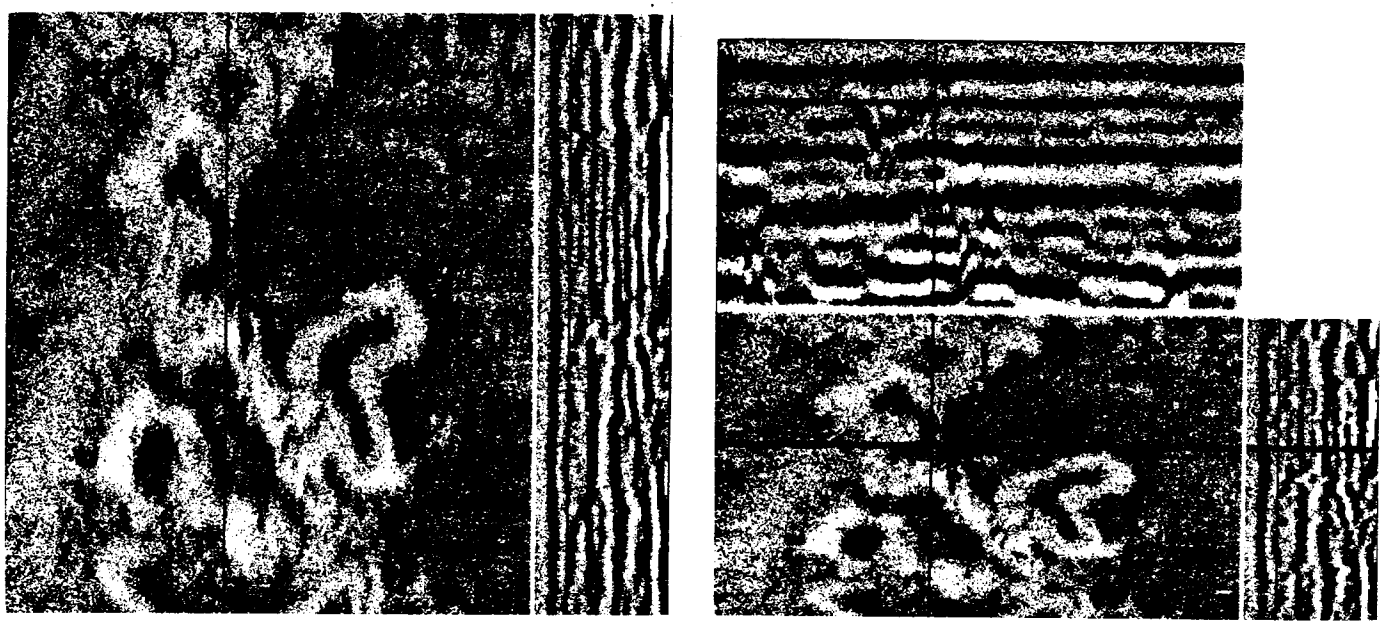

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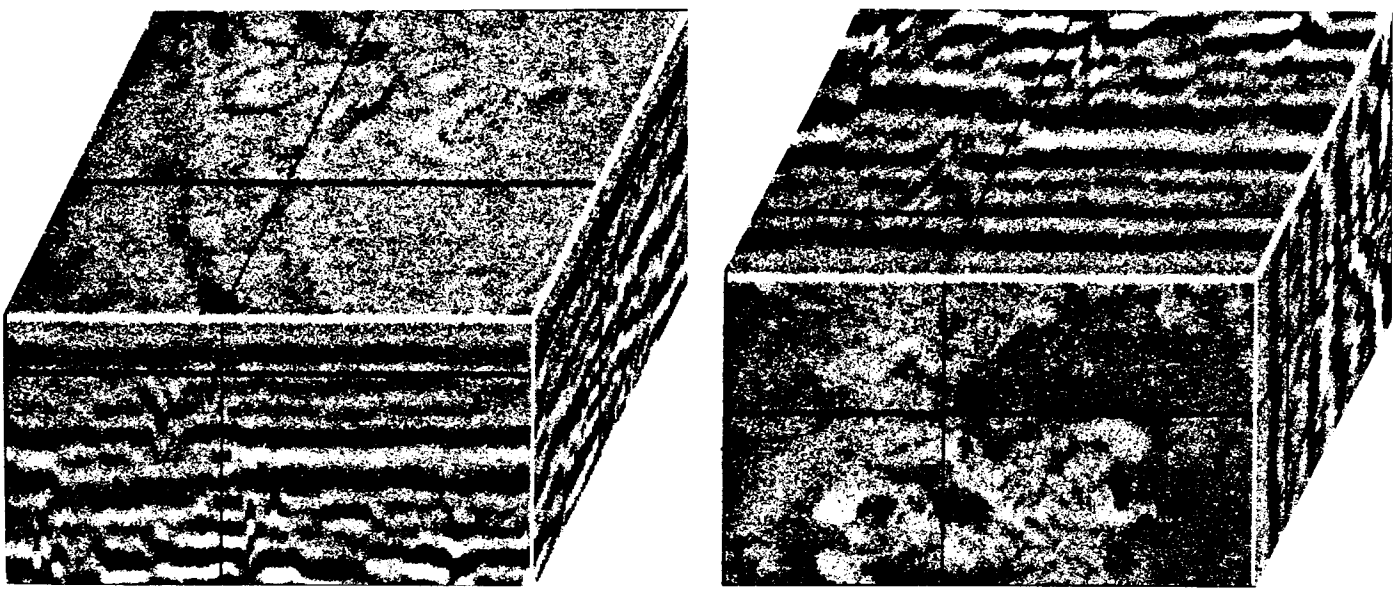

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dedicated to

Manos Read Foster

1927-1982

scientist, humanitarian, and friend

whose faith, encouragement, and support helped give birth to the SEP.

A fellowship in his name has been established at the Stanford University Geophysics Department.

He will be missed.

What's new since '82?

This year focuses on separating truth from fiction. Jeff Thorson looks at inversion of slant gathers and velocity profiles from the viewpoint of statistically estimating model parameters. Bill Harlan uses similar techniques to separate continuous reflectors and noise from diffractions in order to estimate velocities from the latter. Jon grapples with the problem of interpolation of missing data some more, this time estimating model parameters for ground roll and reflections from the data that's not missing. Chuck Sword works on a generalization of Larry Morley's surface consistent cepstral wavelet decomposition that doesn't have to make minimum phase assumptions. Ron Ullmann tells us how (and how not) to deconvolve VSP data.

As always, migration, modeling, and inversion remain fertile fields. Dan Rothman and Stew Levin collaborate with Fabio Rocca to study residual migration. Peter Mora studies forward, full wave equation modeling. John Toldi surges forward inverting near-surface traveltime anomalies. Shuki Ronen continues his relentless attack on aliasing with dip moveout. Chuck Sword translates a Russian paper dealing with Born inversion. And our old colleague Jan P. Dut (SEP-15) proposes a new method for directly imaging the earth's subsurface.

On the frontiers of hardware and software, Rick Ottolini adds movie cubes to our repertoire of interactive data analysis tools. This permits us to view all three axes of our data on the same display. JFC discusses how stretch affects coordinate transformations and how to account for this in computer code. Stew Levin tells us everything we ever wanted to know about FFT's, income averaging and IRA's.

In keeping with a long standing tradition, outside contributors have added vital new directions to our research. Rick collaborated with Stanford electrical engineering professor Jon Newkirk on custom made geophysical hardware design. Bob Burridge of the Courant Institute, in conjunction with Joe Keller's asymptotic ray theorists in Stanford math, finally explains what Cerveny did. John Burg, too, has been chatting about 2-D spectral estimation. Albert Tarantola showed how least squares should be done. Jean Morlet explained how to construct time series out of constant shape wavelets. Dave Donoho may finally have convinced Jon of the merits of minimum entropy and even Walt Lynn had something worthwhile to talk about.

Lastly we congratulate Bert Jacobs, who has left, and Rick, who hasn't, for (finally) finishing their degrees. Dave Hale is polishing his magnum opus and rumor has it that Jeff Thorson will finish soon too. Walt - your record is still safe.