

## Mysticism: Psychiatric perspective

"Mysticism has become a significant social force in our time," says John Nemiah, president of the Group for the Advancement of Psychiatry. Therefore, his group has prepared a report on mysticism in the hope of shedding some light on its psychological causes and effects.

The report, "Mysticism: Spiritual Quest or Psychic Disorder," suggests, from an historical perspective, that the disposition of both individuals and groups to turn to mysticism is influenced by environmental factors. Social, cultural, economic, political and religious conditions all play a significant part in attracting individuals to mysticism and in determining the origin and fate of mystical movements. "Whatever form the mystical behavior takes," the authors say, "it implies repudiation of some important aspect of society. . . . The current disposition of some young people to turn to mysticism represents an effort by various groupings of them in a state of marginal mental health to defend against the stresses of a society which has disappointed them by offering them insufficient external challenge. Of those who chose the mystical way of life, it is hard to say which ones are moving toward conflict resolution and which toward psychic breakdown, but they are all to some extent engaged in an attack on their parents' standards as representative of the established social order."

Additional factors characteristic of our own day and culture are believed to encourage mystical practice. Among those cited are: the feeling of discouragement and powerlessness in the face of threatened nuclear holocaust; the generalized breakdown of social and ethical norms; the decline in authority of accepted religious teachings; and finally, the positive intellectual and material success of modern science that may have led many persons to seek experiences that transcend the wholly rational.

## Commercial poppy crop to come

Through various diplomatic actions the U. S. government has declared war on opium poppy growers around the world. Though such efforts have not been completely successful, and poppy-produced heroin still finds its way into this country, the war on poppies has had some serious side effects, including shortages of medically needed codeine and opium. In an attempt to reestablish the poppy balance, the government has now authorized commercial cultivation of the scarlet poppy. According to the Drug Enforcement Administration, this variety of poppy will be a rich source of powerful narcotic compounds but will not have the potential for abuse of the opium poppy. The scarlet poppy's heroin-producing ability is much less than that of the opium poppy. Even so, strict precautions will be taken to guard against its abuse. Barbed wire fences, a resident farmer or manager, daily perimeter inspections, instant access to police and, in some locations, chain fences and watchdogs will be required to protect the crops.

## The cooling campus

Moderation is catching on. A survey of 25,000 undergraduates, 25,000 graduate students and 25,000 faculty members on 400 campuses shows a major shift away from the liberal and radical attitudes of the 1960s. The trend is toward more moderate stances on things such as academic policy, race relations, the death penalty and the use of violence to achieve political goals. The survey, conducted by the Carnegie Council on Policy Studies in Higher Education, did note, however, that faculty members are becoming more militant, with more than two-thirds of them seeing circumstances in which faculty strikes would be a legitimate means of collective action.

*From the meeting of the Division for Planetary Sciences of the American Astronomical Society in Honolulu*

## A day on Uranus: Longer than you think

For more than four decades, a day on Uranus has been assumed to be about 10.8 hours long. Recent research, however, indicates that it may, in fact, be considerably longer.

In 1975, one group (Trauger, Roesler and Munch) calculated a 12.3-hour day, based on broadening of the 5281.8-angstrom Fraunhofer line (SN: 6/28/75, p. 410). Now Sethanne Hayes and Michael Belton of Kitt Peak National Observatory in Arizona report that a day on Uranus may actually be a far more earthlike 23 hours  $\pm$  2. Using the 4-meter telescope at Kitt Peak, they measured the planet's spectral-line "tilt," which indicates the rate at which its opposite limbs are advancing and receding. This was possible because, although Uranus is inclined about 98° on its axis, there is at present still an angle of about 25° between the planet's axis and the Earth-Uranus line. The rotational period, says Belton, was then calculated by plugging the tilt into the theory of a rotating body in hydrostatic equilibrium, given its observed optical and dynamic oblateness. The same technique, he says, indicates a period for Neptune of 22 hours  $\pm$  4.

Meanwhile, Charles Avis and Harlan Smith of the University of Texas, Jay Bergstralh of Jet Propulsion Laboratory and William Sandmann of Harvey Mudd University have jointly been working with the 6190-angstrom methane band (in ratio with Uranus's 5900-angstrom continuum to correct for earth-atmospheric effects). This band, says Smith, is more likely than earlier measurements in the bluer portion of the spectrum to show albedo variations that can be tracked as features rotating across the planet. Although no "hard" measurement of the planet's period has yet resulted, he says, the results are consistent with a period considerably longer than 10.8 hours, and probably about twice as long.

It is thus possible, points out Belton, that Earth, Mars, Uranus and Neptune may all have roughly similar periods. All four are believed composed primarily of "condensibles"—rock or ice in contrast to the hydrogen and methane of the two giants, Jupiter and Saturn, which spin more than twice as rapidly. Perhaps, he suggests, the stronger gravitational attraction of Jupiter and Saturn when they were forming enabled them to draw material from farther away, giving them greater angular momentum. Among the solid planets, therefore, Venus, with its 243-day period, becomes a standout oddity.

## A day on Venus: Battle of the tides

The reason Venus takes 243 days to rotate once on its axis—and does so backwards—may be a balance between solar tides in its solid crust and in its atmosphere, according to Anthony Dobrovolskis and Andrew Ingersoll of the California Institute of Technology.

The sun's pull on the crust creates a bulge at the subsolar point, but the planet's tendency to rotate moves the bulge beyond the sun-Venus line, creating a counter-torque which holds the bulge in place just past the line. Heat from the planet's surface, meanwhile, creates an atmospheric bulge which, due to the slow heat transfer in the dense "air," gets around to the other ("advancing") side of the line before dissipating. The authors maintain that, with a convective time constant in the lower atmosphere of three weeks or less, the atmospheric bulge is placed just right for the sun's torque on it to balance the opposing torque on the crust. Venus's odd rotational state, they say, is thus "the only stable configuration."