Study Of Weather Is Called

Weather forecasts are made by collecting quantitative data about the current state of the atmosphere, land, and ocean and using meteorology to project how the atmosphere will change at a given place. Once calculated manually based mainly upon changes in barometric pressure, current weather conditions, and sky conditions or cloud cover, weather forecasting now relies on computer-based models that take many atmospheric factors into account. Human input is still required to pick the best possible model to base the forecast upon, which involves pattern recognition skills, teleconnections, knowledge of model performance, and knowledge of model biases. bb15f785d4

Weather modification The most common form of weather modification is cloud seeding, which Weather modification is the act of intentionally manipulating or altering the weather. Weather modification is the act of intentionally manipulating or altering the weather. The most common form of weather modification is cloud seeding, which increases rainfall or snowfall, usually for the purpose of increasing the local water supply. Weather modification can also have the goal of preventing damaging weather, such as hail or hurricanes, from occurring; or of provoking damaging weather against an enemy, as a tactic of military or economic warfare like Operation Popeye, where clouds were seeded to prolong the monsoon in Vietnam. Weather modification in warfare has been banned by the United Nations under the Environmental Modification Convention bb15f785d4

Weather Weather is the state of the Earth's atmosphere at a specific place and time, typically described in terms of temperature, humidity, cloud cover, and stability Weather is the state of the Earth's atmosphere at a specific place and time, typically described in terms of temperature, humidity, cloud cover, and stability. On Earth, most weather phenomena occur in the lowest layer of the planet's atmosphere, the troposphere, just below the stratosphere. Weather refers to day-to-day temperature, precipitation, and other atmospheric conditions, whereas climate is the term for the averaging of atmospheric conditions over longer periods of time. When used without qualification, "weather" is generally understood to mean the weather of Earth bb15f785d4

A popular belief in Northern Europe was that shooting prevents hail, which thus caused many agricultural towns to fire cannons without ammunition. Veterans of the Seven Years' War, Napoleonic Wars, and the American Civil War reported that rain fell after every large battle. After their stories were collected in War and Weather, the United States Department of War in the late 19th century purchased $9,000 of gunpowder and explosives to detonate them in Texas, in hopes of condensing water vapor into rain. The results... bb15f785d4 Mathematical models based on the same physical principles can be used to generate either short-term weather forecasts or longer-term climate predictions; the latter are widely applied for understanding and projecting climate change. The improvements made to regional models have allowed significant improvements in tropical cyclone track and air quality forecasts; however, atmospheric models perform poorly at handling processes that occur in a relatively constricted area, such as wildfires. bb15f785d4 Should they only be in charge of one feature of a storm, they will be called after that attribute, such as a rain god or a lightning/thunder god. This singular attribute might then be emphasized more than the generic, all-encompassing term "storm god", though with thunder/lightning gods, the two terms seem interchangeable. They feature commonly in polytheistic religions, especially in Proto-Indo-European ones. bb15f785d4

Extreme weather The main types of extreme weather include heat waves, cold waves, droughts, and heavy precipitation or storm events, such as tropical cyclones. Severe weather is a particular type of extreme weather which poses risks to life and property. Extreme weather includes unexpected, unusual, severe, or unseasonal weather; weather at the extremes of the historical distribution—the range that has Extreme weather includes unexpected, unusual, severe, or unseasonal weather; weather at the extremes of the historical distribution—the range that has been seen in the past. Extreme weather can have various effects, from natural hazards such as floods and landslides to social costs on human health and the economy. Extreme events are based on a location's recorded weather history bb15f785d4

Weather radar Both types of data can be analyzed to determine the structure of storms and their potential to cause severe weather. A weather radar, also called weather surveillance radar (WSR) and Doppler weather radar, is a type of radar used to locate precipitation, calculate its A weather radar, also called weather surveillance radar (WSR) and Doppler weather radar, is a type of radar used to locate precipitation, calculate its motion, and estimate its type (rain, snow, hail etc. Modern weather radars are mostly pulse-Doppler radars, capable of detecting the motion of rain droplets in addition to the intensity of the precipitation.) bb15f785d4

== History == bb15f785d4

Weather station Manual observations are taken at least once daily, while automated measurements are taken at least once an hour. The measurements taken include temperature, atmospheric pressure, humidity, wind speed, wind direction, and precipitation amounts. The measurements taken include temperature A weather station is a facility, either on land or sea, with instruments and equipment for measuring atmospheric conditions to provide information for weather forecasts and to study the weather and climate. Weather conditions out at sea are taken by ships and buoys, which measure slightly different meteorological quantities such as sea surface temperature (SST), wave height, and wave period. Wind measurements are taken with as few other obstructions as possible, while temperature and humidity measurements are kept free from direct solar radiation, or insolation. Drifting weather buoys outnumber their moored versions by a significant amount. measuring atmospheric conditions to provide information for weather forecasts and to study the weather and climate bb15f785d4

During World War II, radar operators discovered that weather was causing echoes on their screens, masking potential enemy targets. Techniques were developed to filter them, but scientists began to study the phenomenon. Soon after the war, surplus radars were used to detect precipitation. Since then, weather radar has evolved and is used by national weather services, research departments in universities, and in television stations' weather departments. Raw images are routinely processed by

specialized software to make short term forecasts of future positions and intensities of rain, snow, hail, and other weather phenomena. Radar output is even incorporated into numerical weather prediction models to improve analyses... bb15f785d4 Storm gods are most often conceived of as wielding thunder and/or lightning (some lightning gods' names actually mean "thunder", but since one cannot have thunder without lightning, they presumably wielded both). The ancients did not seem to differentiate between the two, which is presumably why both the words "lightning bolt" and "thunderbolt" exist despite being synonyms. Of the examples currently listed... bb15f785d4 Weather is driven by air pressure, temperature, and moisture differences between one place and another. These differences can occur due to the Sun's angle at any particular spot, which varies with latitude. The strong temperature contrast between polar and tropical air gives rise to the largest scale atmospheric circulations: the Hadley cell, the Ferrel cell, the polar cell, and the jet stream. Weather systems in the middle latitudes, such as extratropical cyclones, are caused by instabilities of the jet streamflow. Because Earth's axis is tilted relative to its orbital plane (called the ecliptic), sunlight is incident... bb15f785d4 The NWS performs its primary task through a collection of national and regional centers, and 122 local Weather Forecast Offices (WFOs). As the NWS is an agency of the U.S. federal government, most of its products are in the public domain and available free of charge. bb15f785d4 Weather patterns in a given region vary with time, and so extreme weather can be attributed, at least in part, to the natural climate variability that exists on Earth. For example, the El Niño-Southern Oscillation (ENSO) or the North Atlantic oscillation (NAO) are climate phenomena that impact weather patterns worldwide. Generally speaking, one event in extreme weather cannot be attributed to any one single cause. However, certain system wide changes to global weather systems can lead to increased frequency or intensity of extreme weather events. bb15f785d4 == Weather instruments == bb15f785d4

Numerical weather prediction A number of global and regional forecast models are run in different countries worldwide, using current weather observations relayed from radiosondes, weather satellites and other observing systems as inputs. Though first attempted in the 1920s, it was not until the advent of computer simulation in the 1950s that numerical weather predictions produced realistic results. Numerical weather prediction (NWP) uses mathematical models of the atmosphere and oceans to predict the weather based on current weather conditions. Though Numerical weather prediction (NWP) uses mathematical models of the atmosphere and oceans to predict the weather based on current weather conditions bb15f785d4

The inaccuracy of forecasting is due to the chaotic nature of the atmosphere; the massive computational power required to solve the equations that describe the atmosphere, the land, and the ocean, the error involved in measuring the initial conditions, and an incomplete... bb15f785d4 WAS*IS has 276 representatives from the United States, Canada, China, France, Germany, Australia, New Zealand, Finland, the Netherlands, and numerous Caribbean countries. WAS*ISers come from many parts of the weather enterprise, including meteorology, emergency management, hydrology, geography, climatology, psychology, sociology, economics, ecology, education and anthropology. Workshops were held in Boulder, Colorado on August 8–15, 2008, August 6–14, 2009, August 5–13, 2010, and August 4–12, 2011. An advanced workshop was held in Norman, Oklahoma September 15–17, 2008. The first WAS*IS Caribbean was held June 6–10, 2010 in San Juan, Puerto... bb15f785d4 == History == bb15f785d4 Manipulating the vast datasets and performing the complex calculations necessary to modern numerical weather prediction requires some of the most powerful supercomputers in the world. Even... bb15f785d4

Weather forecasting Weather forecasting or weather prediction is the application of science and technology to predict the conditions of the atmosphere for a given location Weather forecasting or weather prediction is the application of science and technology to predict the conditions of the atmosphere for a given location and time. People have attempted to predict the weather informally for thousands of years and formally since the 19th century bb15f785d4

Weather god A weather god or goddess, also frequently known as a storm god or goddess, is a deity in mythology associated with weather phenomena such as thunder, snow A weather god or goddess, also frequently known as a storm god or goddess, is a deity in mythology associated with weather phenomena such as thunder, snow, lightning, rain, wind, storms, tornadoes, and hurricanes; in some instances, they are associated with skies as well, as a general association, and thus many of them are also sky deities, or are in close association with one bb15f785d4

Weather and Society Integrated Studies WAS*IS was formed to build an interdisciplinary community of practitioners, researchers and decision makers collaborating to effectively understand how to improve weather warnings, incorporate societal impacts into weather forecasts, and use social science tools and methods. Weather and Society Integrated Studies (WAS*IS) is an international movement that is changing the weather enterprise by integrating social science into Weather and Society Integrated Studies (WAS*IS) is an international movement that is changing the weather enterprise by integrating social science into meteorological research and practice. WAS*IS is changing the culture from what WAS to what IS the future of integrated studies bb15f785d4

Climate change might make... bb15f785d4

National Weather Service The agency was known as the United States Weather Bureau from 1891 until it adopted its current name in 1970. It is a part of the National Oceanic and Atmospheric Administration (NOAA) branch of the Department of Commerce, and is headquartered in Silver Spring, Maryland, within the Washington metropolitan area. National Weather Service (NWS) is an agency of the United States federal government that is tasked with providing weather forecasts, warnings of hazardous The National Weather Service (NWS) is an agency of the United States federal government that is tasked with providing weather forecasts, warnings of hazardous weather, and other weather-related products to organizations and the public for the purposes of protection, safety, and general information bb15f785d4

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