Congress of the United States
House of Representatives
SELECT COMMITTEE ON THE CHINESE COMMUNIST PARTY

October 16, 2024

The Honorable Antony Blinken
Secretary
U.S. Department of State
2201 C St NW
Washington, D.C. 20451

The Honorable Lloyd Austin
Secretary
U.S. Department of Defense
1000 Defense Pentagon
Washington, D.C. 20301

Dear Secretary Blinken and Secretary Austin,

We write to request that the Department of State and Department of Defense strengthen action to address ongoing instances of problematic People's Republic of China's (PRC) dual-use research in the Arctic territory of the United States' NATO allies. In recent years, the PRC has increased its effort to seek access to and exert influence in the Arctic, including expanding dual civil-military research efforts in the region. The Arctic is critical to U.S. national security interests and the defense of our homeland, and we must work with our allies to preserve our defense treaty commitments. PRC dual-use research activities such as the examples cited in this letter, may carry significant security implications for the United States and its NATO allies.

Both the PRC and Russia are expanding their military operations in the Arctic.[1] The region is an operational zone for the deployment of nuclear-powered ballistic missile submarines. For the United States and NATO, maintaining a strategic advantage in the Arctic strengthens the effectiveness of our nuclear deterrence. The Arctic is located at the crossroads of the shortest air and missile routes between the United States and any location in Eurasia, and thus is crucial for early warning systems, missile defense, and potentially intercepting missile attacks.

The PRC understands the strategic importance of the Arctic. In 2015, the PRC explicitly highlighted the importance of the polar regions to PRC national security in its National Security Law.[2] Shortly thereafter, in 2018, the PRC issued its first Arctic Strategy, declaring itself a "near-Arctic state,"

[1] https://www.scmp.com/news/china/military/article/3281228/what-does-chinas-first-arctic-coastguard-patrol-russia-reveal-about-its-ambitions
[2] https://www.gov.cn/zhengce/2015-07/01/content_2893902.htm

despite being located some nine hundred miles away from the Arctic circle.[3] The PRC also endeavors to create a "Polar Silk Road" as part of its Belt and Road Initiative and explicitly seeks to develop Arctic shipping routes and infrastructure projects in the region. Given the PRC's distance from Arctic territory, access to the Arctic for satellite communication ground stations and scientific research greatly expands the operational effectiveness of the People's Liberation Army (PLA) and furthers the PRC's global ambitions.

A key location in the PRC's Arctic ambitions is Svalbard, a remote archipelago under the sovereign control of Norway per a 1920 treaty known as the Svalbard Treaty.[4] On Svalbard, the PRC established its first research station in the Arctic. The Treaty specifically forbids "war-like" activities on the archipelago, and it is imperative that this provision be upheld consistently. However, there appear to be examples where this has not in fact been the case.[5]

According to recent news reports, China Research Institute of Radiowave Propagation (CRIRP), whose work focuses on space physics, also operates at this facility, known as the Yellow River Station.[6] CRIRP belongs to the China Electronics Technology Group Corporation (CETC), which is one of the PRC's top defense conglomerates and a "Chinese Military Company" as defined by the Department of Defense 1260H list. CETC appears to have a stated goal of leveraging civilian technology for the PRC military.[7] CRIRP also runs the National Defense Key Laboratory of Electromagnetic Environment, a PRC national-level defense laboratory that conducts classified military research.[8]

CRIRP has led PRC development of the over-the-horizon radar, which can detect ships, missiles, and aircraft at very long distances. CRIRP's work on Svalbard includes detailed ionospheric observations that are critical for understanding space weather and its impact on communication and navigation systems, which is inherently dual-use. By collecting data on ionospheric dynamics unique to the Arctic region, CRIRP's research in the Arctic could enhance not just civilian communication, but also potential military operations with capabilities like remote sensing. Very notably, CRIRP collaborated with a researcher at the PLA University of Science and Technology, using the data collected from Svalbard to study missile guidance.[9] The aforementioned news report also highlights that it is difficult to ascertain end users of the research performed based on data collected at the Yellow River Station in Svalbard since the data can be sent back to the PRC for remote analysis and research.[10]

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[3] https://www.wired.com/story/chinas-scientists-are-the-new-kids-on-the-arctic-block/

[4] http://www.austlii.edu.au/au/other/dfat/treaties/1925/10.html

[5] For example: Yang, S., et al. (2014). *Numerical Simulation of the Role of Dayside Magnetic Reconnection in Polar Cap Patch Formation. Chinese Journal of Geophysics*, 57(11), 3178. CNKI ID:DQWX201411008; Zhang, B., et al. (2015). *Diurnal Variation of Winter F Region Ionosphere at Zhongshan and Svalbard Stations*. *Journal of Geophysical Research: Space Physics*, 120(11), 10498. doi:10.1002/2015ja021465; Yang, S., et al. (2016). *New Evidence of Dayside Plasma Transportation Over the Polar Cap*. *Journal of Geophysical Research: Space Physics*, 121(6), 5977. doi:10.1002/2015ja022171

[6] https://www.newsweek.com/2024/08/09/china-russia-us-arctic-north-pole-strategy-svalbard-norway-sea-route-1916641.html

[7] https://jamestown.org/program/a-model-company-cetc-celebrates-10-years-of-civil-military-integration/

[8] https://www.airuniversity.af.edu/LinkClick.aspx?fileticket=BeogKkr0Pcw%3D&portalid=10

[9] Newsweek, WENG Libin, FANG Hanxian, MIAO Ziqing, YANG Shenggao. Forecasting of Ionospheric TEC One Hour in Advance by Artificial Neural Network[J]. Chinese Journal of Space Science, 2012, 32(2): 204-208. doi: 10.11728/cjss2012.02.204

[10] https://www.newsweek.com/2024/08/09/china-russia-us-arctic-north-pole-strategy-svalbard-norway-sea-route-1916641.html

An examination of CRIRP's research projects in Svalbard, as registered on the Norwegian government's Research in Svalbard (RiS) portal, shows that at least some of them may have significant military uses.[11] According to LJ Eads, the founder of Data Abyss, a Department of Defense-funded open-source intelligence platform, CRIRP replicated these projects in its research collaborations with PLA units, enhancing the PRC's military capabilities, particularly in areas such as missile guidance, over-the-horizon radar detection, satellite communications, space object tracking, early warning systems, electronic warfare, submarine detection, and strategic communication and control in polar regions.[12]

Specifically, project RiS ID 2318 uses European Incoherent Scatter Scientific Association's (EISCAT) radar systems in Svalbard and provides critical data for enhancing over-the-horizon radar systems to better detect targets like aircraft, ships, and missiles over long distances. By improving understanding of ionospheric conditions, the project may support the accuracy of over-the-horizon radar and missile trajectory tracking, especially for intercontinental ballistic missiles (ICBMs) traveling over the Arctic.[13]

Wu Jian, the PRC delegate to the EISCAT Council,[14] is also the director of CRIRP and its National Defense Key Laboratory of Electromagnetic Environment.[15] This individual has led a study on behalf of the national defense laboratory using EISCAT Svalbard radar data to track space debris and low-orbit targets.[16] This study appears to replicate the work being done in the EISCAT Svalbard Radar ESR project, which would enhance the PRC's ability to track smaller space objects compared to systems such as the U.S. Space Fence. Many experts believe these dual-use technologies are crucial for the PLA's ability to operate in the space domain and detect and neutralize enemy satellites and missiles, potentially improving PLA readiness and its strategic defense capabilities.

The RiS ID 3790 project studies how radio waves propagate through the Arctic ionosphere, improving satellite tracking, communications, and remote sensing in the polar region. This research is a critical component of advancing the capabilities of over-the-horizon radar systems that rely on bouncing

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[11] For example, several CRIRP projects registered at the Norwegian Government's Research in Svalbard (RiS) Portal: EISCAT Svalbard Radar ESR (RiS ID 2318 https://www.researchinsvalbard.no/project/20000000-0000-0000-0000-000000005971/project-info), Atmospheric and Ionospheric observation at Chinese Arctic Yellow River Station (RiS ID 3790 https://www.researchinsvalbard.no/project/20000000-0000-0000-0000-000000006654/project-info), and Ionospheric scintillation study in polar region (RiS ID 10972: https://www.researchinsvalbard.no/project/20000000-0000-0000-0000-000000008757/project-info)

[12] Interview with LJ Eads

[13]This research aligns with CRIRP's collaborative project with PLA Unit 61191, which focuses on tracking low-orbit objects like satellites, highlighting the military potential of these technologies for monitoring high-speed, long-range threats, including missile strikes. See Yan yongbao, Liu Xiaodong, Chen Liang, & Ou Ming: "Space Target Surveillance Radar Radio Wave Refraction Correction Method" Space Target Surveillance Radar Radio Wave Refraction Correction Method (空间目标监视雷达电波折射修正方法) *Journal of Ordnance Equipment Engineering,* 2023(5), 10:47. 61191 Troops, Hangzhou 310023; China Research Institute of Radio Wave Propagation, Qingdao, Shandong 266071.

[14] https://eiscat.se/about/organisation/eiscat-council/

[15] https://www.airuniversity.af.edu/LinkClick.aspx?fileticket=BeogKkr0Pcw%3D&portalid=10, http://www.cetc.com.cn/22/339000/338976/1719671/index.html

[16] See TANG Zhimei, DING Zonghua, YANG Song, DAI Liandong, XU Zhengwen, WU Jian. The statistics analysis of space debris in beam parking model based on the Arctic 500 MHz incoherent scattering radar (北极 500 MHz 非相干散射雷达空间碎片凝视探测的统计分析). CHINESE JOURNAL OF RADIO SCIENCE, 2018, 33(5): 537-543. doi: 10.13443/j.cjors.2017111201

signals off the ionosphere to detect distant targets.[17] The RiS ID 10972 project examines how ionospheric disturbances affect satellite signals,[18] contributing to improvements in communication systems and navigation technologies critical for military operations.

In addition to this station in Norway, the China-Iceland Arctic Observatory (CIAO) located in Kárhóll, northeastern Iceland, is another PRC research station that appears to perform dual-use research on the territory of our NATO allies.

In 2012, the Polar Research Institute of China (PRIC) and the University of Iceland signed an agreement to establish CIAO. Despite being formally opened in 2018, CIAO has been collecting data since as early as 2013.[19] PRIC claims that the observatory mainly supports observation and research on aurora, polar ionosphere, space weather and other related areas.[20] By 2023, PRIC had invested approximately $5 million in the observatory, covering nearly all its expenses. Although some Icelandic stakeholders raised concerns regarding the security implications of the research conducted and planned at CIAO, no formal security review has taken place.[21] Moreover, Icelandic law currently lacks specific provisions for national security-related review in such cases.[22]

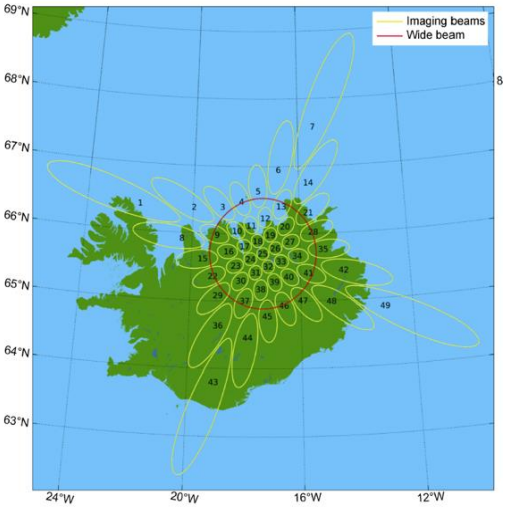

Fig. 1 *The projection of the antenna beams (which covers a large area of the GIUK Gap) of the riometers installed at CIAO in a research paper published by the Polar Research Institute of China*

Source: *He F, Hu Z J , Hu H Q, et al. An introduction to the riometer system deployed at China-Iceland joint Arctic observatory and its beam-forming correction method based on the preliminary data. Adv Polar Sci, 2021, 32(3): 248-260*

Although data collected by CIAO is purportedly open access, but they have never been made publicly available.[23] There is a concern that the PRC could use CIAO for research with military implications by integrating its data into the PRC over-the-horizon radar systems. By monitoring auroral and ionospheric conditions, the PRC could potentially enhance the accuracy of its radar systems that detect submarines, ships, and aircraft across long distances, thereby improving military surveillance and target tracking. A research paper published by PRIC in 2021

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[17] Similarly, CRIRP's project with PLA Unit 92493 (a PLA Navy Weapon testing unit) "Analysis of weather radar over-the-horizon sea surface echo in primary atmospheric waveguide process" focuses on extending OTHR range, showing how both projects support long-range detection and communication critical for early warning and surveillance in remote areas. See, Zhang Han, Wang Hongguang, & Li Jianru. (2022). Analysis of Over-the-Horizon Sea Surface Echo in Primary Atmospheric Waveguide Process (一次大气波导过程天气雷达超视距海面回波分析). Journal of Radio Science, 2022(3), 09:14. 1. Central Meteorological Observatory, 92493 Troops of the PLA, Huludao 125000; 2. China Research Institute of Radio Wave Propagation, Qingdao 266107.

[18] This project mirrors the CRIRP's collaborative project with PLA Unit 92038 (a PLA electronic warfare unit), "A combined ionospheric Inversion Method by data Fusion of Space- and Ground-Based Multi-Source Observations" (一种融合天地基多源数据的电离层反演方法) Journal of Radio Science, 2016 (04)

[19] Guðbjörg Ríkey Th. Hauksdóttir and Kristín Ingvarsdóttir: "Science diplomacy for stronger bilateral relations? The role of Arctic science in Iceland's relations with Japan and China" in *The Polar Journal*, Vol. 14, 2024, Issue 1

[20] https://eu-interact.org/app/uploads/2020/02/16-Halldór-Johannsson-CIAO.pdf

[21] Guðbjörg Ríkey Th. Hauksdóttir and Kristín Ingvarsdóttir

[22] Ibid.

[23] Ibid.

indicates that the riometer and antenna system (see Fig. 1) deployed at CIAO covers a large area in the Denmark Strait.[24] According to Gregory Falco, a professor of systems engineering at Cornell University, this system is capable of monitoring U.S. and NATO strategic submarine traffic through the naval choke point of GIUK Gap.[25]

As a small country, Iceland, through no fault of its own, may have limited resources to scrutinize research collaborations or foreign-operated facilities in its territory for national security or dual-use concerns. However, under the terms of a 1951 defense treaty between the United States and Iceland, which stipulates that the United States is responsible for Iceland's defense under the NATO umbrella,[26] the United States should urge and assist the Icelandic government to carry out a national security review of the research performed by PRC scientists and halt any PRC research that is used for military purposes on Icelandic soil.

Both the National Strategy for the Arctic Region issued by the White House in 2022 and the Arctic Strategy released by the Department of Defense in 2024 correctly expressed concern over the PRC conducting dual-use research in the Arctic region.[27] It is important that we continue to focus on this issue, and work with our allies in the region to prevent problematic PRC activities.

As such, the Select Committee would welcome the opportunity to engage with your departments on the following questions:

1. What is your department's assessment on the national security risk posed by the PRC dual-use research in Svalbard, Iceland, and the mainland Nordic locations of EISCAT on U.S. military operations, particularly in terms of missile defense, submarine detection, and satellite tracking capabilities?
2. Earlier in 2024, the Norwegian government called off a plan to sell the last privately owned land in Svalbard to the PRC.[28] What engagements have your departments had, if any, regarding private, western buyers attempting to purchase the last private land in Svalbard?
3. Has your department discussed concerns about PRC dual-use research in the Arctic with the Norwegian, Icelandic, or Swedish governments?
4. What specific steps can the United States and its NATO allies take to appropriately address PRC access to sensitive dual-use technologies and data collected in the Arctic region?

As the DoD's 2024 Arctic Strategy lays out, we need greater engagement with allies and partners in the Arctic, and we need to take additional action in concert with them. While there are many topics on which research in the Arctic may be necessary and appropriate, particular projects which directly advance objectives of the PRC military may raise important questions relevant to our national security. We look forward to engaging with you to discuss this important topic and kindly request your responses by

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[24] He Fang, Hu Zejun, Hu Hongqiao, Huang Dehong and Yu Yao: "An introduction to the riometer system deployed at China-Iceland joint Arctic observatory and its beamforming correction method based on the preliminary data" in *Advances in Polar Science*, 2021, Vol. 32 Issue 3, pp. 248-260, https://aps.chinare.org.cn/EN/10.13679/j.advps.2021.0031 accessed on Sep. 11, 2024

[25] Correspondence with Dr. Gregory Falco

[26] https://avalon.law.yale.edu/20th_century/ice001.asp

[27] https://www.whitehouse.gov/wp-content/uploads/2022/10/National-Strategy-for-the-Arctic-Region.pdf, and https://media.defense.gov/2024/Jul/22/2003507411/-1/-1/0/DOD-ARCTIC-STRATEGY-2024.PDF

[28] https://www.theguardian.com/world/article/2024/jul/01/norway-blocks-sale-last-private-land-svalbard-china-interest

November 15, 2024. Thank you for your important existing efforts on this issue and work on behalf of the American people.

Sincerely,

John Moolenaar
Chairman
House Select Committee on the CCP

Raja Krishnamoorthi
Ranking Member
House Select Committee on the CCP