



Geophysical Society of Houston

VOL. 37, NO. 5

NEWSLETTER

DECEMBER 2002

Technical Breakfast

Date: Wednesday, December 11, 2002
 Time: Social 7:00AM, Presentation 7:30 AM
 Q&A 8:15 - 8:30 AM
 Location: Core Laboratories – Houston Office
 6316 Windfern, Houston, TX 77040
 713-328-2673
 Cost: Sponsored
 Reservations: email Joan@hgs.org, Fax – 713-463-9160
 Questions: Karl Seibert, ADS, 713-339-1616

Title:
 DHI / AVO ANALYSIS BEST PRACTICES:
 A WORLDWIDE ANALYSIS

Speaker:
 Kurt Rudolph, Distinguished lecturer
 ExxonMobil Exploration Company
 Houston, Texas



Abstract:
 Industry increasingly relies on DHI and AVO technology to identify and risk prospects in many key exploration areas, including West Africa, the Gulf of Mexico, and the North Sea. As a measure of the impact of this technology, success rates are higher in plays where DHI technology can be applied (+20% for ExxonMobil wildcats). A calibrated DHI rating system, using both DHI and data quality characteristics, provides a struc-

Technical Breakfast continued on page 7

President's Column

By Pat Peck

I'm regularly asked the same question by many of my consultant and contractor friends. The question is, with the price of oil at \$25/barrel and natural gas over \$4/mcf, why is there so little exploration going on? I've pondered this question myself many times and would like to offer my viewpoints on this topic.

Accountants and MBA's who are interested in more conservative investments (those with guaranteed returns and lower risks) currently manage many energy companies. Factored into the MBA investment is a proclivity for larger and fewer investments. Multiply the effect of this strategy by the effect of fewer, albeit larger, energy companies and you have a major concentration of investment income on big targets like the deep water Gulf of Mexico. It appears that these investment managers would prefer to make a single \$billion investment vs. a hundred \$10 million investments. This despite the fact that the large number of smaller investments would appear to spread out the risk. Why? The answer may be that the smaller strategy is much more people and industry-infrastructure intensive. While the investment banker strategy has obvious merits, the effects of lower industry staffing levels and weakened industry infrastructure leaves a void in the long-term health of the industry and by inference, the long-term exploration strategy.

How many players can afford to compete in the deep-water elephant-hunting arena? One of the merits of elephant

President's Column continued on page 5

NOTE:

**Date for the
 Potential Fields
 Christmas Party
 is changed to
 December 12.
 See page 5.**

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GEOPHYSICAL SOCIETY OF HOUSTON

Joan Henshaw, Office Manager • 10575 Katy Freeway, Suite 290 • Houston, TX 77024 • Office Hours 8 a.m. - 5 p.m.

Phone: (713) 463-9477 • Fax: (713) 463-9160

email: joan@hgs.org • website - http://gsh.seg.org

GSH Board of Directors = GSH Executive Committee + SEG Section Representatives

		PHONE	FAX	E-MAIL
PRESIDENT	Dan Ebrom	281/366-3011	281/366-7561	ebromda@bp.com
Corp. Relations	Pat Starich	281/654-5036	281/654-5766	patrick.j.starich@exxonmobil.com
Historian	Art Ross	281/360-9331		artross@airmail.net
Honors & Awards	Dave Agarwal	281/920-4450	281/920-1576	Dave0836@aol.com
Museum	Tom Fulton	281/242-1806		etinsl@flash.net
Nominating	Dan Ebrom	281/366-3011	281/366-7561	ebromda@bp.com
Scholarship Liason	Art Ross	281/360-9331		artross@airmail.net
PRES.-ELECT	Roy E. Clark, Jr.	281/654-5651	281/654-5891	roy.e.clark@exxonmobil.com
Academic Liaison	Hua-Wei Zhou	713/743-3424	713/784-7906	hzhou@uh.edu
Advisory	Lee Lawyer	281/531-5347		llawyer@prodigy.net
Employment Ref	Sam LeRoy	281/556-9766	281/556-9778	earthview@aol.com
Finance	Shane Coperude	281/275-7514	281/276-7660	scoperude@fairfield.com.
Office	Hugh Hardy	713/729-9208	713/726-0456	mghwh@aol.com
Volunteers	Jerry Donalson	713/464-6188	713/464-6440	jdonalson@seismicmicro.com
FIRST VP	Pat Peck	713/461-7178	713/461-2788	pat.peck@oildata.com
Continuing Education	Mike Fenton	713/215-7452		mike_fenton@oxy.com
Speakers	Pat Peck	713/461-7178	713/461-2788	pat.peck@oildata.com
Tech Breakfasts	Karl Seibert	713/339-1616		kseibert@advanceddatasolutions.com
Tech Luncheons	Seth Berman	281/275-7506		seth_quake@yahoo.com
Tech Committee	Jim Schuelke	713/431-7620	713/431-6333	james.s.schuelke@exxonmobile.com
SIGS				
Data Processing	Karl Seibert	713/339-1616		kseibert@advanceddatasolutions.com
Potential Fields	Afif Saad	281/342-8575		AfifHSaad@netscape.net
	Bob Van Nieuwenhuise	281/679-2208		Bob.VanNieuwenhuise@pgs.com
Reservoir Geophysics	Alan Foley			alanfoley@aol.com
Rock Physics	Keith Katahara	713/759-1770	713/356-1800	keith@spinexp.com
	Tad Smith	281/405-4260		tmsmith@newfld.com
SEC. VP	Bobby Perez	281/240-1234	281/240-4997	rdphtx@aol.com
Annual Meeting	Jim Moulden	281/876-8665		jim_moulden@anadarko.com
Awards Banquet	Joan Myskowski	713/393-4883		jmyskowski@fairfield.com
Golf Tournament	George Lauhoff	281/275-7623	281/275-7550	glauhoff@fairfield.com
Salt Water/Bass Tournament	Bobby Perez	281/240-1234	281/240-4997	r_perez@jdkseis.com
Shrimp Peel	Lee Shelton	713/789-2444	713/789-4449	LShelton@scacompanies.com
Sporting Clays	Steve Bircher	713/780-8334	713/780-8335	sbircher@hrs-us.com
Tennis Tournament	Joe Jones	281/438-5626	281/682-6928	
SECRETARY	Farrukh Ahmad	713/647-3499	713/647-3671	farrukh.ahmad@us.ep.totalfinaelf.com
Directory	Laura Self	713/952-7526	713/952-6784	eargle4@aol.com
GSH Membership	Hugh Hardy	713/729-9208	713/726-0456	mghwh@aol.com
Ladies Auxiliary	Luann Cefola	281/366-3422		cefolalm@hp.com
OTC Rep	Alf Klaveness	713/468-5123	713/468-0900	none
SEG Membership	Hugh Hardy	713/729-9208	713/726-0456	mghwh@aol.com
TREASURER	Frank Dumanoir	713/393-4881	713/393-4801	fdumanoir@paradigmgeo.com
EDITOR	Lee Lawyer	281/531-5347		llawyer@prodigy.net
Assistant Editor	John Sumner	713/431-6796	713/431-6094	john.r.sumner@exxonmobil.com
Company Contacts	Scott Sechrist	281/856-8029	281/856-7445	acoustic@airmail.net
Electronic Pub	Scott Sechrist	281/856-8029	281/856-7445	acoustic@airmail.net
Photography	John Sumner	713/431-6796	713/431-6094	john.r.sumner@exxonmobil.com
Publicity	Scott Sechrist	281/856-8029	281/856-7445	acoustic@airmail.net
PAST PRES	Dave Agarwal	281/920-4450	281/920-1576	dave0836@aol.com
PRIOR PAST PRES	John Sumner	713/431-6796	713/431-6094	john.r.sumner@exxonmobil.com
SEG SECTION REPS*	Steve Danbom	713/937-7530		steve.danbom@worldnet.att.net
	Hugh Hardy	713/729-9208	713/726-0456	
	Keith Matthews	281/275-7598		kmathews@fairfield.com
	Mike Fenton	713/215-7452		mike_fenton@oxy.com
Alternate SEG Sec. Reps	Wulf Massell	281/847-3320		wulf@epicgeo.com
	Art Ross	281/360-9331		artross@airmail.net
	Bill Gafford	281/370-3264		geogaf@hal-pc.org
	Pat Starich	281/654-5036	281/654-5766	patrick.j.starich@exxonmobil.com
	Shane Coperude	281/275-7514	281/276-7660	scoperude@Fairfield.com

Editor's Note

To insure your information reaches the GSH society members in a timely manner it must appear in the appropriate newsletter issue. Please note the following deadlines and plan your function's publicity strategy accordingly. Items must be received on or before the corresponding deadline date. Materials can be sent to Lee Lawyer at llawyer@prodigy.net with a cc to John Sumner at john.r.sumner@exxonmobil.com. If you have any questions please call Lee Lawyer at 281/531/5347 or John Sumner at 713/431/6796.

2002 - 2003 GSH Newsletter Deadlines

Issue January 2003
Deadline **December 10, 2002**

Issue February 2003
Deadline **January 6, 2003**

Issue March 2003
Deadline **February 6, 2003**

Announcements

Technical Breakfast
December 11, 2002

Rock Physics
December 18, 2002

**Potential Fields
X-Mas Party**
December 12, 2002

**Geophysical Auxiliary
Houston Junior League
Tea Room**
January 13, 2003

Potential Fields
January 16, 2003

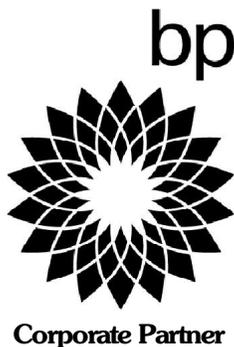
**Milton Dobrin Lecture at
the University of Houston**
February 3, 2003



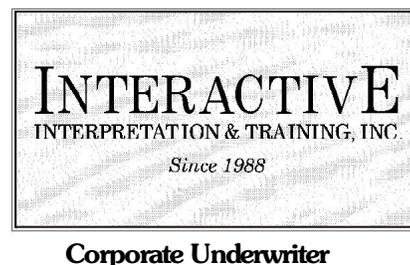
Reservations

Make reservations by e-mail at joan@hgs.org and include your member number (found on Bulletin mailing label). Fax reservations to (713) 463-9160.

The GSH would like to thank the following companies for their support as corporate members:



Corporate Partner



Thank you for your supporting the GSH!

For information on how to become a corporate member or to endow a scholarship with an organization's name please contact Pat Starich (281) 654-5036 or the GSH office at (713) 463-9477.

Special Interest Group Meetings

Rock Physics SIG

Date: Wednesday,
December 18
Time: 5:00 p.m.
Location: Veritas DGC, Inc.
10300 Town Park Dr.
Houston, TX 77072

Expression of Residual Gas - or - "What's the Fuss about Fizz"

by Michael Batzle, Colorado School of Mines, and De-Hua Han, Houston Advanced Research Center

Summary:

The high compressibility of expanded gas produces a strong seismic response even at low saturations. Partial gas-saturation 'Bright Spots' are common on the shallow shelf. In fact, our recent lab measurements indicate that this shallow gas can have an influence beyond what one would expect from a simplistic fluid substitution using Gassmann's equations.

At greater depths, however, the picture changes as dramatically as do the gas properties. At pressures and temperatures typical of deep water reservoirs, gas is highly compressed and can behave more like a liquid. Small amounts of gas can not be responsible for observed false seismic Direct Hydrocarbon Indicators (DHI). The observed signature can require 30 to 50 % gas saturation: and that ain't Fizz. Unfortunately, the sources of many of these false DHIs are still unknown, and the topic requires further research.

Biographies:

Michael L. Batzle (Ph.D., 1978, MIT) is Research Assoc. Prof., Department of Geophysics, Colorado School of Mines, and co-founder and co-director of the CSM/HARC Fluid & Rock Properties Research Consortium. Research interests include: seismic and acoustic properties of rocks and fluids including low frequency and low amplitude velocity, attenuation, and modulus measurements; seismic lithology and fluid identification, time-lapse seismology; transport properties including fault

and shale permeability and sealing; rock strength and stability from both laboratory measurements and well logs; fractured reservoir potential and production characteristics. Recipient, 2002 Society of Exploration Geophysicists Kauffman Gold Medal for Research Contributions. From 1979 to 1994, Mike designed, built and operated ARCO's rock physics lab.

De-hua Han (Ph.D., 1987, Stanford University), Senior research scientist, Director of Rock Physics Lab, Houston Advanced Research Center, Co-founder and co-director of CSM/HARC Fluid & Rock Properties Research Consortium. Research interests include: acoustic, electrical, hydraulic and mechanical properties of rocks and their correlation to rock composition and fabric; hydrocarbon fluid properties and their effects on seismic velocities of rocks; integration of rock properties data into reservoir exploration, evaluation, characterization, and reservoir monitoring problems. From 1987 to 1994, De-Hua was Director of Unocal's Rock Physics Project and Laboratory.

POTENTIAL FIELDS

Where: HESS building, 5430
Westheimer, Houston
Date: Thursday January 16,
2003
Time: 5:30 Social Hour;
6:30 Dinner;
7:30 Presentation
Cost: \$25.00

Contact: Afif Saad, Chair - GSH Potential Fields Group, at 281-342-8575 (AfifHSaad@netscape.net) or Bob Van Nieuwenhuise, Co-Chair at 713-735-6311 (BobV@pgs.com) by Tuesday, January 14, 2003 for reservations. E-mail is best because we can confirm your reservation. Please HONOR your reservation! We must bill no-shows!

The Future of Gravity and Bathymetry from Radar Altimetry

By Professor David T. Sandwell ,

Scripps Institution of Oceanography, La Jolla

Abstract:

Satellite-derived gravity anomalies provide an important reconnaissance tool for the petroleum exploration community. However, only the larger basins can be investigated using this technique due to the relatively poor resolution of the data (30-40 km wavelength). In shallow areas (depth < 200 m) and near coastlines, the accuracy of the gravity field degrades to 7-10 mGal. The main limitations of satellite-derived gravity are ocean waves and errors in coastal tide models. I will discuss both near-term and long-term approaches to improving the accuracy and resolution. The near-term approach involves re-picking the waveforms of ERS-1 altimeter data to suppress the noise due to ocean waves and also correct the data using better ocean tide models. This will provide a general square root of 2 improvement in the global gravity models and perhaps greater improvement on the continental margins. The second approach is to launch a new dedicated satellite altimeter mission with a higher precision altimeter. A 6-year mission will provide a factor of 5 improvement in gravity accuracy (~1 mGal) and a factor of 2 improvement in resolution (~15 km wavelength). This ABYSS proposal can be found at <http://fermi.jhuapl.edu/abyss>.

Biography:

David T. Sandwell is a professor of geophysics at Scripps Institution of Oceanography. Major area of research interest is satellite geodesy and marine tectonics with recent interest in synthetic aperture radar measurements of earth deformation.

(see <http://topex.ucsd.edu>)

Education:

Ph.D., 1981, University of California at Los Angeles, Geophysics and Space Physics, B.S., 1975, University of Connecticut, Major Physics, Minor Mathematics

Potential Fields continued on page 5

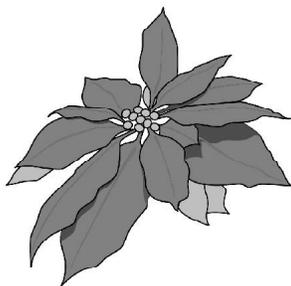
Relevant Publications:

Sandwell, D.T. and W.H.F. Smith, Marine Gravity from Geosat and ERS-1 Altimetry, *J. Geophys. Res.*, 102, 10039-10054, 1997.

Smith, W.H.F. and D. Sandwell, Global seafloor topography from satellite altimetry and ship depth soundings, *Science*, 277, p.1956-1962, 1997.

**THE POTENTIAL FIELDS GROUP OF
GEOPHYSICAL SOCIETY OF HOUSTON**

PRESENTS



**THE ANNUAL
POTENTIAL FIELDS
CHRISTMAS PARTY !**

5:30 pm to 8:30 pm
THURSDAY DECEMBER 12, 2002
**(PLEASE NOTE THE DATE CHANGE TO
THURSDAY, DECEMBER 12. WE APOLOGIZE
FOR ANY INCONVENIENCE)**

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Milton Dobrin Lecture Announcement

Dr. John P. Castagna will give the annual Milton Dobrin Lecture at the University of Houston on Monday February 3 at 7 pm in the first floor lecture room in Science and Research Building - 1. The annual Dobrin lectures are sponsored jointly by the University of Houston Geoscience Department and the Geophysical Society of Houston.

Dr. Castagna's subject is "Direct Hydrocarbon Indication with Instantaneous Spectral Analysis".

Details will be given in the January Newsletter.

President's Column continued from page 1

hunting may be that the validation of a prospect from a cost perspective is not that much higher for a billion barrel field than for a 100 million barrel field. The development cost may be staggering but it is probably not linear with size and the risk vs. reward ratio is not too odious.

This all makes for a few really big, really well funded, really investment savvy oil bankers and not a lot of small exploration companies. Perhaps it is this demise of smaller wildcatters and exploration outfits that is missing from the industry. What is missing in the long-term strategy, I believe, is the pursuit of small fields with good potential but with no giant reward.

The infrastructure necessary to the long-term health of the industry needs this activity and it is this activity that is rapidly declining. Right now there is sufficient expertise to focus on the giant, deep-water fields but this expertise is by and large a residual component of a previously healthy industry that was driven by active exploration. How much oil can we expect the second and third generation bankers to find? Dare I mention the Enron debacle? I won't embellish on that any further as we all know that sad story.

Another component in the investment banker scenario is that many of the decision makers are lured to their strategy by short-term bonuses and stock options that are not particularly enhanced by looking out for the long-term health of their company or the industry. Investment bankers undoubtedly understand financial spreadsheets but may not realize the value in investing in geoscience infrastructure. And almost certainly, they would be appalled by the old wildcatters that built the industry in the first place.

And what about the service industry? Where does this component fit into the banker theory? Without a doubt, the service industry is essential for the long-term health of the oil industry. In short, we need some investment money directed towards significant plays that are not on the radar screens of the super majors. These investments will fund infrastructure, provide jobs for new explorationists that are needed for the future, and will justify continued R & D by the service industry.

Perhaps the answer to this question is nothing more than the investment bankers are all just sitting around waiting for a war to start which would provide the opportunity to insert a straw into Iraq's (or someone else's) oil reserves. But this is not a viable long-term strategy for our domestic industry.

Letters To the Editor

GSH Editor,

Like several of the respondents in the October Newsletter, I was thinking about Newsy Newsletters when I received my September GSH issue. One of my visions was of a blocked out spot in the Newsletter for comments of 25 words or less – something like the old radio contest days. I do wonder whether anyone who would write to an Editor could keep it under 25 words. For example:

I think GSH Luncheon talks should be more/less technical in nature because

The GSH could appeal to younger members by __

SEG members in the Houston area not already members of GSH would be encouraged to join by __

People would have better luck selling prospects in the present environment by __

People would have better luck finding permanent employment in the present environment by __

My biggest claim to fame in the industry resulted from __

Also, maybe you could block out a spot for historical items and/or for even, God forbid, useful or important comments. These little blocked areas might give our members something to shoot at. Our Newsletter might be a page or two longer, but at least it will still be more manageable than the other local geoscience society missal, published by you know who.

Regarding your comment about no jokes in the newsletter, I spiked a few of those absolutely hilarious jokes you still see in industry publications to fill out space in the Denver Geophysical Newsletters. I published 20 years ago; i.e.:

Tom: "Do you like bathing beauties?"

Dick: "I don't know. I don't get to bathe any."

Harry: "Geophysics is like sex. When it's good it's real good, and when it's bad, it's still pretty good."

One of our younger members, Sally Griffiths, suggested to Carl Yost, the then current DGS President, that society newsletters were not appropriate forums for jokes like these. The joke section was stopped, but I did get even with Sally after I became President by appointing her Social Chairman. She got even back by changing her name to Zinke and using the office as a springboard to become President of the SEG. I ask you, and my friend Sally, are jokes good or bad?

Regarding the letter from Hugh Hardy, is the word 'numb nut' in numb nut author a word? What about Olive Drab for a Newsletter color? I've about given up trying to make a living in this depressed environment, so you may have to hunt me down for the rest of my list on "interesting?" stuff.

Jim Wood
Kingwood, TX

Editor: *Firstly, there was another editing mistake. In Hugh's comment about the numb nut author of FTOS in TLE, numb-nut should have been hyphenated. Secondly, inappropriate jokes are not appropriate in the newsletter and thirdly, the 25-words-or-less idea and the historical tidbits are good ideas. What does the GSH membership think (in 25 words or less)? Also, drab is actually a color. The Army adopted the modification called, 'olive drab'.*

GSH Editor:

At the risk of earning General Hardy's wrath, I must correct a mistake in his letter to the editor in October's newsletter. The color associated with Texas A&M is maroon, not scarlet. It sent shivers down my Aggie spine to see that mistake!

But his letter does bring up an interesting point. What color, if we use one in the newsletter, best represents GSH? Yellow is an interesting choice. Since the average age of GSH members continues to climb, does yellow represent the aging of our members like the yellowing of my old paper maps? Or does yellow represent the "stream" of abuse geophysicists often get in the oil and gas industry from other professionals? Or can we expect more sensational articles in the newsletter following the course of yellow journalism?

My favorite color is still maroon!

Ron McWhorter, Class of '79
(Geophysical Advisor
Devon Energy Corporation

Editor: The editor is supposed to catch mistakes. It is hoped that publishing this letter will alleviate any spinal shivers in Aggiedom. Thankfully, my Aggie son and daughter-in-law don't read the GSH newsletter.

Geoscience Registration Announcement

Senate Bill 405 of the 77th Legislature created the Texas Board of Professional Geoscientists to regulate the practice of geoscience in Texas. Licenses will be required by September 2003.

Applications for a Professional Geoscientist License are now available!

Forms and information can be found at the following website: www.tbpg.state.tx.us

tured approach to evaluate DHI quality on a risk analysis basis. Based on analysis of over 100 anomalies drilled with pre-drill DHI ratings, there is an excellent correlation between predicted and actual anomaly success rate within DHI-dependent plays. Several examples from around the world illustrate both success and pitfalls in DHI/AVO analysis. Key points include: Preservation of seismic amplitude and phase is critical. Standard industry seismic acquisition and processing can create false anomalies and errors in quantitative predictions as proven by subsequent drilling. Non-unique seismic response remains a fundamental limitation on our ability to predict reservoir thickness and fluid type (e.g., oil versus gas). 3D AVO and visualization are powerful techniques for recognizing subtle fluid anomalies, which would otherwise be difficult to recognize. Experience indicates that best-practice application of DHI technology is dependent on both optimal technologies and work processes, including: 1) Calibration using physical property and modeling analysis 2) Improved seismic data quality, including pre-stack attributes 3) Integration of DHI analysis with other technologies 4) Development and application of new and emerging technologies.

Biography:

Kurt Rudolph has received a B.S. from Rensselaer Polytechnic Institute and an M.A. in Geology from the University of Texas.

Mr. Rudolph has published papers and abstracts on seismic interpretation, stratigraphy, and basin analysis. Examples include papers on carbonate platform evolution, seismic modeling of reefs, DHI analysis, outcrop-based seismic modeling, structural inversion, and effects of tectonics on sequence stratigraphy.

In 1992 Mr. Rudolph was awarded the Wallace Pratt Award for Best Paper, AAPG Bulletin.

Mr. Rudolph is currently responsible for managing the technical areas of Stratigraphy, Structure/Seal, Regional Geology, Petroleum Systems, and Assessment for ExxonMobil worldwide.

Join the Geophysical Auxiliary of Houston!

The Geophysical Auxiliary of Houston invites the wife of any present or past member of the GSH or SEG, the widows of former members of the GSH and SEG and women members of these organizations to join us for our 2002-2003 year.

Wednesday November 6, the Auxiliary gathered for a tour of the Brookwood Community. Thirty-five ladies enjoyed a tour of the 475 acres that make up the community, visited with residents and dined on a gourmet lunch in the Brookwood Café specially prepared by Brookwood's chef. This was a wonderful opportunity to do some holiday shopping at the Community gift shop with its extensive selection of holiday items.

Please remember to mark your calendars as Monday, January 13, the Auxiliary will meet at the elegant Houston Junior League Tea Room for a delicious luncheon. Renee Kientz, antiques editor for the Houston Chronicle, will be on hand to share her expertise on antiques as well as answer questions. Kathi Hilterman will also be displaying several unusual and beautiful antique dolls from her extensive collection. Please contact Donna Parrish at 281-859-8088 for additional information.

The following ladies are serving as officers and committee chairpersons for the 2002-2003 year: Kathi Hilterman, Carol Gafford, Emilie Fulton, Sandy Klutts, Susan Graul, Linnie Edwards, Donna Parish, Phyllis Winborn, Georgeann Massell, Ruth Harrison, Joyce Kubik, Jerry Templeton, Lynn Schoenberger, Luann Cefola, and Judith Brett.

Please join us as we enjoy a year of entertaining, enjoyable and enlightening programs. Yearly dues are only \$15.00. Call Membership Chairperson, Emilie Fulton at 281-242-1806, GSH Liaison, Luann Cefola at 281-759-7338, or President, Kathi Hilterman, at 713-467-2599 for information on how to join.

Museum News

The GSH has many items available for display, stored courtesy of Hays Information Management at their South Rice facility. We are currently in the process of supplying a number of items to ExxonMobil for a planned display and wish to place other items at the various Oil and Service Company Offices. WesternGeco might want to display, for example, a complete Recording Trailer from the 50's that they are so graciously storing. How about a torsion balance? We have many as well as '33 Stanolind (once Amoco now BP) reports showing their data plus, courtesy Unocal, beautiful maps generated by Pure Oil in '34 incorporating torsion balance and seismic Fan Shooting (a Gulf Oil technology important at that time) data covering most of southeast Texas (34 separate maps now being copied courtesy Ovation).

As well as tons of equipment we could also supply seismic sections from the '50s, plotted, migrated, and depth corrected. How about a special, one of a kind, Christmas present for your boss? For a tax-deductible contribution to the GSH Museum Fund you could give a seismic record from his birth year. Courtesy Unocal we have seismic records for most years from '32 to '63.

Although we also have two display cases not in use we continue to look for volunteers. Please call Tom Fulton at 281-242-1806 to make a donation of time or money.

Notes From The Field: Geophysics in the Jungle

by Jess Kozman

In the equatorial forests on the world's third largest island, in what is now Niah National Park in East Malaysia on Borneo, there is an immense cavern that has evidence of continuous habitation by humans for at least 37,000 years. It now serves as a source for the bird nests which are prized by Chinese gourmets, but its first occupants would have utilized it for shelter from the monsoon rains, and as attested to by multiple layers of skeletons and grave goods, also as a burial place for their dead. It is a huge and impressive cavern that tunnels completely through the limestone mountain serving as its host rock. Some light from the multiple entrances penetrates to most of the passages, and one can walk entirely through it with only a small torch.

Imagine yourself as a Neolithic human whose evolving religion was necessarily based on nature - its bounty and its power. You enter this place in the bowels of the earth itself, with stone columns that evoke in profile howling faces, winds that brush your face with the feel of damp rock eroded by millennia of seeping moisture, and the mingled cries of swiflets and bats that sweep overhead in the darkness. It would be impossible not to conclude that this must be where the Spirits themselves reside.

In a rear chamber, there is a room where a circular hole in the ceiling, fully 50 meters above the floor, allows the tropical sun to send a brilliant shaft of light onto the rock formations below. At one point in the day, this light shines on a huge stalagmite formation with a crowning pinnacle, creating a tableau that must echo all of mankind's iconic religious architecture down through the ages. It looks like it could be the world's first church. The shaft of sunlight is so long that from across the chamber you can actually watch its angle change as the earth rotates. It is an awesome sight, and inevitably, you know you are not the first to be astounded by it.

At night this same window would frame a part of the night sky like a natural observatory, with the stars wheeling across the small opening in a precise, but ever changing pattern over the course of a year. The local guides will tell you that crudely drawn marks can be found on the floor of the cave, seeming to correspond to places where the full moons at various seasons would be visible. But for other marks there is no obvious expla-

nation. They correspond to no significant views through the opening.

On a recent trip, I sat for a long time in this chamber pondering this, until a possible explanation for the other marks hit me like, well, like a ton of rocks (or 5.972 sextillion tons, since we are contemplating the Earth as a whole).

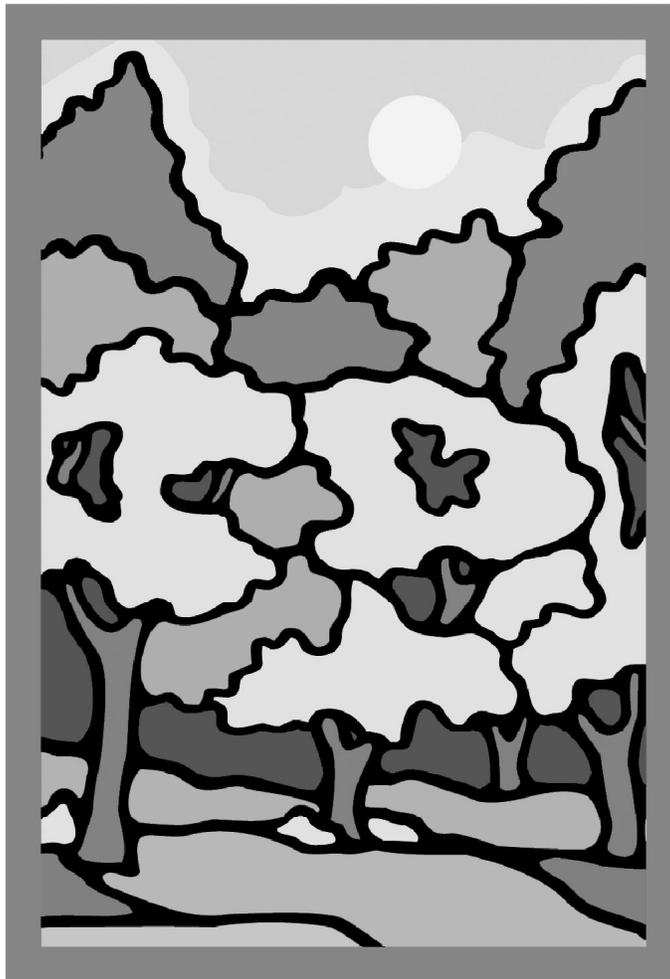
There is a 23,000 to 26,000 year cycle in the Earth's motion, the precession of the spin axis, caused by the wobble induced by the bulge at the Earth's equator. This movement

changes the stars that appear to remain motionless near the poles, such as Polaris, our "north star". In another 13,000 years, the star Vega will be used as the "north star" by any remaining stellar navigators here on Earth. (Either because humans continue to practice antiquated techniques out of a sense of history, or because they will be forced to.) This motion is considered by some theories to be part of what drives the cyclic nature of Ice Ages. This means that 13,000 years ago this motion would have offset the view of the stars. The marks I now sat on could have been very significant. So the faint traces that I observed could have been carved by some of the cave's earliest inhabitants.

Does this mean that our remote human ancestors in the forests of Borneo recorded the position from which they noticed some recurring celestial apparition? And that mankind's earliest astronomical calendars may predate the pyramids? Unfortunately, it is much more likely that last week's eco-tourist happened to set up a camera tripod on the same spot and left the marks. So

I won't give up my present career for one as an amateur archaeologist.

But at the least I had a chance to consider, sitting in that dark cave, the motions of the entire planet. It has been suggested that climatic change is part of what drove our species to evolve. If so, the very fact that 40,000 years ago humans would take shelter as a community in caves has its origin in the planet's movements. And those forces will continue to affect the way we interpret the artifacts of our past. 13,000 years from now,



Notes From the Field continued on page 9

TENNIS, ANYONE?

The annual GSH Tennis Tournament was held on Friday, October 18 at Chancellors Racquet Club. Even though only a modest number turned out for the contest, it was highly competitive and enjoyed by all. Joe Jones was the host and organizer. Joe has served in this capacity for many years and is to be congratulated on a well-run tournament.

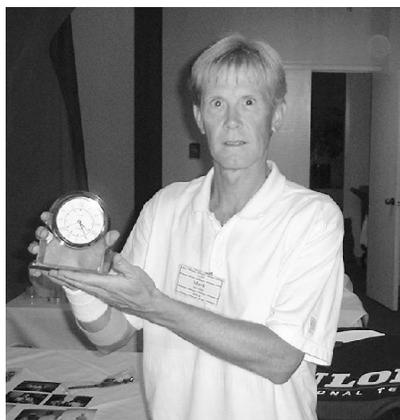
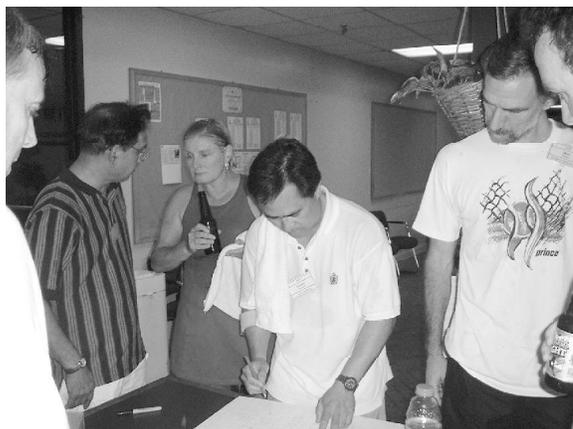
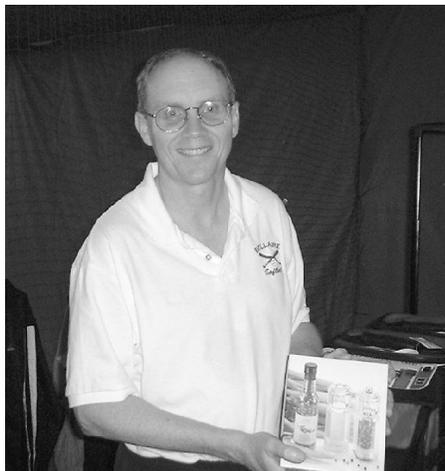
The group was divided into two sections, the A group and the B group. The format was doubles with a random draw for partners. Each rotation played one set with a 12 point tie breaker if five-all was reached. Otherwise a win was declared if six games were won with a minimum lead of two games. Total games won and lost were summed. The winner was the person with the most wins. In case of a tie, the number of games lost was considered.

The first place winner of the A group was Andy Newton followed by Forest Carpenter and Debra DeBram in second and third. In the B group, First place went to David Connolly with Marlene Walker and Mark Stevens in second and

third.

There were numerous door prizes. It didn't appear that anyone went home without a prize of some kind. Everyone was a winner. Plan to join us next year.

Sponsors were Grant Geophysical, Indell Davis, Mitcham Industries, Ovation Data Services, SAIC, System Development and Veritas DGC. Our thanks go to them for their support.



Notes From the Field continued from page 8

another human or their evolutionary descendent may sit in this same chamber on one of those marks and notice that a very intriguing reddish star is perfectly framed in the rock window above. They will ponder the same questions that I did on this day. And the planet will have truly come full circle.

"One generation passes away, and another generation comes; but the earth abides forever..."

Ecclesiastes

For more information on the web, see: A Geological Tour of Northern Sarawak's National Parks & Giant Caves <http://www.ecomedia-software.com/index.html>

Precession of the Earth's Rotation Axis <http://csep10.phys.utk.edu/astr161/lect/time/precession.html>

The Paleoclimate Record and Climate Models http://www.sprl.umich.edu/GCL/Notes-1998-Fall/climate_rec.html

The Pleistocene and the Origins of Human Culture <http://www.des.ucdavis.edu/faculty/Richerson/Speed.htm>

NEW MEMBERS

Active:

Louis Castro
Steven Cochran
Alexander Mackeon
Karl Schleicher

Associate:

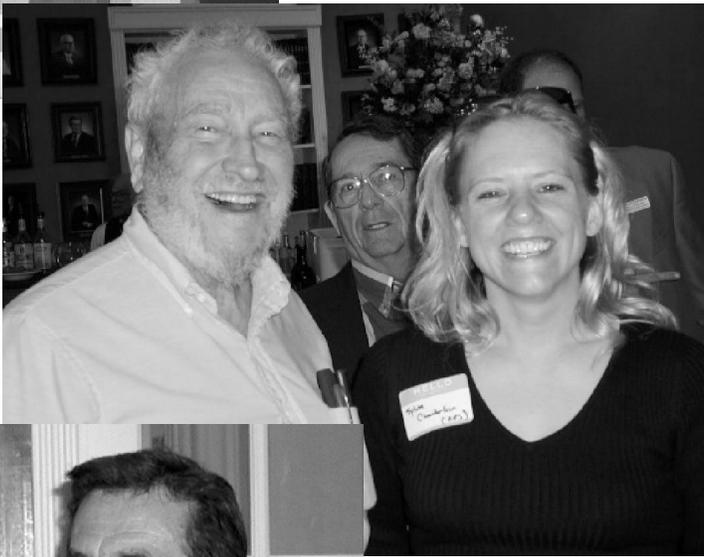
Michael Albertson
Yvonne Griffin
Haibin Xu

Student:

Marija Djordjevic

Total Members 1427

Sightings





I've worked my fingers to the bone for you people. I have slaved over a hot keyboard until I have developed Carpal Tunnel Syndrome. My eyesight is failing because I stay up late at night to publish this Newsletter.

And how am I rewarded? Three hundred GSH members have failed to renew their membership. Three hundred have shown their indifference to my feelings. And to top it off, an uncaring GSH Executive Board has cut those three hundred souls out of the lines of communication that could have catapulted them into the upper echelons of their respective companies. In short, they no longer receive the newsletter.

I am trying to decide whether all of this blood, sweat and tears is worth it for only 1423 currently paid-up members. We used to be close to 1800. We should be at least at 3000. There is about 20% of the total SEG membership in the Houston Area and I can't entice a

measly three hundred to expend the magnificent sum of \$25 to participate in technology paradise plus the literary efforts of a world-renowned author and editor.

I know that the industry is in a difficult time period, especially the service sector. All the more reason to broaden the horizons and expand the vision. What can you and I do to encourage more of our associates to support the efforts of the GSH? This is not a trivial question. Before I retired, I was Chief Geophysicist of the Chevron Corporation. I all but demanded that Chevron geophysicists support the SEG and the local geophysical society. Chevron paid for the technical lunches. You were not allowed to attend the SEG convention on Company time unless you were a member. I threatened them with a transfer to oblivion. Most ignored me. Isn't there an old saying, "You can lead a horse to water but you can't make it drink."? I have seen very few Chevrons at the technical meetings either then or now.

Some have suggested that with the down-sizing and re-engineering, the staff is so small that there is no time for the

frivolity of GSH meetings. Maybe so. I see benefits beyond the obvious reasons.

What to do? Send Hugh Hardy after you? He works hard each year to cajole the delinquents into renewing their memberships. The missing ones will receive cards and letters encouraging them to come back into the fold. And a percentage of the truants will wake up, pony up the twenty-five bucks and all will be forgiven. Then, next year, we will do it all over again.

Break the cycle. It is up to you. Bring your associates with you to our functions. Encourage them to join the GSH. Be part of it. We shouldn't have to rely on Hugh to whip us in line. It is up to the officers of the GSH to schedule events that attract. We don't want ho hum programs. When we have special speakers, the crowds are large. It doesn't take a genius to figure it out. I am the only person that shows up regardless of the program. It is a habit. I am addicted but it took 45 years.

If you have any ideas along these lines, shoot me a note at LLAWYER@prodigy.net. Maybe we can figure something out together.

GeoPuzzle

by John Sumner

Volcanoes and Fault Zones

Find the listed words in the diagram.
They run in all directions.

Anatolian	Kilimanjaro
Baker	Kilauea
Etna	Long Point
Fujiyama	Popocatepetl
Balcones	San Andreas
Hayward	Vesuvius
Hood	Vicksburg

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M N F G I O S A L M Y Q Z V P
U I L S T E E I M E R O S I N
S E N O C L A B G A S S J C I
Q F R E K A B V B S Y M X K X
W E S S U I V U S E V I E S O
Z P L G H L L U T R F E J B Q
P O P O C A T A P E T L E U Y
S A N E I N K L M X Q J O R F
A N D R E A S D D A U U K G J
A D E I O T N S R E N A P O I
L O N G P O I N T A A J A R X
B O O C D L V I M T W X A L L
S H Y O U I T G B Y N Y K R P
S T W X T A E U A L I K A I O
F I S T R N E R A N G J R H S
    
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DECEMBER 2002

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1	2	3	4	5	6	7
8	9	10 NEWSLETTER DEADLINE	11 Technical Breakfast Core Laboratories 6316 Windfern	12 Potential Fields Christmas Party Library of the University Club The Galleria	13	14
15	16	17	18 Rock Physics SIG Veritas DGC, Inc. 10300 Town Park Drive	19	20	21
22	23	24	25	26	27	28
29	30	31				

The Geophysical Society of Houston Newsletter (ISSN 1082-0817) is published monthly except for June and July by the Geophysical Society of Houston, 10575 Katy Freeway, Suite 290, Houston, TX 77024. Subscription to this publication is included in the membership dues of \$25 annually. Periodicals postage paid in Houston, Texas.

POSTMASTER: Send address changes to Geophysical Society of Houston Newsletter, 10575 Katy Freeway, Suite 290, Houston, TX 77024.

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