

# Nuclear, Missile & Space Digest

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A Fortnightly Newsletter from the MP-IDSA

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## A. India

- India tests second phase of key ballistic missile defence system
- India's Sudarshan S-400 system 'shoots down' 80% 'enemies' in exercise, the rest forced to retreat
- India's Most Advanced Nuclear Reactor Approaches Finish Line

## B. China

- China launches new Gaofen-11 high resolution spy satellite
- China hosts SCO counterterrorism drills
- China's foreign minister Wang Yi warns Philippines over US missile deployment

## C. Russia

- Russia, China wrap up joint patrol in South China Sea
- Russia may deploy nuclear missiles in response to US missile deployment in Germany – MFA
- Russian, Chinese warships complete joint exercise in South China Sea
- Russian, Iranian navies kick off maritime security drills in Caspian Sea
- Russia's Yars missile systems conduct maneuvers in Mari El region
- Boeing, Antonov agree on military cooperation, including drone maintenance
- Russian Aerospace forces, Chinese Air Force conduct joint air patrol
- Russian Pacific Fleet ships enter Gulf of Aden
- Russian Navy corvette, Chinese destroyer carry out joint exercise in Gulf of Finland
- Russia's two Tu-95MS aircraft perform scheduled flight over Sea of Japan

## D. Europe

- Spain Joins PAC-3 User Community
- Italian Navy to equip F-35B fleet with advanced stand-off missiles
- Europe sees Ariane 6 launch as an end to its "launcher crisis"
- UK signs \$227 million contract with Thales for new Martlet missiles
- Europe's JUICE probe set for close encounter with Earth before journey to Jupiter
- Spain to Send Additional Hawk Air Defense Battery to Ukraine

## **E. The United States of America**

- Strengthening US Security: The Introduction of the Mako Hypersonic Missile
- Atlas 5 rocket blasts off on milestone U.S. Space Force mission
- Singapore, US sign civil nuclear cooperation pact

## **F. West Asia**

### **Iran**

- Iran army's air defense force to get new radars, missile interceptors: Cmdr.
- Maritime search, rescue, security exercise kicks off in Iran's Bandar Anzali

### **Israel**

- Israel shoots down a missile fired from Yemen hours after a deadly Israeli strike on Houthi rebels
- Israel military says it intercepts missile, Yemen's Houthi rebels confirm targeting Eilat

### **Yemen**

- Yemen's Houthi rebels launch two missile attacks targeting ships in Red Sea

### **Lebanon**

- Israel, Hezbollah Exchange Deadly Fire Amid Calls For Restraint After Golan Attack

## **The United Arab Emirates**

- Deployment of UAE's Mirage fighters bombers in China raises concerns in US

## **G. East Asia**

- US, Japan, Australia and India announce efforts to boost maritime security
- Japan signed contract to supply US with missiles for Patriot PAC-3 missile defense systems
- Japan to sell \$19m in Patriot missiles to U.S.
- US-Japan security talks focus on bolstering military cooperation, underscores threat from China

## A. India

### India tests second phase of key ballistic missile defence system

*Hindustan Times, July 25, 2024*

The Defence Research and Development Organisation (DRDO) on Wednesday successfully flight-tested the second phase of India's ballistic missile defence system off the Odisha coast to thwart threats from missiles with a range of 5,000 km, the defence ministry announced.

"The target missile was launched from LC-IV Dharma (a launch site in Odisha) at 1620 hrs, mimicking (an) adversary ballistic missile, which was detected by weapon system radars deployed on land and sea, and activated the interceptor system," it said in a statement.

India is pursuing its ballistic missile defence programme in two phases – the first phase has been completed while the second is underway for validating intercept systems in a new range category.

"The phase-II 'AD endo-atmospheric missile' was launched from LC-III at ITR, Chandipur at 1624 hrs. The flight test fully met all the trial objectives," it said, adding that the test demonstrated indigenous capability to defend against ballistic missiles of 5000-km class.

<https://www.hindustantimes.com/india-news/india-tests-second-phase-of-key-ballistic-missile-defence-system-101721876900181.html>

### India's Sudarshan S-400 system 'shoots down' 80% 'enemies' in exercise, the rest forced to retreat

*WION, July 27, 2024*

India recently put its S-400 air defence missile system, acquired from Russia, to test in a war-like scenario, and the results couldn't be more satisfying. In an exercise carried out by the Indian Air Force, the Sudarshan S-400 system 'shot down' 80 per cent of the 'enemy package'. The other 20 per cent were forced to retreat and abandon the mission, news agency ANI quoted defence sources as saying.

Notably, India has deployed three squadrons of the long-range air defence missile system on its borders with Pakistan and China. The recent exercise was conducted in a theatre where one of the squadrons has been deployed.

In recent years, China has ramped up investments in its defence capabilities across the Line of Actual Control (LAC), the de facto border between India and Tibet.

In response to these developments, India has now fully integrated the Sudarshan S-400 system into the Air Force. The Russian system is now called Sudarshan by the Indian Air Force, after the mighty Sudarshan chakra of Lord Krishan.

<https://www.wionews.com/india-news/indias-sudarshan-s-400-system-shoots-down-80-enemies-in-exercise-the-rest-forced-to-retreat-744771>

### India's Most Advanced Nuclear Reactor Approaches Finish Line

*NDTV, July 30, 2024*

India's atomic energy program has crossed a big hurdle, the country's most advanced and most complex nuclear reactor the Prototype Fast Breeder Reactor (PFBR) located at Kalpakkam in Tamil Nadu has finally got approval from India's atomic regulator to start loading the nuclear fuel and then to go ahead and initiate the controlled chain reaction. "It is a huge milestone for India's self-reliant atomic energy program," confirmed Dinesh Kumar Shukla, Chairman of the Atomic Energy Regulatory Board who added that the "PFBR is an inherently safe reactor".

This development now marks the use of plutonium as a nuclear fuel and more importantly the first steps at using thorium as an atomic energy source. India has limited reserves of uranium and all plutonium is anyways generated in atomic plants as natural plutonium does not exist, on the other hand, India has huge reserves of thorium and hence the country is mastering and developing complex technology to use thorium as fuel. Experts

say if India can tap thorium as a fuel, the country can be assured of energy independence and find the potential 'akshay patra' for energy that will last for more than three centuries.

A fast breeder reactor is very unique and to a layperson these defy basic logic since breeder reactors produce more fuel than they consume and that is why some describe these reactors as an endless source of energy. The word 'fast' in these reactors comes from the use of high-energy fast neutrons. India has a functional Fast Breeder Test Reactor (FBTR) at Kalpakkam that has been functioning for the last 39 years.

Atomic Energy Regulatory Board or AERB said, "This permission marks a significant step towards operationalization of PFBR. The 500MWe sodium-cooled Prototype Fast Breeder Reactor (PFBR) being commissioned by BHAVINI at Kalpakkam is a significant milestone in country's nuclear power programme".

<https://www.ndtv.com/science/prototype-fast-breeder-reactor-indias-most-advanced-nuclear-reactor-approaches-finish-line-6223347>

## **B. China**

### **China launches new Gaofen-11 high resolution spy satellite**

*Space News, July 19, 2024*

China added a fifth Gaofen-11 high resolution satellite to its CHEOS constellation with a launch late Thursday.

A Long March 4B rocket lifted off at 11:03 p.m. Eastern July 18 (0303 UTC, July 19) from Taiyuan Satellite Launch Center, north China. The launcher carried the Gaofen-11 (05) high resolution optical earth observation satellite. The China Aerospace Science and Technology Corporation (CASC) declared launch success shortly after in a statement.

Airspace closure notices preceded and notified of the planned launch. The payload was only revealed after launch success was declared.

The satellite adds to China's high resolution Earth observation capabilities. CASC states the satellite will be used for purposes for land survey, urban planning, land rights confirmation, road network design, crop yield estimation, and disaster prevention and mitigation.

The statement provided no images nor details of the satellite. Gaofen-11 satellites are thought to be among China's most capable optical satellites however.

<https://spacenews.com/china-launches-new-gaofen-11-high-resolution-spy-satellite/>

### **China hosts SCO counterterrorism drills**

*TASS, July 23, 2024*

The SCO RATS pointed out that the terrorist threat was especially high in certain regions, posing a danger to citizens in the organization's member states. "Major terrorist attacks lead to numerous civilian casualties and pose a serious security threat throughout the SCO area," the statement notes.

The document emphasized that "the goal of the exercises was to prepare special counterterrorism units for the relevant agencies of the SCO countries to conduct joint activities to respond to the threats of terrorist attacks on their soil, particularly through the use of information and communication technologies."

During the drills, activities were carried out to fight cyberterrorism, as well as a joint counterterrorism activity aimed at preventing the actions of a terrorist group and curb terrorist threats.

The exercise not only was a test of cooperation between security agencies from SCO nations but also made it possible to enhance the skills of counterterrorism forces and carry out useful research on how to organize joint activities to ensure regional security and stability, the RATS press service stressed.

<https://tass.com/defense/1820043>

## China's foreign minister Wang Yi warns Philippines over US missile deployment

*The Economic Times, July 27, 2024*

Chinese Foreign Minister Wang Yi has warned the Philippines over the U.S. intermediate-range missile deployment, saying such a move could fuel regional tensions and spark an arms race.

The United States deployed its Typhon missile system to the Philippines as part of joint military drills earlier this year. It was not fired during the exercises, a Philippine military official later said, without giving details on how long it would stay in the country.

China-Philippines relations are now at a crossroads and dialogue and consultation are the right way, Wang told the Philippine Foreign Secretary Enrique Manalo during a meeting in Vientiane on Friday, according to a foreign ministry statement. Wang said relations between the countries have turned sour because the Philippines has "repeatedly violated the consensus of both sides and its own commitments".

"If the Philippines introduces the U.S. intermediate-range missile system, it will create tension and confrontation in the region and trigger an arms race, which is completely not in line with the interests and wishes of the Filipino people," Wang said.

<https://economictimes.indiatimes.com/news/international/world-news/chinas-foreign-minister-wang-yi-warns-philippines-over-us-missile-deployment/articleshow/112057060.cms?from=mdr>

### C. Russia

## Russia, China wrap up joint patrol in South China Sea

*TASS, July 16, 2024*

Russia and China completed their joint patrol in the South China Sea, the Russian Pacific Fleet said.

"A joint Russian-Chinese maritime patrol in the South China Sea came to an end. At its final phase, the corvette "Sovershenny of the Pacific Fleet and a PLA Navy detachment comprising the Chinese destroyer Yinchuan, the frigate Hengshui and the supply ship Weishanhu conducted a training exercise in convoying a vessel in the zone of the strait. In the course of this episode, a comprehensive defense of one of the patrol ships was organized when passing through a narrow section," the fleet said.

According to the Pacific Fleet, the Russian-Chinese patrol also practiced a resupply operation with Weishanhu on the move.

The fleet said that during 15 days of the patrol the ships traveled about 4,800 nautical miles. Sailors of the two countries rehearsed operations in various formations, anti-submarine missions, and repulsion of aerial attacks by a hypothetical enemy.

<https://tass.com/defense/1817415>

## Russia may deploy nuclear missiles in response to US missile deployment in Germany – MFA

*TASS, July 18, 2024*

Moscow does not rule out deploying nuclear missiles in response to the deployment of long-range US missiles in Germany, Russian Deputy Foreign Minister Sergey Ryabkov told reporters.

"I don't rule anything out," he said, when asked if Russia could deploy nuclear missiles in response to the US missile deployment in Germany.

"If officials from the German federal government believe it reasonable to carry out inflammatory activities, citing what we have in the region (Russia's westernmost Kaliningrad region - TASS), then we will respond with retaliatory measures we deem appropriate," the senior diplomat stressed.

<https://tass.com/defense/1818577>



## **Russian, Chinese warships complete joint exercise in South China Sea**

*TASS, July 18, 2024*

Russian and Chinese Navy warships have completed the Maritime Cooperation 2024 joint exercise in the South China Sea, the Russian Pacific Fleet's press service said.

"A joint exercise of the Russian and Chinese navies, Maritime Cooperation 2024, has been completed in the South China Sea. Its main goal was to strengthen the naval cooperation between the Russian Federation and the People's Republic of China, and also to support peace and stability in the Asia-Pacific region," the press service said.

Sailors from the two nations practiced anti-submarine warfare and naval engagement, as well as defending a group of ships from aerial threats and escorting maritime convoys. They also practiced joint maritime search and rescue efforts. The drills involved around 30 training episodes, which included firing at maritime, coastal and aerial targets.

<https://tass.com/defense/1818357>

## **Russian, Iranian navies kick off maritime security drills in Caspian Sea**

*TASS, July 22, 2024*

A maritime security exercise involving Iranian combat ships and a Russian naval ship kicked off in Iran's territorial waters in the Caspian Sea, spokesman for the drills Captain 1st Rank Abbas Hassani reported on Monday.

"The maneuvers will involve both naval ships and naval aircraft, including the guided-missile destroyers Darafsh, Separ and Paykan, two AB-212 helicopters, the ship Shahid Basir from the Navy of the Islamic Revolutionary Guard Corps [IRGC, Iran's elite armed forces]. Also, the Russian ship SB-45 has recently entered Iran's territorial waters and will take part [in the drills]," the news agency Tasnim quoted the spokesman as saying.

Representatives of Caspian littoral states are present at the naval drills as observers, the spokesman said.

The first stage of the drills took place on Monday when the navies of Iran and Russia practiced extinguishing fire on a merchant vessel, rescue people in distress and eliminate consequences under a scenario prepared in advance, the spokesman said.

<https://tass.com/defense/1819611>

## **Russia's Yars missile systems conduct maneuvers in Mari El region**

*TASS, July 23, 2024*

Yars mobile ground-launched missile systems went on combat patrols in the Russian Mari El Region as part of military exercises that seek, among other things, to rehearse countering sabotage by hypothetical enemy, the Russian Defense Ministry said.

"Servicemen of the Yoshkar-Ola missile unit are carrying out missions including intensive maneuvers on combat patrol routes. Yars missile crews are practicing marches of up to 100 kilometers, spreading out the units, changing their field positions, their engineering equipment, camouflaging efforts and protection in combat. Also strategic missile servicemen are rehearsing ways to counter sabotage and reconnaissance groups," the ministry said in a statement.

Missile units and subunits will practice operations to spread out in forested areas in order to increase stealth. Support units will withdraw special equipment from areas of hypothetical chemical contamination.

Also, anti-sabotage formations will practice maneuvering on far approaches to field positions to occupy a more advantageous position in relation to sabotage and reconnaissance groups.

<https://tass.com/defense/1819961>

## **Boeing, Antonov agree on military cooperation, including drone maintenance**

*TASS, July 23, 2024*

Boeing and Ukraine's Antonov Company reached an agreement on cooperation in military projects, including drone repairs for the Ukrainian armed forces, the Boeing press office announced. "We're pleased to continue working with the Antonov Company to support Ukraine development and economic growth," says Ted Colbert, president and CEO of Boeing Defense, Space & Security. "This agreement demonstrates our ongoing efforts to find more opportunities to work with Ukrainian industry."

The bilateral memorandum of understanding covers material provision and repair services for drones, including the ScanEagle, used by the Ukrainian armed forces.

"This agreement opens a whole new level of opportunities for introduction of the newest and the most efficient solutions in addition to the future [joint] projects with Boeing in aerospace and defense industry," Antonov CEO Yevgeny Gavrillov said.

<https://tass.com/defense/1820379>

## **Russian Aerospace forces, Chinese Air Force conduct joint air patrol**

*TASS, July 25, 2024*

Aircraft of the Russian Aerospace Forces and the Chinese People's Liberation Army Air Force have conducted a joint air patrol, the Russian Defense Ministry said in a statement.

"An air group of the Tu-95MS strategic bombers of the Russian Aerospace Forces and the Hong-6K strategic bombers of the Chinese People's Liberation Army Air Force conducted a joint air patrol over the Chukchi Sea, the Bering Sea and the northern part of the Pacific Ocean. Russian and Chinese crews practiced cooperation while carrying out an air patrol mission in a new area. The Su-30SM and Su-35S aircraft of the Russian

Aerospace Forces provided fighter cover," the statement reads.

The joint flight of Russian and Chinese aircraft lasted over five hours.

The ministry specified that the aircraft had not violated the airspace of other countries during the patrol mission. "Foreign fighter jets escorted the air group at certain stages of the route. While performing the mission, both countries' aircraft acted in strict compliance with international law. There were no violations of other countries' airspace," the statement notes.

<https://tass.com/defense/1821093>

## **Russian Pacific Fleet ships enter Gulf of Aden**

*TASS, July 27, 2024*

A detachment of ships of Russia's Pacific Fleet has passed the Bab-el-Mandeb Strait and entered the Gulf of Aden, the fleet's press service reported.

"A detachment of the Pacific Fleet ships consisting of the Varyag guards missile cruiser and the Marshal Shaposhnikov frigate has completed the passage through the Red Sea, moving through the Bab-el-Mandeb Strait and entering the Gulf of Aden," the statement said.

According to the press service, at the moment the crews of the ships continue to fulfill their tasks within the framework of the campaign.

The fleet press service recalled that the campaign began on January 22. During this time, the ships' crews made business visits to the ports of India, Sri Lanka, Iran, Qatar and Eritrea.

<https://tass.com/defense/1822107>

## **Russian Navy corvette, Chinese destroyer carry out joint exercise in Gulf of Finland**

*TASS, July 30, 2024*

The Soobrazitelny corvette of the Russian Baltic Fleet and the Jiaozuo destroyer of

the Chinese Navy carried out a joint exercise in the Gulf of Finland, the Russian Defense Ministry reported.

"A PASSEX-type joint Russian-Chinese exercise took place at the naval military ground of the Baltic Fleet's Leningrad naval base in the Gulf of Finland. It involved the The Soobrazitelny corvette of the Russian Baltic Fleet and the Jiaozuo destroyer of the Chinese Navy," the Ministry said.

The ministry pointed out that, using its radio equipment, the crews detected the mock enemy's mine barriers and destroyed them using the onboard artillery, and practiced joint search and rescue actions and aiding a mock surface ship, damaged in a fight, as well as saving the crew on the water.

"During the training, the servicemen of the two countries performed a mission on rescue on water, with provision of primary medical aid," the ministry added.

<https://tass.com/defense/1822921>

### **Russia's two Tu-95MS aircraft perform scheduled flight over Sea of Japan**

*TASS, July 30, 2024*

Two Tupolev-95MS strategic bombers have performed a scheduled flight over the international waters of the Sea of Japan, the Russian Defense Ministry has said.

"Two missile-armed Tu-95MS strategic bombers of the Russian Aerospace Force's long-range aviation have carried out a scheduled flight in the airspace over the international waters of the Sea of Japan. The flight lasted more than 10 hours," the Defense Ministry said.

Escort fighters Su-35S and Su-30SM provided support.

"At certain stages of the route the strategic bombers were escorted by foreign fighters," the Defense Ministry added. The flight was carried out in strict compliance with international rules of using airspace.

"Long-range aviation pilots regularly fly over the international waters of the Arctic,

the North Atlantic, the Black and Baltic seas, and the Pacific Ocean," the Defense Ministry said.

<https://tass.com/defense/1823191>

### **D. Europe**

### **Spain Joins PAC-3 User Community**

*Lockheed Martin, July 17, 2024*

Officials from the United States and Spain formalized an agreement for Spain to purchase Lockheed Martin's (NYSE:LMT) Patriot Advanced Capability-3 (PAC-3) Missile Segment Enhancement (MSE) missiles and related support equipment. With this agreement, Spain becomes PAC-3's 16th partner nation.

"At Lockheed Martin, we're devoted to helping our customers stay ahead of new, highly contested threats," said Brian Kubik, vice president of PAC-3 Programs, Lockheed Martin. "As the world's most advanced air defense missile, PAC-3 will enhance Spain's national defense capabilities and enhance their effectiveness in the 21st Century Security® battlespace."

PAC-3 MSE features advanced capabilities to defend against incoming threats including tactical ballistic missiles, cruise missiles, hypersonics and aircraft. By adding PAC-3 MSE to its arsenal, Spain will improve its air and missile defense capabilities against evolving threats.

Lockheed Martin has been a trusted partner to the government of Spain and the Spanish defense industry for more than two decades.

<https://news.lockheedmartin.com/2024-07-17-spain-joins-pac-3-user-community>

### **Italian Navy to equip F-35B fleet with advanced stand-off missiles**

*Defence Industry Europe, July 18, 2024*

The Italian Navy has announced a significant upgrade to its Lockheed Martin F-35B Lightning II Joint Strike Fighter (JSF)



fleet, equipping the advanced aircraft with two new stand-off missile types. This revelation comes from the Senate of the Republic's Chamber of Deputies 19th Legislature's Documentation of the Examination of Government Acts, published on July 15.

The documentation disclosed that the MMI's fleet will now be armed with the Kongsberg-RTX Joint Strike Missile (JSM) and the MBDA Selected Precision Effects At Range (SPEAR) 3 air-to-surface missile. These additions join a suite of previously disclosed weapon types, enhancing the capabilities of Italy's fifth-generation fighter aircraft.

The armament program, developed through international cooperation, aims to furnish Italy with a cutting-edge aeronautical weapon system. This system is designed to replace the legacy McDonnell Douglas AV-8B Harrier II line, with an operational lifespan projected to extend at least 30 years. The goal is to address the increasing complexity of both current and future operational scenarios effectively.

<https://defence-industry.eu/italian-navy-to-equip-f-35b-fleet-with-advanced-stand-off-missiles/>

### **Europe sees Ariane 6 launch as an end to its "launcher crisis"**

*Space News, July 23, 2024*

The European Space Agency is optimistic that its "launcher crisis" is behind it after the mostly successful inaugural launch of the Ariane 6 earlier this month. Speaking at a briefing at the Farnborough International Airshow July 22, Josef Aschbacher, ESA director general, hailed the July 9 launch of the rocket on a test flight that successfully deployed several smallsats in orbit, but suffered a malfunction in the auxiliary power unit (APU) in the rocket's upper stage that prevented it from performing a final deorbit burn.

"The launch was 100% successful," he said, noting that the launch phase of the mission was designed as its first hour and six minutes after liftoff, when the upper stage reached orbit and deployed its smallsat payloads.

The second phase, or "technical experiment," involved testing the upper stage while in orbit. It was during this phase that the stage's APU malfunctioned, preventing the Vinci engine from performing a final deorbit burn. That stage remains in low Earth orbit, with two reentry vehicles, intended to deploy after the burn, still attached.

Neither ESA nor the other organizations involved in the flight have disclosed details about what caused the APU problem. Aschbacher said the Ariane 6 task force plans to meet Friday, July 26, and will release its findings to date either that day or the following Monday. "We're focused on keeping our promise on being transparent so you know exactly what's going on," he said.

<https://spacenews.com/europe-sees-ariane-6-launch-as-an-end-to-its-launcher-crisis/>

### **UK signs \$227 million contract with Thales for new Martlet missiles**

*Defense News, July 24, 2024*

The British Ministry of Defence has signed a contract with Thales U.K. to procure "Martlet" missiles for replenishing the country's stocks after donating hundreds of them to Ukraine.

UK Defense Equipment & Support, the defense ministry's procurement arm, announced the new order, valued at \$227 million, on the sidelines of the Farnborough International Airshow here.

"The lightweight multirole missiles [LMM] will equip the UK Armed Forces and we expect the deliveries to begin in 2027," Maria Eagle, minister for defense procurement and industry, told reporters.

She declined to give the exact number of missiles ordered, due to sensitivity around revealing information about British smunition stockpiles.

The Martlet missiles have been used both from the Ukrainian frontlines as well as in operations carried out by the British

Navy in the Red Sea. According to a DE&S press release, the UK has previously gifted hundreds of them to Ukraine.

The London-supplied missiles have made a “significant contribution in terms of Ukraine’s ability to defend their homeland,” Andy Start, chief executive officer of DE&S told reporters. They were previously reported to have been used by the Ukrainian military against Russian Shahed kamikaze drones in an attack against the capital city last year.

<https://www.defensenews.com/global/europe/2024/07/24/uk-signs-227-million-contract-with-thales-for-new-martlet-missiles/>

## Europe’s JUICE probe set for close encounter with Earth before journey to Jupiter

*The Indian Express, July 29, 2024*

European Space Agency’s Jupiter Icy Moons Explorer (JUICE) is gearing up for a pivotal maneuver in its mission to the gas giant.

Scheduled to fly past Earth on August 20, 2024, the spacecraft will come within 4,200 miles (6,800 kilometers) of our planet, providing a rare opportunity to catch a fleeting glimpse of it.

Launched in April 2023, JUICE is Europe’s first mission to Jupiter, tasked with studying the planet and its largest moons: Ganymede, Callisto, and Europa.

These moons are believed to have subsurface oceans beneath their icy crusts, making them key targets in the quest to understand more about potential extraterrestrial life.

When and how can you spot JUICE?

The close flyby of Earth will occur at 5:57 p.m. Eastern Time (21:57 GMT) on August 20. This will assist in adjusting the spacecraft’s trajectory through a gravity-assisted maneuver.

This flyby, along with a planned future flyby of Venus and two additional passes by Earth, is essential for setting JUICE on its course to reach Jupiter in 2031.

The European Space Agency (ESA) has advised that powerful binoculars or a telescope will offer the best chance to view the spacecraft.

Why is the flyby significant?

The flyby will serve as a crucial test for JUICE’s instruments. Notably, the RIME (Radar for Icy Moon Exploration) antenna, which faced deployment issues and electronic noise problems, will be activated for a performance check.

Engineers will have an eight-minute window on August 19 to assess RIME’s functionality and potentially adjust its operations.

“These maneuvers are akin to navigating a narrow corridor at high speed,” said Ignacio Tanco, the mission’s operations manager. He emphasized the precision required for successful execution, given the narrow margin for error.

Ground stations worldwide will be in constant communication with JUICE starting August 17, monitoring the spacecraft’s progress and making necessary adjustments.

<https://indianexpress.com/article/technology/science/europe-juice-probe-set-close-encounter-earth-before-jupiter-9481517/>

## Spain to Send Additional Hawk Air Defense Battery to Ukraine

*The Defense Post, July 29, 2024*

Spain will send another Hawk air defense system to Ukraine in September, Minister of Defense Margarita Robles told her Ukrainian counterpart last week.

Many countries, including Spain, have donated Hawk systems to Ukraine to bolster its air and missile defense capabilities, particularly in the short-to-medium range.

Raytheon developed the Cold War-era MIM-23 Hawk in the mid-1950s for the US Army.

Since then, the system has gone through three major upgrades, the last in 1989.

The US Army replaced the system with the Patriot in 1994, while it remained operational with the US Marine Corps until 2002.

Ukraine is likely to have received the latest Hawk version, capable of shooting down a wide range of aerial targets, including fighter jets, helicopters, and drones.

According to a video posted on the Ukrainian Air Force's official YouTube channel, a Hawk battery brought down six Iran-designed Shahed attack drones in its first engagement.

Other notable intercepts included over a dozen Kh-59 air-launched cruise missiles and sea-launched Kalibr cruise missiles.

<https://www.thedefensepost.com/2024/07/29/spain-hawk-air-defense/>

### *E. The United States of America*

#### **Strengthening US Security: The Introduction of the Mako Hypersonic Missile**

*Financial Express, July 27, 2024*

In response to recent intrusions by China and Russia in Alaska, the United States has decided to bolster its defence capabilities by equipping its fighter aircraft with a new hypersonic missile named 'Mako'. This decision, made in the lead-up to the presidential election, has sparked discussions worldwide, particularly in Russia and China. The Mako missile promises to enhance America's security in conflict zones, rendering its defences nearly impregnable.

The Mako missile, developed by Lockheed Martin, is a multi-mission weapon designed for diverse attack scenarios, including surface, sea, air, and air defence systems. This advanced missile will be installed in all American fighter jets, such as the F-15, F-16, F-18, F-22, and F-35, as well as in bombers and surveillance aircraft. Its capabilities have been rigorously tested across various

platforms, ensuring its readiness for deployment.

Lockheed Martin introduced the Mako missile to the world, naming it after the Mako shark, renowned for being the fastest-swimming fish in the ocean. The missile's design and functionality reflect the agility and speed of its namesake, making it a formidable addition to the US military arsenal.

<https://www.financialexpress.com/business/defence-strengthening-us-security-the-introduction-of-the-mako-hypersonic-missile-3566391/>

#### **Atlas 5 rocket blasts off on milestone U.S. Space Force mission**

*CBS News, July 30, 2024*

A United Launch Alliance Atlas 5 rocket carrying a classified U.S. Space Force satellite — the booster's final national security payload — blasted off from Cape Canaveral two minutes after sunrise Tuesday and streaked into space to kick off a secrecy-shrouded mission.

Powered by a Russian-built RD-180 first stage engine and five Northrop Grumman strap-on solid-fuel boosters, the Atlas 5 roared to life at 6:45 a.m. EDT and majestically climbed away from pad 41 at the Cape Canaveral Space Force Station atop 2.7 million pounds of thrust.

Putting on a spectacular early morning show, the five strap-ons boosted the rocket and its payload out of the lower atmosphere and then fell away one minute and 45 seconds after liftoff.

The ascent continued on the power of its first stage RD-180 engine but as usual with classified launches, ULA ended its live webcast before the Atlas 5's second stage took over the ascent.

The rest of the flight was carried out in secrecy with no details provided about the duration of the first stage "burn" or subsequent firings of the upper stage Aerojet Rocketdyne Centaur engine. But the Space Force released a statement later

in the day saying the payload was released in the proper orbit about seven hours after liftoff.

<https://www.cbsnews.com/news/atlas-5-rocket-us-space-force-mission/>

## **Singapore, US sign civil nuclear cooperation pact**

*Hindustan Times, July 31, 2024*

The United States and Singapore signed an agreement Wednesday to “deepen” cooperation on the peaceful use of nuclear energy as the city-state considers alternative power sources to cut carbon emissions.

Singapore, a regional financial centre and a key player in the global semiconductor industry, is currently reliant on oil and natural gas.

It is studying options, including nuclear power, to meet its target of net-zero carbon emissions by 2050.

US Secretary of State Antony Blinken and his Singaporean counterpart Vivian Balakrishnan signed the “123 Agreements” on civil nuclear cooperation during a visit by Washington’s top diplomat as part of his latest swing to Asia.

The 123 Agreements, named after their section in the US Atomic Energy Act, are critical for investment by US nuclear companies, which are wary of running afoul of laws related to proliferation.

“This agreement builds on the long-standing civil nuclear collaboration between United States and Singapore and outlines a comprehensive framework to deepen peaceful nuclear cooperation based on a mutual commitment to nuclear nonproliferation,” both countries said in a joint statement.

<https://www.hindustantimes.com/world-news/us-news/singapore-us-sign-civil-nuclear-cooperation-pact-101722406024188.html>

## **F. West Asia**

### **Iran**

## **Iran army’s air defense force to get new radars, missile interceptors: Cmdr.**

*IRNA, July 21, 2024*

Brigadier General Alireza Sabahifard visited the different parts, sites and radar positions of the West Air Defense Zone and NezamAli Maleki Air Defense Unit and evaluated the level of combat readiness and operational capability of the units.

During his visit, Sabahifard told a group of commanders and employees that the Air Defense Force, as Iran’s main defense system, is playing an effective role in improving the country’s armed forces combat power.

Nowadays, the Islamic Republic of Iran is a safe and secure region, he said.

<https://en.irna.ir/news/85544379/Iran-army-s-air-defense-force-to-get-new-radars-missile-interceptors>

## **Maritime search, rescue, security exercise kicks off in Iran’s Bandar Anzali**

*IRNA, July 22, 2024*

Captain Abbas Hassani said in an interview with IRNA that Iranian and Russian vessels took part in the exercise to increase preparations for potential maritime incidents.

According to the official, in addition to the Iranian armed forces, representatives from the Caspian Sea countries, including the Republic of Azerbaijan and the Russian Federation, are supervising the various stages of this exercise.

The purpose of this exercise is to promote interactions and cooperation between the



maritime apparatuses of the Islamic Republic of Iran and other countries bordering the Caspian Sea, he said, adding that the littoral states do not tolerate the presence of ultra-regional countries in this region.

Hassani also stated that the four-day exercise includes a coastal phase as well as a tactical phase.

The naval and air forces of the Islamic Republic of Iran and the Russian Federation carried out firefighting operations and rescue of the injured personnel as well as the removal of the damage caused on the commercial vessel based on the schedule of the 2024 Hybrid Maritime Search, Rescue and Security Exercise.

According to Captain Hassani, after receiving the emergency message of the ship that had caught fire, the area of operation was first identified and searched by the helicopters of the Iranian Navy, and then the rocket launcher carrier "Separ" dispatched the vessels stationed in the area to carry out firefighting operations.

<https://en.irna.ir/news/85545239/Maritime-search-rescue-security-exercise-kicks-off-in-Iran-s>

### **Israel**

#### **Israel shoots down a missile fired from Yemen hours after a deadly Israeli strike on Houthi rebels**

*AP, July 21, 2024*

The Israeli military said it intercepted a missile fired from Yemen early Sunday, hours after Israeli warplanes struck several Houthi targets in the Arabian Peninsula country.

The Israeli airstrikes — in response to a deadly Houthi drone strike on Tel Aviv — were the first time Israel is known to have responded to repeated Houthi attacks throughout its nine-month war against Hamas. The burst of violence between the distant enemies has threatened to open a new front as Israel battles a series of Iranian proxies across the region.

The Israeli army late Saturday confirmed the airstrikes in the western Yemeni port city of

Hodeidah, a Houthi stronghold and crucial entry point for aid and other supplies. It said the strikes, carried out by dozens of aircraft, including U.S.-made F-15 and F-35 warplanes, were a response to hundreds of Houthi attacks.

The Health Ministry in Yemen said the Israeli strikes killed six people and wounded 83 others, many with severe burns from a major fire. Another three people were missing, the ministry said in a statement shared by the Houthi-run al-Masirah TV.

<https://apnews.com/article/israel-hamas-gaza-war-houthis-hezbollah-iran-ddd11628677424d5fc21985c4764e22b>

#### **Israel military says it intercepts missile, Yemen's Houthi rebels confirm targeting Eilat**

*France 24, July 21, 2024*

The Israeli military said Sunday it intercepted a missile fired from Yemen towards the Red Sea resort town of Eilat, after Israel bombed a port held by the country's Houthi rebels.

"The projectile did not cross into Israeli territory. Rocket and missile sirens were sounded following the possibility of falling shrapnel," a military statement said, two days after a Houthi drone strike killed one person in Tel Aviv.

Yemen's Iran-backed Houthis later confirmed they had targeted Israel's resort city of Eilat with multiple ballistic missiles to avenge Saturday's Israeli strike on the Yemeni port of Hodeidah.

The strikes on the vital port, which triggered a raging fire and plumes of black smoke, are the first claimed by Israel in the Arabian peninsula's poorest country, about 2,000 kilometres away, analysts said. Israel targeted the port after one person was killed in a Houthi drone attack on Tel Aviv.

<https://www.france24.com/en/middle-east/20240721-israel-military-says-it-intercepts-missile-yemen-s-houthi-rebels-confirm-targeting-eilat>

## Yemen

### Yemen's Houthi rebels launch two missile attacks targeting ships in Red Sea

*Business Standard, July 17, 2024*

Two attacks by Yemen's Houthi rebels targeted ships in the Red Sea on Monday as a new US aircraft carrier approached the region to provide security for the key international trade route that has been under assault since the Israel-Hamas war erupted nine months ago.

Three small Houthi vessels, two of which were crewed and another uncrewed, attacked the Panama-flagged and Israeli-owned MT Bently I off the coast of Al Hudaydah, Yemen, according to British and American authorities.

The reported unmanned small craft collided with the vessel twice and the 2 manned small craft fired at the vessel," the British military's United Kingdom Maritime Trade Operations centre reported. The vessel conducted self-protection measures, after 15 minutes the small craft aborted the attack."

The captain later reported three separate waves of missile attacks that exploded in close proximity to the vessel.

Later on Monday, in a separate incident off the same coast, the MT Chios Lion, a Liberian-flagged and Marshall Islands-owned oil tanker, was attacked by an uncrewed Houthi aerial vehicle, which impacted on the port side causing some damage and light smoke, the UKMTO said.

Both ships and all crew were reported safe, the UKMTO said in a warning to mariners.

Late Monday, the Houthis claimed responsibility for the attacks on Bently I and Chios Lion.

[https://www.business-standard.com/world-news/yemen-s-houthi-rebels-launch-two-missile-attacks-targeting-ships-in-red-sea-124071700065\\_1.html](https://www.business-standard.com/world-news/yemen-s-houthi-rebels-launch-two-missile-attacks-targeting-ships-in-red-sea-124071700065_1.html)

## Lebanon

### Israel, Hezbollah Exchange Deadly Fire Amid Calls For Restraint After Golan Attack

*NDTV World, July 30, 2024*

Israel and Hezbollah exchanged deadly fire on Tuesday, following a rocket attack from Lebanon on the Golan Heights that killed 12 children over the weekend and sent regional tensions soaring.

The strike on the Druze Arab town of Majdal Shams in the Israeli-annexed Golan Heights on Saturday, whose victims were aged between 10 and 16, was blamed by Israel and the United States on Lebanon's Hezbollah, but the Iran-backed group has denied any connection to the attack.

During a visit Monday to Majdal Shams, Israeli Prime Minister Benjamin Netanyahu vowed a "severe response", raising fears yet again that the Gaza war could spill over into a wider regional conflagration, despite international appeals for calm.

Israeli medics on Tuesday said one civilian, a 30-year-old man, was killed following a rocket attack on the northern kibbutz of HaGoshrim.

The Israeli army meanwhile reported its forces were "striking the sources of fire", which were in Lebanon.

It had said earlier that it struck around 10 Hezbollah targets overnight in seven different areas of south Lebanon, killing one fighter from the Iran-backed group.

Hezbollah said on Tuesday that it had fired a salvo of Katyusha rockets at a military headquarters in the village of Beit Hillel, in response to "the Israeli enemy's attack on the town of Jibchit, which resulted in civilian casualties".

Lebanon's official National News Agency had reported a strike in the Jibchit area that caused "major damage".

<https://www.ndtv.com/world-news/israel-hezbollah-exchange-deadly-fire-amid-calls-for-restraint-after-golan-attack-6225391>

### ***The United Arab Emirates***

## **Deployment of UAE's Mirage fighters bombers in China raises concerns in US**

*The Times of India, July 25, 2024*

The United Arab Emirates (UAE) Air Force and China's People's Liberation Army Air Force (PLAAF) held a second joint exercise "Falcon Shield" in Xinjiang province which has raised concerns in the West, particularly the US.

The satellite imagery, provided by the International Institute for Strategic Studies (IISS), of China and UAE's military exercise revealed that Abu Dhabi had deployed Mirage 2000-9 fighter bombers in Beijing and also more than one.

The deployment of fighters is seen as a new sign of closeness with China, raising concerns over Chinese access to Western military aircraft.

It is worth noting that the Mirage 2000 aircraft are stationed separately from Chinese aircraft at Hotan Airport and this type of aircraft is also operated by the Taiwanese air force.

The Falcon Shield marks the second edition. The first edition had already raised alarms among some Western countries and regional allies in Indo-Pacific, seen as China's effort to expand its influence in the UAE and the Middle East.

<https://timesofindia.indiatimes.com/world/china/deployment-of-uaes-mirage-fighters-bombers-in-china-raises-concerns-in-us/articleshow/112018957.cms>

### ***G. East Asia***

## **US, Japan, Australia and India announce efforts to boost maritime security**

*Voice of America, July 29, 2024*

The United States, Australia, India and Japan announced a series of measures Monday to boost maritime security and voiced concern about intimidation and dangerous actions in the South China Sea.

Japanese Foreign Minister Yoko Kamikawa told reporters that the international order is becoming increasingly uncertain amid Russia's continued aggression against Ukraine, North Korea ballistic missile launches and attempts to use force to change the status quo in the East and South China Seas.

Kamikawa spoke alongside U.S. Secretary of State Antony Blinken, Australian Foreign Minister Penny Wong and Indian Foreign Minister Subrahmanyam Jaishankar after hosting the group for talks in Tokyo.

Blinken said that in addition to bolstering maritime security and freedom of navigation, the group would also work to bolster security for key undersea cables and collaborate on disaster relief efforts.

<https://www.voanews.com/a/quad-foreign-ministers-meet-in-tokyo-with-eye-on-china/7716640.html>

## **Japan signed contract to supply US with missiles for Patriot PAC-3 missile defense systems**

*AzerNews, July 29, 2024*

The Japanese Ministry of Defense has signed the first contract to supply the United States with missiles for the American-developed Patriot PAC-3 missile defense systems. This is intended to replenish the reserves of the US army,

which are seriously declining due to the transfer of such weapons to Ukraine, Azernews reports.

According to the Japanese military, the contract amount is about 3 billion yen (about \$ 20 million at the current exchange rate). The number of missiles transferred to the United States is not specified.

Patriot PAC-3 missile defense systems and missiles are manufactured in Japan by Mitsubishi Heavy Industries Heavy Engineering Corporation under an American license. Back in December 2023, the Japanese government allowed their sale to the United States on the condition that these weapons would not be directly transferred to Ukraine without Tokyo's sanction.

A joint document on the results of the meeting of the heads of foreign policy and military departments of the United States and Japan held in Tokyo on July 28 according to the formula "2+2" stated that the two countries would study the issue of joint production of military equipment.

Specifically, AMRAAM air-to-air missiles with a flight range from 105 to 180 km, depending on the modification, as well as missiles for Patriot PAC-3 missile defense systems were named.

<https://www.azernews.az/region/229269.html>

### **Japan to sell \$19m in Patriot missiles to U.S.**

*Nikkei News, July 30, 2024*

Japan will sell an undisclosed number of Japanese-made Patriot missiles to the U.S. for 3 billion yen (\$19 million) to help replenish American stockpiles that have been running low after boosting Ukraine's air defenses.

The agreement, announced by Japan's Acquisition, Technology & Logistics Agency (ATLA) on Sunday, comes seven months after Japan decided to transfer some of the Self-Defense Forces' (SDF) existing Patriots at the request of the Biden administration.

An ATLA official declined to comment on how many missiles were being sold, but a former Pentagon official with knowledge of the negotiations said the number was around 10. The SDF will sell the standard PAC-3 missiles to the U.S. military "soon," according to ATLA.

An acronym for "Phased Array Tracking Radar to Intercept on Target," the Patriot missile is the U.S. Army's most advanced air defense system, according to the Congressional Research Service. It is capable of detecting and shooting down incoming missiles.

In the U.S., the radar and ground systems are produced by RTX, formerly Raytheon Technologies, while the interceptor missiles are manufactured by Lockheed Martin.

Japan's Mitsubishi Heavy Industries produces around 30 missiles a year for the Air Self-Defense Force. The SDF currently possesses three types of Patriot missiles: the PAC-2, the PAC-3 and the more advanced PAC-3 MSE, which is short for Missile Segment Enhancement. An advanced PAC-3 missile is typically valued at around \$4 million.

<https://asia.nikkei.com/Politics/Defense/Japan-to-sell-19m-in-Patriot-missiles-to-U.S>

### **US-Japan security talks focus on bolstering military cooperation, underscores threat from China**

*AP, July 29, 2024*

Japanese and U.S. defense chiefs and top diplomats agreed to further bolster their military cooperation by upgrading the command and control of U.S. forces in the East Asian country and strengthening American-licensed missile production there, describing the rising threat from China as "the greatest strategic challenge."

Secretary of State Antony Blinken and Defense Secretary Lloyd Austin joined their Japanese counterparts, Yoko Kamikawa and Minoru Kihara, at the Japan-U.S. Security Consultative



Committee in Tokyo, known as “2+2” security talks where they reaffirmed their bilateral alliance following President Joe Biden’s withdrawal from the November presidential race.

Japan is home to more than 50,000 U.S. troops, but the commander for the U.S. Forces Japan headquartered in Yokota in the western suburbs of Tokyo, tasked with managing their bases, has no commanding authority. Instead, instructions come from the U.S. Indo-Pacific Command in Hawaii. The plans will give the USFJ greater capability while still reporting to INDOPACOM.

The command upgrade “will be the most significant change to the U.S. Forces Japan since its creation and one of the strongest improvements in our military ties with Japan in 70 years,” Austin said. “These new operational capabilities and responsibilities will advance our collective deterrence.”

<https://apnews.com/article/japan-us-military-command-missile-china-4e97f4cb01cfef7b6db8fb1a5df771e4>

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