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Cosmic Explorers: Launch Sites of the World

Where Rockets Begin Their Journey

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Contents

Introduction

Chapter 01: The Discovery of Launch Sites of the World

Chapter 02: Key Characteristics of Launch Sites of the World

Chapter 03: The Science Behind Launch Sites of the World

Chapter 04: Observation and Measurement of Launch Sites of the World

Chapter 05: Important Features of Launch Sites of the World

Chapter 06: Launch Sites of the World in Context

Chapter 07: Challenges and Mysteries of Launch Sites of the World

Chapter 08: Future Directions in Launch Sites of the World Research

Chapter 09: Fun Facts and Trivia About Launch Sites of the World

Chapter 10: Conclusion: The Significance of Launch Sites of the World

Conclusion

This free sample contains the Introduction and Chapter 1. The complete book contains the full contents above.

Introduction

This chapter presents a survey of the rocket launch sites of the world. Some of these sites are known as spaceports or cosmodromes, the dedicated ports from which spacecraft depart for orbit and beyond.

Operational date - the period of years of launch activities

Heaviest rocket launched - total mass at lift-off

Hokkaido Spaceport (HOSPO), Taiki, Hokkaido, Japan (expansion of the Taiki Multi-Purpose Aerospace Park, used by Interstellar Technologies and Space Waker)

Note that some European countries operate spaceports in Africa, South America, or other equatorial regions.

Some Russian-controlled launch sites are listed as being in Asia. Note that some Russian cosmodromes appear in this section, some in the section Asia. Spaceport Sweden, Kiruna

Sutherland spaceport, Scotland, UK Was formally approved by the Scotland Highland Council in August 2020

El Hierro Launch Centre, Canary Islands, Spain

Please delete items or move them to the table above with appropriate data and references. Atlantic Spaceport Complex, Newfoundland.

Spaceport Washington, Moses Lake, Washington This project was proposed in 2005 by a small real estate brokerage firm operating from an office in Renton, Washington, and has since proven to have been a scam. The principal party - Mr. Andy Shin Fong Chen, CEO of ASPI Group, LLC - was charged with fraud by the U.S.

Securities and Exchange Commission on 15 March 2017. No licensing was ever issued by any local, state or Federal government agency, nor was any construction ever initiated. Starbase Louisiana, Pecan Island, Louisiana - planned SpaceX spaceport for Starship launches, with construction expected to begin in 2027.

Roosevelt Roads Naval Station - at a former Naval station in Puerto Rico, the local redevelopment authority, in December 2024, issued a request for proposal for a vertical space launch site on 66.17 acres, at Roosevelt Roads Naval Station site. Cape York Peninsula, Queensland. Space Centre Australia secured land for main site facilities for space launch, located 43km east of

Weipa, close to RAAF Scherger in 2023. Final approvals may come under

Mokwiri Aboriginal Corporation.

Previously a Cape York Space Agency was established by the government to develop a facility for Ukrainian Zenit launches at Weipa. However, traditional owners from Cape York Land Council blocked the proposal. Space Centre Australia, secondary site, at Utingu, known as Punsand Bay in Bamaga, which comes under the council of the Torres Strait Island Region, and is said to be one of the closest facilities to equatorial launch access in the Asia Pacific region. Christmas Island, Australian external territory.

Launch sites within a country are sorted chronologically according to start of operations

Location - Name of launch site (sometimes also province etc.)

Number of rocket launches - the total number of launches, including failed launches

Highest achieved altitude - height in km above launch site (unless orbital)

SSLV Launch Complex, Thoothukudi district, Tamil Nadu, India. Iran, Chabahar Space Center

Cape Breton Spaceport (aka Cape Breton Space Centre), Nova Scotia

Site planned 1997 by the Asia Pacific Space Centre, but did not go ahead due to insufficient backing. Japan Aerospace Exploration Agency (JAXA) conducted Phase I of a High Speed Flight Demonstration (HSFD) at Aeon Field on Christmas Island in 2002.

Spaceport Earth: The Reinvention of Spaceflight Spaceport Earth: The Reinvention of Spaceflight - categories | Overlook Press

The Goddard Rocket Launching Site is a National Historic Landmark commemorating the launch site of the world's first successful liquid-fueled rocket. Dr. Robert H.

The complex is part of the Eglin AFB overwater range that provides 86,500 square miles of overwater airspace that is jointly used for a variety of test and evaluation activities and training exercises. Range operations rely on land-based radar and electro-optical time- space-position-information systems to monitor and transfer test data to the Central Control Facility on Eglin AFB. These instrumentation systems, located on Santa Rosa Island and other locations provide coverage for test and evaluation activities in the Gulf of Mexico.

The use of Santa Rosa Island (SRI) is evolving due to changes in threats to national security and the effects of hurricanes over the past decade. The SRI complex is used for Expanded Surf Zone Testing/Training, SABRE Mine Clearing Testing, Beach Obstacle Clearing and Neutralization, Small Boat Obscurant Testing, Expanded OA-HITL Tower Testing, Live Fire, Expanded Special Operations Training, Amphibious Assaults, and Expanded LCAC Training/ Testing. Operational sites on SRI include the following locations:

A third launching site, is now located on the Coffeen Nature Preserve, a Sierra Club property east of Destin, Florida, featured a concrete inclined launch ramp. Steam-powered and portable ramps were also tested at this site. All of the Eglin launchings were directed south to the Gulf of Mexico. The targets were buoys placed at measured distances, up to 150 miles, to which the headings and range of the guidance system were adjusted.

From 1959 through 1960, the BOMARC A underwent continual testing at site A-15, flying against various drone aircraft. In the early 1960s testing continued with the BOMARC B model. Designated the IM-99B, this missile underwent its inaugural service test on 13 April 13, 1960. On 3 March 1961, an IM-99B demonstrated the ability to intercept a target at a range of over 400 miles at an altitude of over 80,000 feet.

The test program for BOMARC A and B concluded in August 1963 after nearly 150 launches. BOMARC B launchings continued into the 1970s as each of the USAF and Canadian Air Defense Missile Squadrons took turns conducting missile shoots. Both the military and NASA have used SRI to support launch of atmospheric sounding rockets in support of their programs.

The Recent Past on Eglin Air Force Base

Okaloosa County listings at National Register of Historic Places

Former World War II missile test launch facility home to diverse sand pine trails

The signing of the declaration is celebrated in the Abbey each year on 6 April, an event that now coincides with Tartan Day in the US.)

Chapter 01: The Discovery of Launch Sites of the World

Under construction by NordSpace

To thank countries which especially contributed to the campaign's success, Egypt donated four temples; the Temple of Dendur was moved to the Metropolitan Museum of Art in New York City, the Temple of Debod to the Parque del Oeste in Madrid, the Temple of Taffeh to the Rijksmuseum van Oudheden in Leiden, and the Temple of Ellesyia to Museo Egizio in Turin. The project cost US$80 million (equivalent to $312.6 million in 2025), about $40 million of which was collected from 50 countries.

This resulted in the excavation and recording of hundreds of sites, the recovery of thousands of objects, as well as the salvage and relocation to higher ground of several important temples. The most famous of these are the temple complexes of Abu Simbel and Philae. The campaign ended in 1980 and was considered a success. The project's success led to other safeguarding campaigns, such as saving Venice and its lagoon in Italy, the ruins of Mohenjo-daro in Pakistan, and the Borobodur Temple Compounds in Indonesia.

The 1972 Convention at Law-Ref.org - Fully indexed and crosslinked with other documents

The following is a table of spaceports with a documented achieved launch to orbit.

The first purpose-built rocket range on Earth was not built for spaceflight at all, but for weapons testing at Peenemunde on the Baltic coast of Germany, where the Army rocket team assembled test stands, a measurement hall, and tracking cameras in the late 1930s. When the war ended, the equipment, the engineers, and the habit of building dedicated launch facilities were carried abroad: to White Sands in the New Mexico desert, where captured V-2 rockets flew from a crude pad ringed by bunkers, and later to the Atlantic coast of Florida.

The choice of Cape Canaveral in 1949 shows the logic that has governed siting ever since. The committee that selected it wanted empty land, a warm climate, and above all open water downrange, so that long test shots could fly over the ocean instead of over towns. The site sat beside a missile testing station, it was close to the Army's

Aberdeen Proving Ground supply lines, and the Banana River Naval Air Station offered a ready base of operations. From that inheritance grew the busiest

spaceport in the Western world.

Baikonur, founded in 1955 in the Kazakh steppe, answered a different set of constraints: secrecy and land. The Soviet Union wanted its missile and space work far from foreign eyes, and the vast empty grasslands east of the Aral Sea offered overflight corridors thousands of kilometers long and a rail line to bring in steel, propellant, and workers. The settlement, the pads, and the assembly buildings were all built from scratch at Tyuratam, and the name Baikonur was borrowed from a small town hundreds of kilometers away, a deliberate confusion that became permanent.

Other nations followed the same arithmetic with their own accents. France searched the Sahara for its early test range at Hammaguir and Colomb-Bechar, Sweden put a sounding rocket range above the Arctic Circle at Kiruna to study the aurora, Australia and Britain agreed in 1946 to build the Woomera range in the South Australian desert, and Norway built the Andoya site on an island above the Arctic Circle. Each of these was a surveyors' decision first and a national ambition second, and the remnants of the earliest pads are now studied by historians the way earlier generations studied cathedral foundations.

A quieter thread of discovery runs through the sounding rocket ranges, the small sites from which research rockets rather than orbital boosters fly. Places like Wallops Island on the Virginia coast, Andoya in Norway, and the

Kagoshima range at Uchinoura in southern Japan were laid out for brief scientific flights, yet they trained the range crews, the recovery teams, and the weather officers who later ran the great orbital sites. The genealogy of a big spaceport almost always runs back to one of these small beginnings.

What the discovery era settled, and what later chapters return to, is that a launch site is chosen rather than found. The natural world offers no readymade spaceports; every candidate is a compromise between physics, geography, and politics. The handful of places that have hosted orbital flight are less than two hundred in total across seven decades, and each of them began with a study, a survey, and a decision that the advantages of that patch of ground outweighed the costs of building everything else upon it.

The American orbital program inherited its Florida range from the missile builders, and the story of the early years is one of conversion rather than construction. The pad that launched the first American satellite in 1958 had been built for a test missile program; the tracking network that followed it to orbit was improvised from telephone lines and borrowed ships; and the decision to keep going at the Cape, rather than build elsewhere, was made

one mission at a time. Great sites accrete rather than appear, and the Cape is the clearest example.

China's story adds the longest conversion of all. Its first orbital flight in 1970 rose from Jiuquan, deep in the Gobi corridor, a site chosen when secrecy outweighed efficiency and roads had to be built ahead of the rockets. Two generations later, the coastal site at Wenchang, on an island in Hainan, reversed the arithmetic entirely, placing boosters within reach of shipping lanes and civil industry, a quiet admission that the discovery era's rules had changed with the country.

Australia's Woomera range, agreed in 1946 and built in the South Australian desert, was the first site shared as an alliance, a British program on Australian ground with American instruments. It hosted sounding rockets, weapons trials, and early satellite tests for a quarter century and trained crews who later worked at other ranges on other continents. The site's decline by the 1970s is part of the discovery era's story too: ranges live only as long as the ambitions and budgets that built them.

The pattern that emerges from the first two decades is that launch sites followed the missile programs rather than the scientific ones. Every major orbital range of the 1950s began as a weapons test facility, because the vehicles, the tracking, and the safety machinery were already being built for weapons, and the first satellites rode out on the same rails. The civilian spaceports of later decades, from Kourou to Tanegashima to Wenchang, were the first generation of sites chosen for spaceflight on its own terms, and their siting reflects priorities their predecessors never had.

The strangest entry in the discovery era is the Italian San Marco project, which turned two old oil barges into an equatorial launch platform off the coast of Kenya in the 1960s. By fixing a pad on the sea where the rotation bonus was greatest, Italian engineers launched their satellites from a site no map owned, flying the first orbital mission from a floating platform in 1967. The idea was decades early, and it is now cited as an ancestor of every sea-based and offshore launch scheme since.

Europe's road to Kourou also belongs in the discovery record, because the range that seems most inevitable was the most improvised. When the Sahara ranges closed in 1968, French teams moved an entire spaceport across an ocean in under three years, pouring the first equatorial pads in a malarial coastal plain near a penal colony's ruins. The site's early years were a running improvisation, and the tidy modern visitor complex gives no hint of the swamp it replaced.

Some of the newest sites in the world are conversions of missile bases, closing the circle the discovery era opened. Russia's Yasny complex occupies a former strategic rocket division's silo fields in the southern Urals, where converted ICBMs now carry satellites under commercial contracts, and the American Mid-Atlantic Regional Spaceport at Wallops and several western commercial pads likewise stand on old military ground. The story that began with weapons testers borrowing the desert has ended with missile bases becoming freight yards for orbit.

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ABOUT THE AUTHOR

Aira Astralis is a science writer specializing in astronomy and space exploration. Her work spans the full breadth of humanity's relationship with the cosmos -- from the earliest naked-eye observations to the engineering marvels of modern space missions.

Her books are built on a foundation of primary sources: peer-reviewed research, mission archives, and direct engagement with the scientific community. She writes for readers who want to understand not just what we know about the universe, but how we came to know it.

She believes that the most important frontier is not out there but in the gap between what scientists discover and what the public understands. Her books exist to close that gap.