Math for all seasons

When the American Association for the Advancement of Science announced with considerable fanfare last year the 1992 debut of THE ONLINE JOURNAL OF CURRENT CLINICAL TRIALS, it was billed as the world's first peer-reviewed science journal available to subscribers electronically. What the organizers of this effort didn't know was that several such electronic journals already existed. One of these concerns the application of mathematics to geography.

SOLSTICE: AN ELECTRONIC JOURNAL OF GEOGRAPHY AND MATHEMATICS — published by Sandra Lach Arlinghaus of the Institute of Mathematical Geography, a small, independent research organization in Ann Arbor, Mich. — first appeared in 1990. Its two issues per year, published appropriately on the dates of the summer and winter solstices, go to about 50 individuals, who receive the journal free. Transmission costs for distributing the journal electronically over a computer network to all subscribers amount to less than $5 per issue, with the cost of printing passed on to the user. Libraries and other institutions that prefer printed copies pay for each issue, and those copies are generated from computer files only when needed.

"It's all very cheap, all environmentally sound," Arlinghaus says.

But getting the journal going wasn't easy, she remarks. The biggest production problem involved photographs and figures, which can't be transmitted electronically in the same, compact way as letters, numbers or even mathematical notation. At present, individuals wishing to see particular illustrations must obtain photocopies directly from the Institute of Mathematical Geography. Arlinghaus also admits that she has had trouble obtaining manuscripts for publication in this still-unconventional medium. But individuals who might initially have been skeptics "become more receptive when they see the actual product," she says.