia	68.1
3	China	64.5
4	Japan	35.5
5	Britain	25.3
6	India	22.3
7	France	20,8
8	Italy	13.7
9	Brazil	14.2
10	South Korea	12.7

### Academic papers in CNKI

In Figure1 the papers have been shown in terms of year in CNKI(China National Knowledge Internet) where we can see the papers in 2011 and 2017 is the highest with 6,600 and 6,500 ones, at the same time that attains 4,300 in 2023. The former was data before Covid-19 and the latter was after it, so the recovery tendency will be shown after 2020. There are still the huge potential to make us writing more academic papers in future in light of the figure exhibition. The average difference between China and America would be 1:5 rate still that means each man output papers number has gap up to now thereby the much endeavour has to pursue definitely. The average published papers must have big elastic space for us to keep up with even surpass the developed countries like America, Japan and south Korea in following five years.

### Conclusions

The high technique quantum computer would develop the sustainability cut edge scientific project recently, therein searching for it could provide higher computation capability applied to 5G information and big scale logistics management etc. now. On the other hand, the ChangE series lunar explorer has been launched on May 3rd, 2024 whose task is going to carry back moon back

territory soil sample to earth of China. Above two projects are able to ensure Chinese high end technological level to go upside existing former line of world altitude in near future. As known Chinese high technology has been becoming gradually dominant in world, so the cut edge projects will contribute to world human beings innovation and science progression, which is concluded here. So we need to continuously search them for utilized to current equipment in order to improve their property with certain innovativeness who's developing level wants many talents participated in near future. Many reformative ideas is about to be utilizing on those product and equipment so as to improve our innovativeness achievement. The future must become a fully new innovation product for us to manufacture and continuously develop.

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