FROM THE OLD FARMER'S ALMANAC

TWO-INGREDIENT NATURAL SHAMPOO

"WE'RE ROWING TO EUROPE!"





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See what we have in store for our September issue!





AUGUST

Holidays, Fun Facts, and More



EYE ON THE SKY

MOON PHASES

First Quarter:

Aug. 7, at 1:31 P.M. EDT

Full Sturgeon

Moon: Aug. 15, at 8:29 A.M. EDT

Last Quarter: Aug.

23, at 10:56 A.M. FDT

New Moon: Aug. 30, at 6:37 A.M. EDT

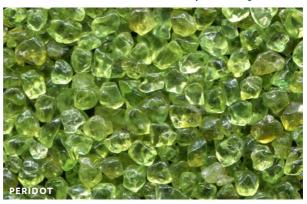


TAP FOR MORE ABOUT AUGUST'S FULL MOON

ABOUT THIS MONTH

This month was named to honor the first Roman emperor (and grandnephew of Julius Caesar), Augustus Caesar (63 B.C.—A.D. 14).

Birthstones: Peridot, Sardonyx, and Spinel



Birth Month Flowers: Gladiolus and Poppy









HOLIDAY HAPPENINGS

Aug. 5: Civic Holiday (parts of Canada) Aug. 19: National Aviation Day Aug. 26: Women's Equality Day

WACKY TIMES

Aug. 1–7: International
Clown Week
Aug. 8: National Sneak
Some Zucchini Onto Your
Neighbors' Porch Day
Aug. 10: National
S'mores Day
Aug 12: Vinyl Record Day
Aug. 13: International
Left-Handers Day
Aug. 17: International
Geocaching Day
Aug. 17: World
Honeybee Day
Aug. 25: Kiss-and-

Make-Up Day

RHYME TIME

Some gaudy prince has stayed here overnight: For look. the roadside gleams in splendor bright With goldembroidered plumes that decked his train. While stars of purple amethyst, like rain,

Have fallen from his robes. -"Goldenrod and Asters," by James Berry Bensel, American poet (1856–86)

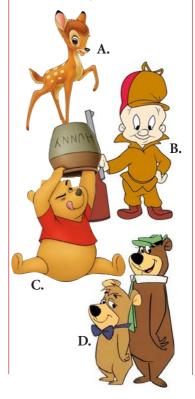
Answer: A.

Walt Disney had allowed the use of the film character for the Cooperative Forest Fire Prevention program for 1 year.

AUGUST'S QUIZ

On August 9, 1944, Smokey Bear became the U.S. Forest Service's symbol for preventing forest fires. He replaced which figure?

- A. Bambi
- B. Elmer Fudd
- C. Winnie the Pooh
- **D.** Yogi Bear (at right, below, with Boo-Boo)



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BEST DAYS TO DO THINGS

These August dates, deemed to be propitious in astrology, are based on the astrological passage of the Moon. However, consider all indicators before making any major decisions. –*Celeste Longacre*

ON THE FARM

Breed animals: 6-8

Castrate animals: 13-15

Cut hay: 18-20

Purchase animals: 26, 27

Set eggs: 13, 14, 22-24

Slaughter livestock: 6–8

Wean animals: 17, 22

AROUND THE HOUSE

Bake: 26, 27

Brew: 6-8

Can, pickle, or make sauerkraut:

16, 17

Demolish: 6-8

Dry fruit/vegetables/meat: 18–20

End projects: 29



Lay shingles: 1, 28, 29

Make jams/jellies: 16, 17

Paint: 21, 22

Start projects: 2

Wash floors: 16, 17

Wash windows: 18-20

IN THE GARDEN

Destroy pests and weeds: 18-20

Graft or pollinate: 26, 27

Harvest aboveground crops: 2, 3

Harvest belowground crops: 21, 22

Mow to decrease growth: 19, 20

Mow to increase growth: 6–8

Pick fruit: 2, 3, 30, 31

Plant aboveground crops: 7, 8

Plant belowground crops: 17, 26, 27

Prune to discourage growth: 18–20

Prune to encourage growth: 9, 10

OUTDOORS

Begin logging: 11, 12

Go camping: 9, 10

Go fishing: 1–15, 30, 31

Set posts or pour concrete: 11, 12

PERSONAL

Advertise to sell: 6–8

Ask for a loan: 21, 22

Begin diet to lose weight: 17, 22

Begin diet to gain weight: 3, 8

Buy a home: 6–8

Color hair: 21, 22

Cut hair to discourage growth: 21,

22

Cut hair to encourage growth: 4, 5

Get married: 4, 5

Have dental care: 2, 3, 30, 31

Move (house/household): 23–25

Perm hair: 13–15

Quit smoking: 17, 22

Straighten hair: 9, 10

Travel for pleasure: 1, 28, 29

Wean children: 17, 22





Use the August dates shown in the Moon's Astrological Place calendar below to find the best days for the following garden tasks:

PLANT, TRANSPLANT, AND GRAFT: Cancer, Scorpio, Pisces, or Taurus

HARVEST: Aries, Leo, Sagittarius, Gemini, or Aquarius

GARDENING BY THE MOON'S SIGN

BUILD/FIX FENCES OR GARDEN BEDS: Capricorn

CONTROL INSECT PESTS, PLOW, AND WEED: Aries, Gemini, Leo, Sagittarius, or Aquarius

PRUNE: Aries, Leo, or Sagittarius. During a waxing Moon, pruning encourages growth; during a waning Moon, it discourages growth.

TAP FOR MERCURY IN RETROGRADE DATES

TAP FOR **AUGUST** MOON PHASES

THE MOON'S ASTROLOGICAL PLACE IN AUGUST

1 Leo	9 Sagittarius	17 Pisces	25 Gemini
2 Virgo	10 Sagittarius	18 Aries	26 Cancer
3 Virgo	11 Capricorn	19 Aries	27 Cancer
4 Libra	12 Capricorn	20 Aries	28 Leo
5 Libra	13 Aquarius	21 Taurus	29 Leo
6 Scorpio	14 Aquarius	22 Taurus	30 Virgo
7 Scorpio	15 Aquarius	23 Gemini	31 Virgo
8 Scornio	16 Pisces	24 Gemini	

MERCURY IN RETROGRADE

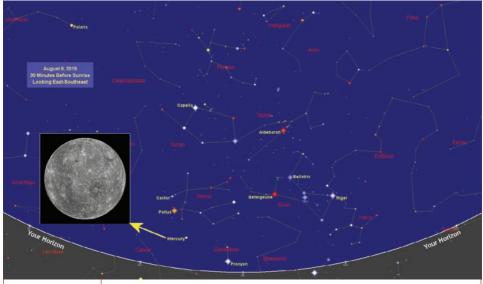
Sometimes the other planets appear to be traveling backward through the zodiac; this is an illusion. We call this illusion *retrograde motion*.

Mercury's retrograde periods can cause our plans to go awry. However, this is an excellent time to reflect on the past. Intuition is high during these periods, and coincidences can be extraordinary.

When Mercury is retrograde, remain flexible, allow extra time for travel, and avoid signing contracts. Review projects and plans at these times, but wait until Mercury is direct again to make any final decisions.

In 2019 to come, Mercury's retrograde periods will be during **July 7–August 2** and **October 31–November 20.** –*Celeste Longacre*







TAP TO GET A PRINTABLE SKY MAP



TAP FOR THE ALMANAC'S **SUNRISE AND** SUNSET **CALCULATOR**

MEET MERCURY, THE 800°F FLEET-FOOTED MESSENGER

"Pass the sunblock! Can't vou see, It's really bright," Cried Mercury ... -Mr. R.'s World of Science (online) Mercury's brave close to the sun lost in its glare how quickly it runs -KamTime (online)

oems devoted to the planet Mercury are few and far between, but they share common themes. They typically refer either to Mercury's extreme relationship with the Sun or its speedy movement through the sky—or both. Mercury is closer to the Sun than any other planet and thus endures a surface temperature of up to 800°F. Sunblock, indeed! And Mercury is fast! It whips around the Sun once every 88 days, compared to our Earth's 365 days. The ancient Romans noted how swiftly Mercury moves across the sky



and named it for the fleet-footed Messenger of the Gods.

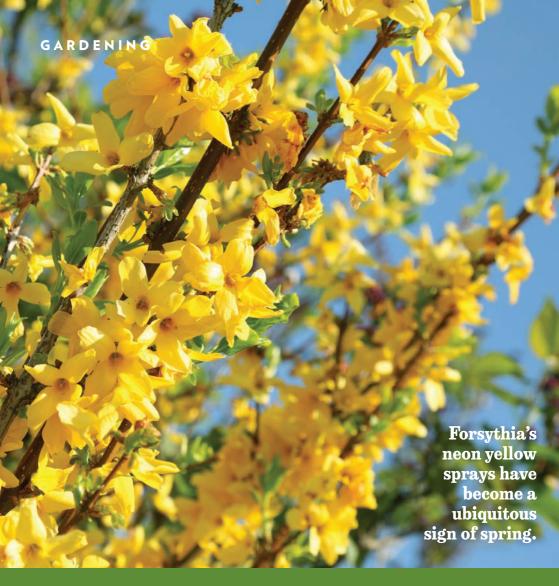
It's a testament to the exquisite observing skills of ancient astronomers that they ever noticed Mercury at all. From our Earthly perspective, the innermost planet never ventures very far from the Sun; you have to know exactly when and where to look. One such brief window of opportunity occurs just before sunrise on August 9. That's when Mercury reaches its Greatest Western Elongation—as far from the Sun's glare as it ever gets. A couple of mornings before or after August 9 will still allow a decent view.

Consult the Almanac's Sunrise and Sunset Calculator to find the time of sunrise for your location. Go outside 30 minutes before sunrise and look to the east-southeast, low in the sky. With sunrise not far away, the sky will be brightening quickly, so don't be late! As our Sky Map shows, there are several bright stars in the area, in addition to the planet Mercury. Betelgeuse, Rigel, Procyon, and Capella are all approximately the same brightness as Mercury. Castor and Pollux, in the constellation Gemini, are the bright stars nearest to Mercury, but they are both slightly dimmer than the elusive planet.

xploratory spacecraft have visited Mercury only twice. In 1974–75, NASA's *Mariner 10* probe made three flybys of Mercury, sending back the first close-up photos and discovering that the tiny planet has its own magnetic field, a finding that surprised researchers. Then, in 2011, NASA's *MESSENGER* (MErcury Surface, Space ENvironment, GEochemistry, and Ranging) spacecraft reached Mercury and went into orbit around it. *MESSENGER* spent the next 4 years collecting science data and making thousands of high-resolution photographs of Mercury. The *MESSENGER* photo reproduced on this month's sky map shows how closely Mercury resembles the Moon, at least on its surface.

A third spacecraft is currently on its way to Mercury. *BepiColombo* is a collaboration between the European Space Agency and the Japanese Space Agency. The mission carries two separate probes, which will separate from one another once *BepiColombo* reaches Mercury in 2025.

Fortunately, you won't have to wait that long to undertake your own exploration of Mercury. You merely have to wake up before dawn on August 9 (or thereabouts) to see the hot and speedy planet for yourself. —*Jeff Detray*



Tramps and Stowaways

Many of our best-loved plants are not natives at all. . .



Daylilies are a living testimony to human history.

f America is a melting pot, so are her flower gardens—to an extent that few of us realize. Ever since the first Europeans landed on our shores, foreign plants have come along, intentionally or otherwise. Many have changed the very look of the land. Here are a few.

Forsythia's neon yellow sprays have become a ubiquitous sign of spring across much of North America. Long before it came here and before it had been introduced in Europe, it grew wild on the South China coast.

It was not until the

mid-18th century that fortune—Robert Fortune, specifically found it. A plant hunter for England's Royal Horticultural Society, Fortune disguised himself in native garb and pigtails to scour the country for new plants. In 1846, he carried a sample of forsythia (aka "golden bells") to London, where it was named after William Forsyth, a founding member of the society and superintendent of the Royal Gardens at Kensington.

Forsythia made its way to America in about 1860, sailing from England to Massachusetts, although it did not appear in nursery catalogs until the end of the century. Today, it thrives on most of the continent, faring less well in the Gulf states and the Southwest.

Orange-red daylilies arrived in Europe from China during the 17th century and were widely cultivated in the New World. Today, persistent patches of Hemerocallis fulva ("beautiful for a day") blaze in deserted American cellar holes and form brilliant borders along country roads. They are a living testimony to human history, for Hemerocallis spreads almost solely



Foxglove was known to be a potent heart medicine.

by division. Sometimes it's transplanted by gardeners. Sometimes it sends out underground rhizomes. Sometimes it appears unexpectedly, the offspring of bits and pieces torn and tumbled along by snowplows or road graders.

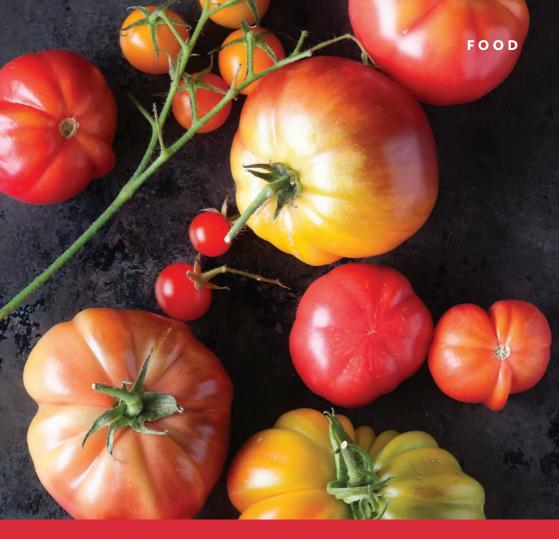
In ancient times, the daylily was valued as both food (baked into a custard with rich milk, butter, and salt) and medicine (in the form of a poultice applied to burns). Daylily buds are edible, but today we use the proud plant to hold soil on hillsides and brighten those corners of the garden where a rugged

pest and disease-resistant perennial is needed.

Foxglove (Digitalis purpurea, or "purple fingers") is native to Europe, where it has grown for centuries. When English and German settlers came to America, they brought foxglove seeds and scattered them on the edges of their homesteads. It did not take long for this plant to escape the coastal settlements and begin the trek westward. In 1809, when John Bradbury set out to collect wildflowers in the newly acquired Louisiana Purchase, he could trace the paths of the pioneers in the trails of foxglove that they had left behind.

As early as 1768, foxglove was known to be a potent heart medicine. Its leaves and seeds contain digitalis, making it the primary source of the eponymous commercial drug. You do not have to be a cardiac patient to appreciate the beauty of its purple masses of bell flowers. Like other beautiful horticultural immigrants, it adds one more dash of color and variety to its adopted land.

-Cynthia Van Hazinga



Tantalizing Tomato Recipes

As the crazy, hazy days of summer near an end, you'll want to make plans for your garden's bountiful harvest. We've got a few delicious ideas for your tomatoes right here.



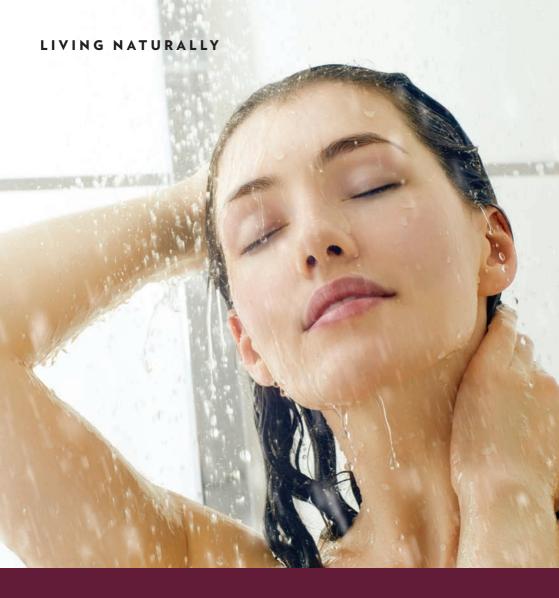












Two-Ingredient Natural Shampoo

ne day early last spring, I counted the ingredients of three shampoos and two conditioners sitting on a bathroom shelf. Each contained at least 20 ingredients many of them unpronounceable and three or four of them had suspected toxins. Two contained fragrances that made me sneeze. On that day, I decided to try an easy two-ingredient method that I'd read about for years but that had always seemed too hokey. I've never looked back.

BAKING SODA AND CIDER VINEGAR

My new strategy calls for an alkaline washing ingredient—baking soda—followed by an acidic rinse of apple cider vinegar. That's it!

To my surprise, the two-ingredient method worked well, leaving my hair clean, shiny, and more manageable than any of the hundred products or combinations of products that I've used through the decades.

This was cheap, easy, remarkably effective, and probably a lot safer. I always have these ingredients on hand for various household uses.

Like me, you probably won't believe that the baking soda method will actually clean your hair, so you'll want to give it your first try on a vacation or weekend day when you have the time to repeat with your usual routine if you don't like the results.

I've seen dozens of "recipes" for this natural approach to hair care. I don't think that the exact proportions matter. I just fiddled around until I found what worked well for me.

HERE'S HOW I DO IT

• I pour a bit less than half a cup of baking soda into a small bowl and 1/2 cup of cider vinegar into another. Then I add a couple of cups of warm

water to each bowl.

- I pour the dissolved baking soda solution through my wet hair. Then I rinse my hair well.
- Finally, I pour the vinegar solution through. I usually don't rinse it out, but you can. Either way, the vinegar smell disappears within minutes

It took me a while to get used to the idea that just pouring a solution through my hair with no scrubbing or lathering could get it clean, but it really does.

I haven't found a need for conditioning, but I haven't tested my new shampoo through a dry New England winter yet. Advocates of this hair care method suggest adding a few drops of olive, sesame, castor or some other oil to the washing solution for frizz or static control.

-Margaret Boyles





"We're Rowing to Europe!"

Two intrepid—or crazy—fishermen from Brooklyn once set out to do the impossible.

Of medium stature, both men had spent their lives at sea and were lean and muscular.

egend says that early in 1896, wealthy Police Gazette publisher Richard Fox offered a \$10,000 prize to anyone who could cross the ocean without sails or steam. No contemporary accounts confirm this reward, but there is no doubt that George Harbo, 30, and Frank Samuelsen, 26, who lived in Brooklyn, New York, and dredged oysters and clams off the New Jersey coast for a living, were the first to row across the Atlantic, setting a speed record that stood for 114 years.

Of medium stature, both men had spent their lives at sea and were lean and muscular. Harbo had studied navigation at a sailors' school in his native town, Sandar, in Norway. He had gone to sea at 16, and after 2 years on long voyages, had come to America. He had since sailed on coasters and fishing vessels, and had earned a pilot's license for New York harbor. Samuelsen, from Farsund, Norway, was Harbo's friend and clamming partner.

The two men spent all of their spare time laying out plans for the boat and equipment and building up their stamina by rowing daily along the shore. Because they were unable to finance the building of the boat, Mr. Fox offered to help. He hired William Seaman, a famous boatbuilder from Sea Bright, New Jersey, for the job.

Named *Fox* in honor of their benefactor, the boat he crafted was built of cedar, with oak timbers and copper fastenings. It was 18 feet 4 inches long and 5 feet wide with an 8-inch draft, weighed 200 pounds, and was pointed at both ends like a whaleboat. At each end

were watertight air tanks and tanks of drinking water.

Onboard supplies included 60 gallons of water; 6 gallons of kerosene for a small stove set up in the bow; 2 gallons of signal oil; 12 green, red, and white signals that burned at night; 100 pounds of sea biscuits; quantities of canned meats; 250 eggs; and 9 pounds of coffee—all calculated to last 2 months.

Most of the equipment in the boat was lashed down to prevent loss if the boat rolled over. Other gear included five pairs of oars; a compass, quadrant, and chart; canvas sea anchor; and an air mattress. Harbo and Samuelsen took only the clothing they were wearing, plus oilskins. The boat was not fitted with a mast or sail, and if all of the oars were lost or broken before

"We'll see you in France or in heaven!" the rowers shouted.

the journey ended, they would be at the mercy of the sea.

he *Fox* was moored in a slip near the barge office at the Battery, the southernmost tip of Manhattan Island, On Iune 6, 1896, a crowd of 2,000 gathered at the Battery to see the men off. It was a perfect day for an adventure, but instead of a festive sendoff, there was an air of gloom about the crowd as if they were sending the two brave men to their graves. The New York Herald commented, "Someone ought to see that this idiocy is stopped."

At 5:00 P.M., when the evening tide began to turn, the boat was rowed out from the slip and headed down the bay, followed by the cheers and good wishes of those

who stood around the seawall. Some wept for the men.

"We'll see you in France or in heaven!" the rowers shouted. As the boat pulled down the bay and through the Narrows, harbor and boat whistles saluted them.

In calm weather, the boat moved steadily along, but when Harbo and Samuelsen stopped to eat, they found the stove unwilling to stay lit even in a mild breeze. They had forgotten to find the most practical way to light and keep their stove going. They had very little coffee and ate their eggs raw.

They rowed at an even pace, hoping to put their boat into the east-flowing Gulf Stream as quickly as possible.

Their schedule called for 18 hours of rowing a day, 1 hour for rest and eating, and 5 hours of sleep. They hoped to average 3 miles per hour to prevent their provisions from running out within their allotted time of 60 days. During the crossing, both men pulled with two oars, except at night—when they stood watches of 3½ hours each, one man sleeping while the other continued to row.

n the fourth night, something heavy shook the boat. When Harbo peered overboard, he saw the shining back of a monstrous shark. Hoping to frighten the beast off, Harbo banged him with his oar—only to have the shark tear the oar from his hand. For a full day and night, the shark swam with the boat, hoping for a storm to serve him his meal. Unperturbed, the oarsmen pulled for

"The wind commenced to blow and the sea to roll mountain high."

Europe using one of their spare oars.

After a week, the Canadian schooner *Jessie*, bound for New York, signaled to the rowboat. The captain invited them on board, but the pair declined. "We're rowing to Europe!" Samuelsen shouted.

On July 1, on the Grand Banks, they met a Norwegian fishing ship. This captain also invited them on board, and, not having had a hot meal in 3 weeks, this time the tired men accepted. With renewed strength, they continued their journey.

Harbo wrote in his log a few days later: "The wind commenced to blow and the sea to roll mountain high." The storm raged for 2 days. At first, they tried to pull against the storm, holding their direction due east into the wind. But soon they lashed their oars securely, tied

their specially devised safety lines to their waists, and just hung on.

After hours of tossing, they sighted a mammoth wave rolling toward them. "God preserve us!" Samuelsen prayed. The *Fox* folded over beneath the huge carpet of water, and the men were flung free, holding their breath for what seemed an eternity until they surfaced. Luckily, their lifelines held.

ulling themselves in to the boat, they were then able to grab the handrails specially fitted to the keel for such an emergency, right the boat, and start bailing frantically. They soon had the boat safe, but they had lost whatever had not been tied down, including most of the food, half of the water. the stove, the signal lights, and the oil. The

extra oars had held fast. Removing their clothes and setting them up to dry, they rowed naked to keep warm. The winds now were pushing them gently toward their target.

The food that remained had to be carefully rationed. At the end of 5 days, when their grub was down to a few biscuits, a full-rigged bark hove into sight. It was the Zito of Lavick from the country of their birth. The captain could not be convinced that they were not survivors of some shipwreck. They were taken on board and given a huge feast, which they ate greedily before resting for 3 hours and then setting off again with new supplies.

They were now halfway to Europe.

On July 24, they calculated they were about 400 miles from the first sight of land. Their

"He was a hardy breed," a newspaper commented. "We will not see his like again."

backs ached and their hands and forearms were swollen painfully, for they rowed without gloves.

Hitting a stretch of good weather, the men rowed steadily, averaging 65 miles per day. In his log, Harbo wrote: "On August l, about 2 hours before daylight, we sighted a light. We found it to be the lighthouse on Bishop's Rock."

They had miraculously reached the Scilly Islands, the southernmost tip of England, 3,250 miles from New York. They landed at St. Mary's, hardly able to walk on cramped legs. A doctor examined both men and found them fit. except for sea boils on Samuelsen's hands. The American consul at St. Mary's could hardly believe their story—no one had ever rowed across the Atlantic!

Their ordeal was not over yet. Their specified

destination was Le Havre, 250 miles farther. After a 16-hour sleep, they pushed the *Fox* off once more.

n August 7, greeted by thousands, the men staggered out of their boat, hardly able to walk on stiffened legs. Their hands were so swollen that they could not shake hands with anyone. Oddly, after braving the brutal weather of the ocean without illness, they both developed colds on the first day ashore.

With their boat,
Harbo and Samuelsen
toured the music halls
of Europe. At first, the
public rushed to see the
intrepid rowers and their
craft, but the attraction
wore thin. Returning
to their native Norway,
they found that many
newspapers carped
that the trip had not

been made under the Norwegian flag.

Finally, Harbo and Samuelsen lashed the *Fox* on a steamer and returned to America.

For a while, the adventurers toured the vaudeville circuit and headlined at Manhattan's Huber's Museum, making \$20 a day per man and per boat. But, as in Europe, their popularity soon waned and they returned to clam digging.

Homesick, Samuelsen eventually returned to his family's farm in Farsund, Norway, which is where he died in 1946. "He was a hardy breed," a newspaper commented. "We will not see his like again." George Harbo remained in New York, returning to work as a New York harbor pilot. In 1908, he contracted pneumonia and died at age 44, leaving a large family.

-Raymond Schuessler



TAP TO FIND OUT THE WEATHER HISTORY OF THE DAY

LOVE ALL
THINGS
WEATHER?
TAP FOR THE
WEATHER
FOLKLORE
OF THE DAY

SO MANY AUGUST FOGS, SO MANY WINTER MISTS.

HOW WE MAKE OUR PREDICTIONS

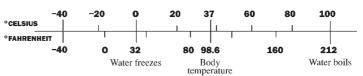
We derive our weather forecasts from a secret formula that was devised by the founder of this Almanac, Robert B. Thomas, in 1792. Thomas believed that weather on Earth was influenced by sunspots, which are magnetic storms on the surface of the Sun.

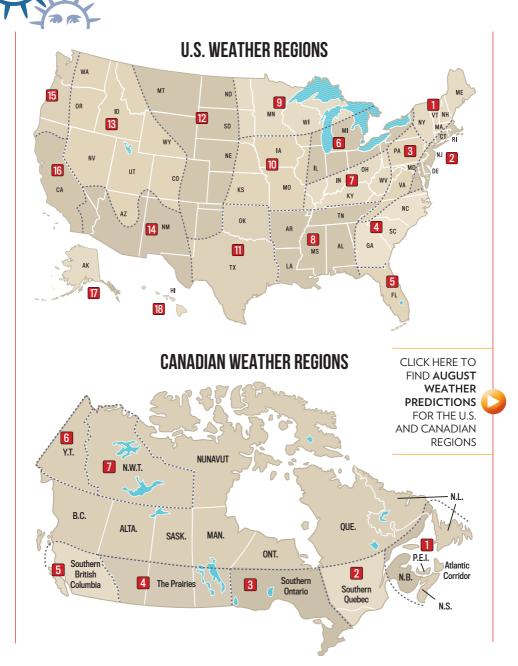
Over the years, we have refined and enhanced this formula with state-of-the-art technology and modern scientific calculations. We employ three scientific disciplines to make our long-range predictions: solar science, the study of sunspots and other solar activity; climatology, the study of prevailing weather patterns; and meteorology, the study of the atmosphere. We predict weather trends and events by comparing solar patterns and historical weather conditions with current solar activity.

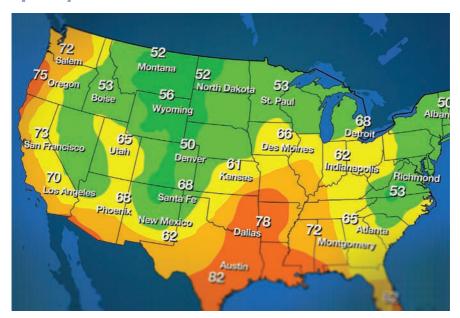
Our forecasts emphasize temperature and precipitation deviations from averages, or normals. These are based on 30-year statistical averages prepared by government meteorological agencies and updated every 10 years. Most-recent tabulations span the period 1981 through 2010.

We believe that nothing in the universe happens haphazardly, that there is a cause-and-effect pattern to all phenomena. However, although neither we nor any other forecasters have as yet gained sufficient insight into the mysteries of the universe to predict the weather with total accuracy, our results are almost always very close to our traditional claim of 80 percent.

CELSIUS-FAHRENHEIT TABLE







WEATHER FORECASTING 101

Although our forecasts at The Old Farmer's Almanac are put together by weather professionals using scientific data just as they are elsewhere, the Almanac's methodology is significantly different. In this two-part series, we examine just these forecasting differences.

PART 2: HOW ALMANAC PREDICTIONS ARE MADE

here are several different methodologies and phenomena that can come into play in generating long-range forecasts, including:

1. Climate models: These are long-range computer-generated forecasts that are similar in concept to the short-range computer-generated forecasts that are a foundation of forecasts of weather over the upcoming days to weeks.

They use simplifications different from those of the short-range forecast models and are designed to forecast monthly and seasonal trends rather than day-to-day and hour-by-hour weather.

2. Teleconnections: These are patterns in the atmosphere that typically

persist from weeks to years and influence the temperatures, precipitation, storm tracks, and jet stream over large areas.

Think of a teleconnection as being like construction on an urban highway: It may impact the traffic flow for months (much as a teleconnection impacts the flow of the atmosphere), controlling the traffic flow completely and causing it to back up for miles during rush hour (much as a teleconnection can lead to a series of snowstorms), while at night causing traffic to slow down only through the construction zone (much as a teleconnection may not control the weather continuously, with dry periods occurring between the storms that it brings).

- **3. Analogs:** The concept behind analogs is that if we can find past weather patterns similar to the current one, the weather that follows may also be similar. Of course, these patterns are only similar and not exactly the same—if weather patterns were that simple, everyone would always have accurate long-range forecasts.
- **4. Solar cycles:** The most controversial of the four methodologies, the use of solar cycles is based on the concept that output from the Sun controls our weather. Most meteorologists and climatologists have scoffed at this idea, because changes in solar energy are tiny and they did not believe that these were large enough to affect the weather. But recent research has shown physical mechanisms by which these small changes in solar output can be magnified in the upper atmosphere and funneled downward to affect and even control the weather.

You might ask which of these methodologies we use here at *The Old Farmer's Almanac* to determine our long-range weather forecasts. The answer is that we use all of them to some extent.

We look at the climate model forecasts and consider them, although we count them less than the other inputs and, on average, our forecasts have been more accurate than those of the climate models.

We strongly consider the expected teleconnections, but our experience has been that the published forecasts of teleconnections made 6 months to 2 years in advance, which is what we need for our weather forecasts, are often incorrect. Instead, we believe that changes in solar activity strongly influence the phase and strength of the various teleconnections, and we use the solar cycle to forecast teleconnections.

The solar cycle is the predominant input that we consider in making our



long-range forecasts. Some studies have shown correlations between the length of a cycle and temperatures, or between the magnitude of a cycle and temperatures. But our methodology goes far beyond any simple correlations, finding analogs to each phase of the current cycle, determining the weather that prevailed in those analog periods, and making adjustments for differences between the analogs and for changes in the climate.

Our methodology has been developed over two centuries of use, with enhancements and refinements added as we have learned more about the physics of the atmosphere, interactions between the ocean—atmosphere system, teleconnections, space weather, and climate change and have had the ability to add computer technology and power to our research and methodology.

We are not always right, but we believe that verification studies show that our long-range forecasts are better than those from any other source.

In all of this, there is one thing of which you can be absolutely certain: We are always striving to refine our forecast methodology to make it even more accurate and useful than ever before.

-Michael Steinberg, Old Farmer's Almanac meteorologist



HUMOR ME

GRINS AND GROANS FROM THE ALMANAC



CREDIT WHERE CREDIT'S DUE

A rather rotund—as well as bankrupt—gentleman met up with one of his creditors on the street.

With a bow, the latter inquired, "And how do you do, Colonel?"

"Pretty well," was the reply, "I seem to be holding my own."

"And mine as well, I'm afraid," said the creditor.

A LIE?

A traveler at a coffeehouse was regaling some gentlemen with tales that generally strained credulity.

"And where did you say all of these wonders happened?" asked one listener.

"I can't exactly say," replied the traveler, "but somewhere in Europe, perhaps Russia."

Replied the other: "I should rather think It-a-ly."

COSTLY ADVICE

"Sir," said a barber to an attorney who was passing his door, "will you advise me on whether this is a good 7 shilling piece?"

The lawyer, pronouncing the piece good, deposited it in his pocket and added, with great gravity, "If you'll send your lad to my office, I'll return your 4 pence."

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