

## RELIGION & PHILOSOPHY

ways too small. A South Carolina minister wrote in 1724 that his congregants "were forced to stand without the door, and others hang at the windows." Churches were usually the first institutions created on the frontier. Presbyterianism in the South grew from a few scattered churches early in the century to 45 in 1750. Immigrant Lutheran congregations mushroomed by 160 percent between 1740 and 1776.

Ordinary colonists simply had less narrow views of Christian doctrine than their pastors had, the authors conclude. Thus, the "indifferency" clergymen decried was simply a lack of concern for denominational differences. When Charles Woodmason, an Anglican priest in rural South Carolina in the 1760s, denounced the region's "infidels and Atheists," he meant that they were not Anglicans. Thriving Presbyterian, Baptist, and independent churches had formed, he noted unhappily, in every "Hole and Corner where they could raise Congregations."

### *Prayer and the President*

"The President as Preacher" by Albert Menendez, in *Church & State* (May 1982), 8120 Fenton St., Silver Spring, Md. 20910.

President Reagan's recent proclamation of a National Day of Prayer may seem to reflect the current surge of religious fundamentalism. But, writes Menendez, research director for Americans United for Separation of Church and State, the President was simply obeying the law—a law with a 200-year history behind it.

During the Revolutionary War, the Continental Congress assigned a number of national days of "public humiliation, fasting and prayer." The peace following Pennsylvania's Whiskey Rebellion in 1795 prompted George Washington to create an official day of thanksgiving. In 1808, Thomas Jefferson declined to comply with this tradition, citing the Constitution's proscription against the "intermeddling" of religious and civic affairs. Refusing petitions from religious leaders for a national prayer day, Jefferson observed that "every religious society has a right to determine for itself the times for [fasting and prayer]."

Jefferson's successor waffled. Though a staunch proponent of the separation of church and state, James Madison felt an allegiance to the presidential tradition and assigned several days "on which all who thought proper might unite in consecrating it to religious purposes, according to their faith and forms."

In 1832, Andrew Jackson drew reproach from Congress for refusing to declare a public day of fasting and prayer in response to a cholera epidemic. After bitter debate, Congress passed a resolution over Jackson's objection, recommending "fervent supplications to Almighty God that He will avert the Asiatic scourge."

Abraham Lincoln, a religious man but no churchgoer, was moved by the crisis of Civil War to declare nine separate days of penitence and prayer during his 49-month administration. To Lincoln, the "awful

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calamity of Civil War" was "a punishment inflicted upon us for our presumptuous sins."

Not all Presidents have felt so urgently the need for prayer. In 1953, notes Menendez, Dwight Eisenhower declared July 4 a National Day of Prayer, then spent the day "fishing, golfing and playing bridge."

Whether they like it or not, Presidents must now mix politics with religion at least one day a year. In 1952, Harry Truman signed into law a resolution mandating that the President "proclaim a suitable day each year, other than a Sunday, as a National Day of Prayer."

## SCIENCE & TECHNOLOGY

### *Is the Sun Shrinking?*

"The Shrinking Sun" by Diane Johnson, in *Mosaic* (Jan.-Feb. 1982), Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Scientists have agreed in recent years that the sun is not a placid place. It pulsates, erupts in storms, and is developing holes in its outer atmosphere. The sun, writes Johnson, a Colorado science writer, is an "unpredictable, middle-aged star." Some astronomers now think that it may also be a shrinking star, and that contention has sparked a fierce scientific controversy.

It began in 1979, when, after culling the records of London's Greenwich Observatory dating back to 1750, John A. Eddy of Colorado's High Altitude Observatory reached the startling conclusion that the sun might be shrinking at the rate of two "arc seconds" annually (one and a half meters per hour). Eddy knew his estimate was exaggerated—at that rate, the sun would disappear in 100,000 years. But the archives of the Naval Observatory in Washington, D.C. seemed to confirm it.

Critics, led by John H. Parkinson of London's University College, scoffed at Eddy's evidence. The Greenwich and Washington astronomers had measured the time it took for the sun to cross a fixed point in the sky: The quicker the transit, the smaller the sun. Unreliable instruments, subjective judgments, and the effects of air pollution all could have thrown off their data.

Meanwhile, Irwin Shapiro of MIT took another approach to the problem. Drawing on records of the time it took the planet Mercury to cross the sun in 24 cases since the 17th century, he put the sun's shrinkage at 0.15 arc seconds per century—an insignificant amount, possibly overstated by flaws in the data.

Other scientists tried to resolve the dispute by scrutinizing records on the duration of total solar eclipses—when the moon passes between the sun and Earth—during the past two centuries. Using observations gathered by Edmund Halley in England in 1715 and by legions of *Scientific American* subscribers in 1925, and comparing them to more recent