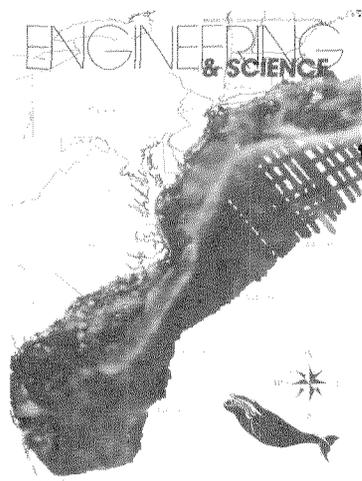


In This Issue



Animal Magnetism

On the cover — the geomagnetic field off the Atlantic coast in a false-color image created at the Jet Propulsion Laboratory from U. S. Geological Survey aeromagnetic data. Magnetic field values range from dark blue (low) to yellow (high). Sites where whales have beached themselves are represented by red crosses and dots (based on data from the Smithsonian Institution), plotted on a high-resolution digital representation of the shoreline. (The whale in the corner was drawn by human hands.)



Joseph Kirschvink, assistant professor of geobiology, has found a statistical correlation between whale strandings and magnetic lows

— the most remarkable of which can easily be seen here as the dark blue magnetic minima curving down from North Carolina and hitting the Georgia coast, precisely where 53 pilot whales have beached themselves. He explains this in "A Tale of Dead Whales," beginning on page 4, which was adapted from his January Watson Lecture.

Kirschvink earned two of his degrees at Caltech — a BS in biology and an MS in geology, both in 1975. After receiving his PhD from Princeton in 1979, he returned to Caltech in 1981. He was named a Presidential Young Investigator last year.

Luminous Birthday



The 75th birthday of Jesse Greenstein was the occasion for a symposium last October on low-luminosity stars. Greenstein, the DuBridge Professor of Astrophysics, Emeritus, has been a pioneer in the study of faint stars, especially white dwarfs, his most recent area of research in a long career. He came to Caltech in 1948 to create and develop the graduate school of astronomy in conjunction with the then new 200-inch Hale Telescope on Palomar Mountain, and he's been a much esteemed member of the Caltech community, as well as an internationally noted astronomer, ever since.

As such, Greenstein has lots of fans. Among them are Virginia Trimble and Judith Cohen, co-authors of long standing, who contributed the report on the birthday festivities (the science is in the report and the festivities are in the photos), "Some Faint Stars and a Bright One," beginning on page 10. Both received their PhDs from Caltech — Trimble in 1968, Cohen in 1971. Cohen is currently associate professor of astronomy here and was one of the conference organizers; Trimble is professor of physics at UC Irvine and is also visiting professor of astronomy at the University of Maryland.

Strange Moon

In introducing his Watson Lecture on "Io: Jupiter's Enigmatic Moon," Torrence Johnson dealt first with pronunciation — whether to call it "Ee-o," as most European languages would, or "Eye-o," as in standard American English. He quoted a JPL colleague, whose solution was not to pronounce it at all, but simply to spell it. While a printed article can avoid this problem, it should be noted that Johnson proceeded to spell it for the rest of his lecture.



Io is peculiar in ways other than its pronunciation — so weird, in fact, that science fiction has no need to embellish its features.

Johnson explains some of these features and what has recently been learned about them in his article beginning on page 15. He has been involved with the Galilean satellites ever since his doctoral thesis, currently maintaining that involvement as a senior research scientist at JPL and visiting associate professor of planetary science on campus. He is a member of the Voyager Imaging Team and Project Scientist for Galileo, the spacecraft that will be launched toward Jupiter and its moons next year.

Johnson's PhD is also from Caltech (1970) — making all of this issue's faculty authors Caltech alumni.

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