

Cornell Scientist's "Sunspot" Theory Sees No Early Relief For Southeast Drought

ITHACA, NY — A Cornell University scientist who uses the so-called sunspot theory to make long-term weather predictions sees no signs of early relief for the Southeast now suffering from the worst drought in a century.

Predicting the drought could linger into 1987, Douglas A. Paine says it may take another year for the current drought to break. Paine is a professor of atmospheric science and a leading proponent of the sunspot theory.

As for the Northeast, the drought that persisted for several years in a row, causing serious water shortages for major metropolitan areas last year, ended in the fall after hurricane Gloria swept through the region, Paine says.

"The Northeast is doing very well now, with reservoirs replenished with adequate water supplies," he points out.

Paine bases his projection for the Southeast on a controversial long-range weather forecasting technique that takes into account the waxing and waning of sunspot activity.

Using this theory, Cornell's Paine predicted as early as winter 1981 that severe drought would occur for several years in a row through 1986 for a significant part of the nation, including the Northeast and the region south of the Great Lakes to the Gulf Coast.

"Earlier drought projections based on this theory have been more or less on target," Paine says. "One surprise is that the

Northeast drought has shifted to the Southeast."

According to Paine, dark patches that appear on the sun — sunspots — increase and decrease in number periodically, ultimately affecting the weather patterns on Earth.

The current drought was in the making in the late 1970s when, according to Paine, the number of sunspots reached an unusually strong peak. A series of droughts hit much of the eastern United States during the first half of the 1980s.

A similar celestial event took place in the late 1950s, resulting in several successive years of severe drought in the Northeast that persisted into 1986, Paine explains.

The high level of sunspot activity of the late 1970s has diminished to a point where the number of sunspots is now minimal, a condition that will trigger normal precipitation in a year or two, Paine predicts.

The dark patches that appear on the surface of the sun are colossal magnetic storms raging within the incredibly hot gases shrouding the sun. In the process, the sun sends out more ultraviolet light to Earth.

Increased amounts of ultraviolet light create more ozone and heat in the stratosphere, an atmospheric layer about 30 miles above Earth.

The additional heat acts to decrease the exchange of air between the stratosphere and lowest atmospheric levels, reducing the number and intensity

of major storms in the East, Paine explains. Such storms account for a major share of the rain and snow east of the Mississippi.

"The stratosphere has been extremely stable over the eastern seaboard during the past few years, greatly diminishing the ability of storms to draw some of their energy out of the stratosphere," Paine points out.

The Cornell scientist believes that the degree of stability in the stratosphere may hold the key to the riddle as to why drought occurs.

Citing the prolonged dry spell in the Northeast in the 1960s, Paine notes that the ocean temperature off the Atlantic coast along the New England states at that time was two to five degrees Fahrenheit below normal. Back then, meteorologists blamed the colder-than-normal ocean temperature for the drought, a theory that has been generally accepted thus far.

But, Cornell's Paine questions the validity of that hypothesis. He points out that the ocean temperature off the Atlantic seaboard is now normal, yet the Southeast is suffering from a devastating drought.

"We (meteorologists) may have to look for additional causes of

drought," Paine argues, adding that his theory of the atmospheric stability in the stratosphere may play a role in causing droughts. Paine says he is monitoring the stability of the stratosphere, watching for signs of a break in the pattern.

Paine's sunspot theory for long-range weather forecasting has been a subject of debate among meteorological scientists. Many remain skeptical about the theory.

Nevertheless, the Cornell scientist is not throwing in the

towel. Using his theory, Paine predicts that the sunspot activity, which is now at its lowest ebb since last fall, will reach its next peak in 1992. Based on sunspot records dating back about 2,000 years, the number of sunspots varies about every 11 years.

Because Paine expects the number of sunspots in the early 1990s to be well below the peaks observed in the late 1950s and 1970s, he does not look for a return of drought conditions in the East during the next decade.

4-H Judging Teams

YORK, Pa. — Bigger beef, faster horses and woolier lambs will be judged at livestock shows across the country this summer by state 4-H judging teams who travel with The Pennsylvania State University's livestock judging teams.

The youth teams have received a \$5,000 endowment for travel expenses from the Pennsylvania Livestock Association, the Penn State Board of Trustees learned recently in a meeting at the University's York Campus.

The gift to the Pennsylvania Friends of 4-H will provide travel funds for state 4-H livestock, horse

and meats judging teams to participate and compete in regional and national contests. The 4-H program is a part of Penn State's Cooperative Extension Service.

Expenditures will be determined by the state 4-H director and will depend on the fund's annual earned income.

This year, in addition to county events and about six state events, teams of four 4-H members will travel with an adviser to national regional competitions in Louisville, Ky. and Kansas City, Mo.

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