

On The Cover

Photo from Donald McGookey's paper on the Sierra Madera Astrobleme

STGS Lunch Meeting Notice

Date: Wednesday, April 10, 2019
Time: 11:30 am
Location: Petroleum Club
8620 N New Braunfels Ave # 700
San Antonio, TX 78217
Speaker: Dale Short
Topic: Tectonics of the Texas Portion of the
Sabine Island

Visit our webpage: www.STGS.org

The South Texas Geological Society Bulletin is published monthly from September through May by the South Texas Geological Society, P.O. Box 17805, San Antonio, Texas, 78217. Phone: 210-822-9092. Copyright 2019 by the South Texas Geological Society. All rights reserved.

Subscriptions: Subscriptions to this publication is included in the membership dues (annual renewal). Subscription price for non-members is \$80.00, single copy is \$10.00.

Advertising: Advertising is accepted at any time. Please contact the South Texas Geological Society for additional information.

Contents

President's Message	2
Editor's Message	6
STGS Candidates	7
Calendar	13
STGS Meeting Notice.....	16
Guess This Location.....	19
Featured Article	22
SIPES Meeting Notice.....	35
SAGS Meeting Notice.....	37
Amended By-Laws.....	41
Advertising Index	48
Directory	49

Sierra Madera Astrobleme

Pecos County, Texas

President's Message



The end of the 2018-19 STGS Fiscal Year is fast approaching and I'd like to acknowledge the work of our committees. They are truly the backbone of our organization and they usually don't get the thanks they deserve. I'll be mentioning some of them, but there are many more. If you check the Bulletin, you'll find a revised list of the Committees and their chairmen.

- Nominating - John Long has once again provided us with an excellent slate of candidates. Ballots will be going out soon, and the results will be announced at the Year End meeting at Trinity Univ. on **Tuesday May 7 at 6 PM** (Guest Night). A vote on the new proposed By-law addition of an Emeritus Member classification will be included, along with a "sense of the membership" poll regarding a digital only Bulletin and a closer joint (but still independent) relationship with the San Antonio Geophysical Society (SAGS).
- Program – Tyler Quade has provided us with an excellent series of talks.
- Scholarship – Ken Helm and his committee have done an outstanding job of securing and managing our
- Scholarship funds, as well as selecting the worthy recipients.
- Jones-Amsbury Grant – Mark Thompson has provided long and faithful service to this important "field camp sponsorship" grant fund.
- Field Trips – I have been putting all our field trip efforts into the several field trips that we are supporting or that our members are leading at the AAPG Convention in May.
- AAPG – Tom Ewing remains active in the AAPG and gives us a real insider's input. That's not to mention his numerous technical papers and field trip leaderships. He is an inspiration to me and many others throughout the geological community. Where does he find the time?
- Inter-Society Liaison – Alf Hawkins continues to provide contacts with several local organizations, including the Coalition Blowout, and help out in various ways.
- Community Outreach / Youth Service – John Casiano has been active with NeoGeos and the Young Professionals (YP). He also plans to improve our

President's Message

interactions with the teachers of our local schools. Unfortunately, we had let this effort slip since Lyle Baie moved away.

- Christmas Party – Margaret Graham continues to organize our All Society Annual Christmas Party, which is the social highlight of our year.
- Legacy – Bonnie Weise, our corporate memory, has agreed to continue her efforts to preserve our history. WE NEED EVERYONE'S INPUT to help make this work complete.
- Secretarial Services - Doreen Brooner provides a variety of services and is an important source of information on many subjects about STGS.
- Website – Tim McGovern has kept our website current and state of the art. Tim has also been a wealth of help and information to me personally as President.

As the year end approaches, watch for the following:

- VOTING – The Ballots will be going out shortly - see elsewhere in the Bulletin

for details, such as the Candidate's Bios and a Sample Ballot.

- YEAR END MEETING – Tuesday May 7 @ 6 PM at Trinity. The speaker will present an entertaining talk of interest to members and their guests. Elections Results, Scholarship Winners and other items will be announced.
- AAPG ACE (Annual Convention and Exhibits) will be held here in San Antonio at the newly expanded Convention Center from **May 18 – 22**. <https://ace.aapg.org/2019>
- The STGS "Charro Rodeo Tuesday Night AAPG Social Party" on May 21 will be one of the highlights of the Convention. Our visitors from around the world will be fascinated by this example of real-life Mexican Cowboys and Cowgirls! Anyone from San Antonio who has not seen the Charreada is missing part of our cultural heritage.
 - STGS members who are registering for AAPG ACE, can register through the AAPG website <https://ace.aapg.org/2019>.
 - Those who aren't registering for AAPG can still sign up at our website <https://stgs.org/>. The price either way is \$50 per person.

President's Message

John Long has taken the lead in organizing this event.

- Bruce Gates has provided a generous sponsorship. Thank you, Bruce,!

Oh, and did I mention we will need all of you as VOLUNTEERS for the Convention!!

It is an important image-enhancing and money-raising event for the STGS. It is also a way for us to catch up with latest developments and see many of our friends from around the world.

Regards,
Tom Fett

President 2018-2019

Cell: 210-289-7128

MedinaLake@msn.com



BLACKBRUSH

OIL & GAS, L.P.

Scott Martin

CEO

Scott.Martin@blackbrushenergy.com

Mark A. Norville

President

Mark.Norville@blackbrushenergy.com

Jim Davis

COO

Jim.Davis@blackbrushenergy.com

Dan Morris

Senior Geophysicist

Dan.Morris@blackbrushenergy.com

Andrew Hancock

Chittim Ranch Asset Geologist

Andrew.Hancock@blackbrushenergy.com

Colin Tabbert

Frio County Asset Geologist

Colin.Tabbert@blackbrushenergy.com

Robert Foster

Karnes County Asset Manager

Robert.Foster@blackbrushenergy.com

Alex Dornfeld

Karnes County Asset Geologist

Alex.Dornfeld@blackbrushenergy.com

BlackBrush Oil & Gas, LP

www.BlackBrushEnergy.com

18615 Tuscany Stone, Suite 300

San Antonio, Texas 78258

210-495-5577 Phone

210-495-0075 Fax



THUNDER EXPLORATION, INC.

Celebrating 30+ years of prospect generation and exploration in the following South Texas plays and trends.

Frio	San Miguel	Edwards
Jackson	Austin Chalk	Pearsall
Yegua	Eagle Ford	Sligo
Wilcox	Buda	Cotton Valley
Olmos	Georgetown	Smackover

Thunder is currently seeking non-operated working interest participation in projects and prospects.

Contact Walter S. Light Jr.
President/Geologist

713.823.8288

EMAIL: wthunderx@aol.com



METANO

ENERGY III

ROBERT OLIVER, *President*

JOHN BISSELL, *Executive Vice President*

MARK PARRISH, *Vice President – Land*

ROGER ESPINOSA, *Exploration*

MARK FRANKI, *Engineer*

RON COX, *Controller*

LINDA HUNTER, *Lease Administrator*

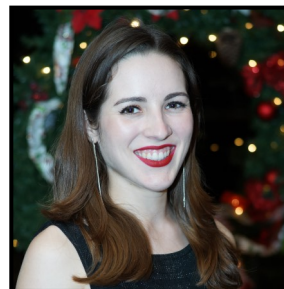
METANO ENERGY III, LP

7330 San Pedro Ave, Suite 620

San Antonio, Texas 78216

Telephone: (210) 798-1414 Fax: (210) 798-1424

Editor's Message



The mystery photo location for March was Great Sand Dunes National Park in Colorado. Congratulations to Gene Ames III for being the first person to guess this correctly! Thank you to those who participated.

Great Sand Dunes National Park is a very unique park that represents several different ecosystems; grasslands, wetlands, conifer and aspen forests, alpine lakes, and tundra. There are two mountains streams that run through the sand dunes, which disappear into the sand. It is really amazing to stand at the very end of a creek and watch it disappear into the ground!

If anyone can send me a really good April Fool's joke or idea, you'll get a shout-out in my next Editor's letter!

Please see the sample ballot (page 11) of the candidates for your STGS representatives.

Sincerely,

Alyssa B. Kirkendall

STGS Editor 2018-2019

STGS Board Member Candidates

President Elect: Margaret Graham, Grant Snyder

Vice President: Matthew Allen, Travis Garcia

Secretary: Kathryn Branley, Lexie Taggart, Luke Finger

Treasurer: 3-year term

Executive Committee: Tim McGovern, Gene Ames III, Mark Norville, Andrew Scott

Editor: Alyssa Kirkendall



Margaret P. Graham

President, MPG Petroleum, Inc.

B.A. Geology, Trinity University

Professional Organizations: API Southwest Chapter, Chairman 1997 – 1998; STGS, Christmas Party Chair; SAGS, SPE, SIPES, AAPG

Professional Experience: MPG Petroleum, Inc., President and Owner; Geological Consultant to Durst Energy Corp. and Rio Exploration Co.; Tesoro Petroleum, Inc., Staff Geologist; Gulf Energy Development Corporation, Geological Technician



Grant Snyder

Vice-President/Principal Hydrogeologist, GLS Solutions, Inc.

B.S. Geology, Lamar University

Graduate Studies, Hydrogeology, University of Texas at San Antonio

Professional Organizations: STGS – Member, 1989 - Present; AIPG; NGWA; AWWA

Professional Experience: GLS Solutions, Inc. - Vice-President/Principal Hydrogeologist; URS Corporation – Senior Project Manager; Dames & Moore – Senior Hydrogeologist; Edwards Aquifer Authority – Senior Hydrogeologist; U.S. Geological Survey – WRD – Geologist; Texas Geologic Services – Staff Geologist



Matthew Allen

Exploration Geologist, Zachry Exploration LLC

B.S. Geology, University of Alabama

M.S. Geology, University of Texas at San Antonio

Professional Organizations: STGS—Member 2015-2019, AAPG, GSA

STGS Board Member Candidates

Professional Experience: Geologist, Zachry Exploration, 2015-present



Travis Garcia

Geoscience Database Administrator, Lewis Energy Group

B.A. Geology, University of Texas at San Antonio, 2008

M.S. Geology, University of Texas at San Antonio, 2012

Professional Organizations: STGS Member; AAPG House of Delegates Committee – 2018-Present

Professional Experience: Lewis Energy Group 2012-2019, United States Geological Survey 2009-2012



Kathryn Branley

Senior Geologist, BB&E, Inc.

B. S. Geology, Lamar University

M. S. Geology, Southern Illinois University - Carbondale

Professional Organizations: IAS; SEPM; STGS; PG – TX and WY

Professional Experience: Senior Geologist, BB&E, Inc.; Project Manager/Sr. Geologist, North Wind - Portage; Associate/Sr. Geologist, Booz Allen Hamilton



Lexie Taggart

Geologist, Abraxas Petroleum Corporation

B.S. Geology, University of Tulsa

M.S. Geology, University of Alabama

Professional Organizations: STGS – 2017 - Present; AAPG – 2010 - Present

Professional Experience: Abraxas Petroleum – Exploration Geologist, 2018 - Present, Abraxas Petroleum – Geotech, 2017 - 2018

STGS Board Member Candidates



Luke Finger

Senior Geologist, Abraxas Petroleum Corporation

B.A. Geology, Texas A&M University

M.S. Geology, University of Texas at San Antonio

Professional Organizations: STGS – 2009 - Present; AAPG – 2010 - Present

Professional Experience: Abraxas Petroleum – Senior Geologist, 2017 - Present, Abraxas Petroleum – Exploration Geologist, 2014 - 2017, Abraxas Petroleum – Geotech, 2010 - 2014, Finger Oil & Gas Inc. – Geotech, 2009 - 2010

Professional Experience: Abraxas Petroleum – Senior Geologist, 2017 - Present, Abraxas Petroleum – Exploration Geologist, 2014 - 2017, Abraxas Petroleum – Geotech, 2010 - 2014, Finger Oil & Gas Inc. – Geotech, 2009 - 2010

Tim McGovern

Geological Consultant

B.S. Geology, Texas A&M University, 2007

Professional Organizations: South Texas Geological Society Treasurer 2009-2014; South Texas Geological Society President-Elect/President/Past-President 2014-2017; South Texas Geological Society Executive Committee 2017-2019; Past AAPG Delegate; Past SEG Council; Balconies Energy Library Board Member; San Antonio Petroleum Club Board Member; GCAGS Convention Treasurer 2017; SIPESTreasurer; Past SAGS 2nd VP, 1st VP and President

Professional Experience: Ameritex Minerals, Geologist 2007-2010; JL Resources, VP Exploration 2010-2015; Geological Consultant 2016-Present

Gene L. Ames, III

Senior Vice President, Compadre Resources, LLC

Professional Organizations: STGS—Secretary, Treasurer, Editor, President, 1989-1992, Scholarship Fund Committee Member 1994-1998; AAPG International Convention-General Chairman, 2008; GCAGS—General Chairman, 2017

Professional Experience: Sandia Oil & Gas, Exploration Geologist 1985-1989; Venus Exploration Inc, Geologist & Exploration Manager 1989-2003; General Manager of The Nordan Trust 2004-2010; Bissell Operating LLC & Ames Energy Advisors, LLC 2010-2017

STGS Board Member Candidates



Mark Norville

President, BlackBrush Oil & Gas, L.P.

B.S. Geology; Texas A&M University-College Station, TX

Professional Organizations: STGS – President 2000-2001; STGS – Vice President; AAPG/DPA - Vice Chair 2018-2019; SPE

Professional Experience: District Geologist/Clayton Williams Energy; Exploration & Operations Manager/Stallion Oil Company; Vice President of Exploration/Kerns Petroleum, Inc.



Andrew R. Scott

President and CEO, Altuda Energy Corporation

B.S. Geology, Indiana University, Bloomington

M.S. Geology, Sul Ross State University, Alpine Texas

PhD Program, The University of Texas at Austin

Professional Organizations: STGS Executive Committee; AAPG Advisory Board; Distinguished Lecturer, Petroleum Exploration Society of Australia (2004); President, Energy Minerals Division, AAPG; ACE 2008 Technical Program Co-Chair; Member Potential Gas Committee; Associate Editor AAPG *Bulletin*; Texas Regional Director, Petroleum Technology Transfer Council (PTTC)

Professional Experience: Altuda Energy Corporation (2000-present); Pangaea Resources Pty, Ltd, Sydney, Australia, Head of Exploration (2010-2013); Bureau of Economic Geology, The University of Texas at Austin (1990-2000); Program Director Domestic Energy Research; Research Scientist Associate



Alyssa Kirkendall

Master of Science in Geology Student

B.S. Geology, University of Texas at San Antonio

Professional Organizations: STGS, Editor 2018-Present; AEG; Geological Society of America 2016-2018

Professional Experience: U.S. Geological Survey, Student Trainee, Hydrology 2018-Present; Texas Commission on Environmental Quality, Engineering Technician 2016

Sample Ballot

SOUTH TEXAS GEOLOGICAL SOCIETY

The following slate of officers has been selected by the Nominating Committee, circle or write in the candidates of your choice.

Please return by May 1, 2019

President Elect

Margaret Graham

Grant Snyder

Vice President

Matthew Allen

Travis Garcia

Secretary

Kathryn Branley

Luke Finger

Lexie Taggart

Executive Committee - Circle two

Gene Ames III

Tim McGovern

Mark Norville

Andrew Scott

Editor

Alyssa Kirkendall

Approve By -laws amendment to add <i>Emeritus Membership</i> ? (see Bulletin for details).	Yes or No (Circle one)
Favor going to digital only Bulletin as cost saving measure? (see Bulletin for details).	Yes or No (Circle one)
Favor more joint meetings with the SA Geophysical Society? (see Bulletin for details).	Yes or No (Circle one)

When you receive your official ballot, please return to

South Texas Geological Society
P. O. Box 17805
San Antonio, TX 78217



SOUTH TEXAS GEOLOGICAL SOCIETY
BULLETIN ADVERTISING 2017-2018

August 30, 2017

Please fill in your company's information:

Company: _____
Phone: _____
Contact Person: _____
Email: _____
Address: _____

Please select a size for your AD:

Size	Cost by Check	Cost by Credit Card (3.5% service charge)	Your Selection (Check One)
Outside Cover Page in Color	\$2,000	\$2,070.00	
Inside Cover Page in Color	\$1,875	\$1,940.63	
Full Page (Color or B&W)	\$1,250	\$1,293.75	
Half Page (Color or B&W)	\$675	\$698.63	
Quarter Page (Color or B&W)	\$375	\$388.13	
Eighth Page (Color or B&W)	\$250	\$258.75	
Website Top of Page Ad (Color)	\$325	\$336.38	
Website Base of Page Ad (Color)	\$250	\$258.75	
Business Card Ad (Color or B&W)	\$40	\$41.40	

Payment Method:

- ☐ (Preferable) Checks Payable To: South Texas Geological Society (S.T.G.S.)
Memo: Bulletin Ad 2017-2018
- ☐ By Credit Card (There is an additional service charge of 3.5% for all credit card payments)

Person Authorizing: _____

Visa ☐ MasterCard ☐ AMEX ☐ Discover ☐

Credit Card Number:

Expiration Date: / CVC#: (3 digits on back of card or AMEX 4 digits on front)

Billing Zip Code:

- ☐ Our company/scientist is interested in submitting a technical article for consideration to be published as a featured article in a future Bulletin.

Please send your filled out invoice and payment to:

Bradley Arnett
17806 IH 10 West, Suite 405
San Antonio, Texas 78257

Before sending this form, Please make a copy for your records! Thank you.

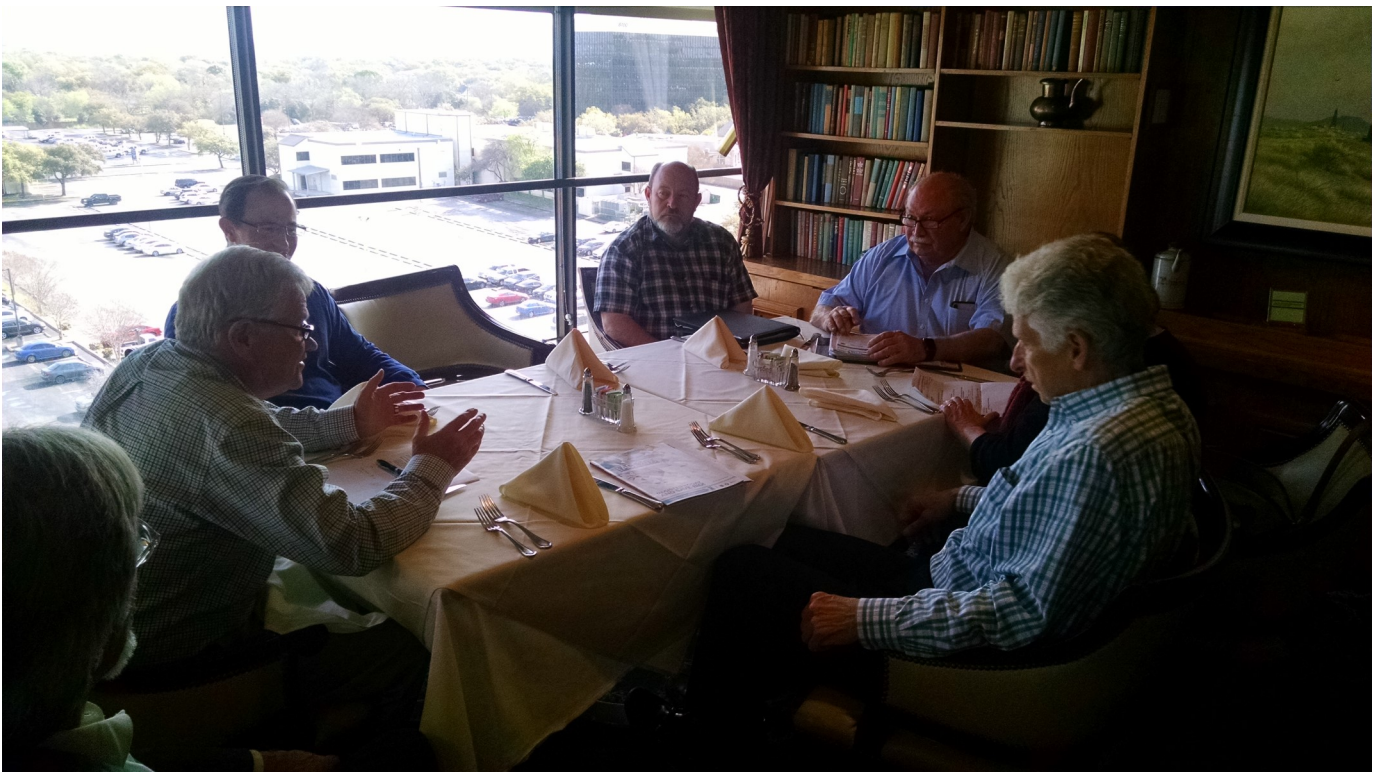
APRIL 2019

SUN	MON	TUE	WED	THU	FRI	SAT
	1 April Fool's Day	2	3	4	5	6
7	8	9	10 STGS Lunch Meeting 11:30 AM	11	12	13
14	15	16	17	18 SIPES Meeting 11:30 AM	19 Good Friday	20
21 Happy Easter!	22 Earth Day	23 SAGS Meeting 11:30 AM	24	25	26	27
28	29	30				

Photos from STGS March Luncheon



Photos from STGS March Luncheon





SPEAKER: Dale Short
TOPIC: Tectonics of the Texas Portion of the Sabine Island
LOCATION: Petroleum Club 8620 N New Braunfels Ave # 700
San Antonio, TX 78217
TIME: 11:30 AM, Wednesday, April 10, 2019
COST: \$25.00 for members with reservations
RESERVATIONS: Register AND pre-pay online at www.STGS.org

Abstract

The Sabine Island is a tectonic feature located on the southern end of the area known as the Sabine Uplift in East Texas. The Island has a different tectonic history compared to that of surrounding areas. The objective of this investigation was to document the apparent vertical movement of the island.

The Sabine Island and several other “basement highs” were emergent during the deposition of the Jurassic salt, leaving either a very thin salt around the Panola/Shelby county line, or absence of salt as found on the Sabine Island, and in northeast Shelby county in the vicinity of Juaquin Field. The Sabine Island remained high during the deposition of the Smackover Formation up to the Valanginian unconformity. After deposition of the transgressive systems tract B Lime, the Island subsided and created accommodation space for a thicker section of the marine to paralic Travis Peak siliciclastic section. A reversal of motion on the Sabine Island block occurred during the deposition of the Cretaceous carbonate section and is illustrated by karsting in the James Lime and reef development in the Glen Rose. Another reversal occurred during the deposition of the Austin Chalk that can be demonstrated by thickening of that interval over the Island. The final reversal documented in this paper is between the top of Austin Chalk and the Chicxalub tsunami event near the K/T unconformity.

Biography

Dale is a retired geologist and geophysicist living in Tyler, Texas. He earned a Bachelor's of Science in Geology (with honors) from Washington State University in 1973. After graduation, Dale moved to Houston and worked for Western Geophysical for 5 years. He spent nearly 15 years with Conoco working South Texas, the Oriente Basin in Ecuador and the Williston and Uinta basins. His experience in East Texas began in 1996 where he worked the basin from Tyler, Texas. Dale then worked for EOG Resources for nearly 14 years in both south and east Texas and retired in 2015. He is active in the East Texas Geological Society where he served as President from 2014 to 2016.

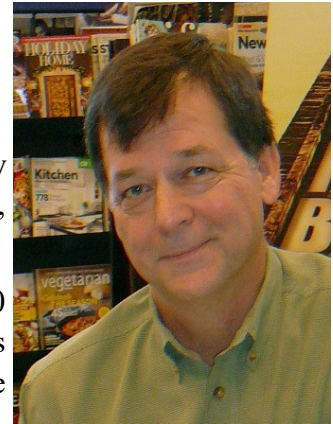


SPEAKER: David Allard
TOPIC: A World of Culture Oil and Golf
LOCATION: Trinity University 1 Trinity Pl.,
San Antonio, TX 78212
TIME: 6 PM, Tuesday, May 7, 2019
COST: \$25.00 for members with reservations
RESERVATIONS: Register AND pre-pay online at www.STGS.org

Abstract

David Allard, author of “A World of Culture Oil and Golf” - will speak May 7th, 2019 at Trinity University starting at 6:00 pm (1 Trinity Pl, San Antonio, TX 78212).

His book spans more than 20 years of international exploration in more than 20 countries providing a variety of stories of business and other interests. This insightful geologist looks at the oil and gas business with an ability to provide interesting descriptions of the people and places he has encountered.



The presentation will cover a variety of exploration and development plays along with tales of local color, history, and above and below ground risks based on first hand experiences. International exploration discoveries are an exciting moment, but are only one step on the long road to profitability. Areas to be discussed include but are not limited to: South America, Central Africa, Egypt, the UK, Russia and the Far East.

As a professional petroleum geologist, David Allard has had a career of over 35 years working with both major and independent companies, playing a part in many new field discoveries, writing for publication and making public presentations. As one book reviewer stated: “His scientific approach to geology is mirrored by his sincere interest in what’s above ground. He writes and behaves as the friendly American who appreciates and respects cultural differences, the local history and people.” The book is based on journals compiled over a 20 plus year period during a variety of assignments, business trips and overseas postings with the family, while working internationally as well as inside the U.S.

Biography

David Allard worked for over 35 years as a petroleum geologist and from 1988 to 2006 worked internationally in more than 20 countries, including living with his family in Egypt and Scotland. He recently published a nonfiction book: “A World of Culture Oil and Golf” that covers a 20 year period of



international and domestic USA business and historical aspects from the perspective of a staff geologist and in recent years as a manager. David has had a varied career involving many new field discoveries, publications and public presentations. Beginning in 2017, book marketing efforts include speaking events as a subject matter expert in petroleum geology and international experiences. He currently lives in Denver and still loves golf.

“A World of Culture Oil and Golf” is a fascinating look into the global oil business and what it’s like to be an insider traveling the world and navigating the amazing array of locales and personalities.” *David W. Miller II, author of Hard Knocks MBA: The Search for Business Success and Job Satisfaction*

David Allard presents interesting stories from far flung parts of the world in his book *A World of Culture Oil and Golf*.

- World cultures; people and places tourists do not typically see
- Oil business risk and wildcat wells
- Rebels, jungle, desert and offshore
- Golf in strange places; even if your caddy speaks no English.



CAN YOU GUESS THIS LOCATION?



Guess This Location

Hint: The orange color is caused by thermophilic microbes. “Oh give me a home, where the buffalo roam...”

No cheating! The first person to correctly guess the location gets a free business card ad in the following month’s bulletin publication.

Email your guesses to alyssakirkendall@gmail.com. If you have geology photos you think would make good candidates for future “guess this location” contests, please email them to me.



Sage Energy Company

OIL AND GAS EXPLORATION
AND DEVELOPMENT

GEOSCIENCE

Doug Toepperwein
dougt@sageenergy.com
Ext. 236

LAND

Jim Richter
jrichter@sageenergy.com
Ext. 239

One International Centre
100 N.E. Loop 410, Suite 1300
San Antonio, Texas 78216
Phone: (210) 404-2828 Fax (210) 404-1300



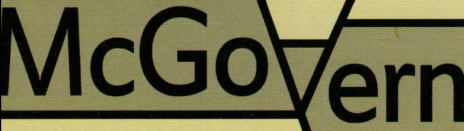
Gulf Coast Onshore Data Resource

Synthetic Seismograms
Velocity Surveys
Digital Sonic Log Database

www.petrophysics.com

Contact Editor for
Advertising Information!

Or go to
www.STGS.org
For more information!

 LEE BILLINGSLEY PRESIDENT PARTNER 19026 RIDGEWOOD PARKWAY STE 129 SAN ANTONIO, TX 78259 MAIN 210.962.5880 DIRECT 210.962.5863 CELL 210.601.1110 LEE@WINDRIDGEOIL.COM WWW.WINDRIDGEOIL.COM	 FRONTERA EXPLORATION CONSULTANTS <i>Geological and Geophysical Interpretation SMT Kingdom™ Workstation</i> THOMAS E. EWING, PH.D. AAPG CPG #4538; Texas Lic. Geol. #1320 19240 Redland Road, Suite 250, San Antonio, TX 78259 (210) 494-4526; (210) 824-6423 FAX tewing@fronteraexploration.com Since 1982	TOM FETT, PE GEOLOGICAL CONSULTANT P.O. Box 870 Lakehills, Texas 78063 TomFett.com Medina-Lake.com 830-612-2929 Cell: 210-289-7128 Fax: 210-444-0214 MedinaLake@msn.com
 ENVIRONMENTAL GEOPHYSICS ASSOCIATES GEOPHYSICAL SERVICES FOR ENVIRONMENTAL, ENGINEERING, AND OIL & GAS INDUSTRIES Alf Hawkins Manager 8531 N. New Braunfels Suite 201 San Antonio, TX 78217 Phone: 210-829-5330 Email: ega@pdq.net www.environgeophysics.com	ALF HAWKINS (210) 829-5330 HAWKINS REMOTE SENSING and Exploration 8531 N. New Braunfels Ste. 201 San Antonio, Texas 78217	BONNIE R. WEISE Geological Consultant CPG, TX P.G. 19240 Redland Rd., Ste. 200 San Antonio, TX 78259 bweise1@sbcglobal.net Office: (210) 402-0957 Cell: (210) 218-9372 Fax: (210) 824-6423
INLAND OCEAN, INC. HANS R.F. HELLAND inlando@sbcglobal.net (210) 828-2625 (210) 828-2629 Fax 1815 E. Lawndale P.O. Box 6949 San Antonio, TX 78209	Joe McGovern, P.G. Geological Consultant  joe@tjmcgovern.com 932 W. Huisache Ave. San Antonio, TX 78201 TJMcGovern.com (361) 331-0540	COMPADRE RESOURCES, LLC  GENE L. AMES III SENIOR VP, TECHNOLOGY & PROJECT GENERATION 10841 VANDALE SAN ANTONIO, TEXAS 78216 210.824-3100 OF 210.857.6724 MBL GENE@COMPADRERESOURCES.COM WWW.COMPADRERESOURCES.COM



Bruce C. Gates
President

Blaine Spies
V.P. Operations

1250 NE Loop 410, Suite 500, San Antonio, TX 78209
Telephone: (210) 829-4888 • Fax: (210) 824-3950
www.ageronllc.com

Sierra Madera Astrobleme

Pecos County, Texas

By Donald McGookey

Abstract

Just 17 miles south of Fort Stockton, US Highway 385 crosses this astrobleme. One of Texas' best secrets is that Sierra Madera, immediately to the northeast of the highway, is the central peak of an eight-mile diameter astrobleme. An astrobleme is the scar left on the earth's surface by the impact of a very large meteor. This astrobleme was thoroughly studied by the United States Geological Survey (Professional Paper 599H, 1972), because it is like astroblemes on the moon and Mars. They are characterized by: an outer rim, a large circular depression and a sharp peak in the middle. The USGS found that rocks in this peak originally were more than 4000 feet below the surface and were rebound from the impact pressure of the large meteorite. The information gained here, that collecting rocks from central peaks provided samples of rocks from far below the surface, led NASA to program some landings on the moon and the robot Curiosity on Mars to land in the depression near central peaks. The rocks that make up this peak are highly folded and faulted, and have high pressure features, crystals and minerals found nowhere else in the southwest.

Sierra Madera Astrobleme

If you look at the moon through a telescope or good binoculars and find a region that has a low sun angle (lots of shadows), you will see that the surface is completely pockmarked with circular depressions of all sizes. Each depression was the result of a meteorite or comet hitting the surface of the moon with enough force to blast rocks outward and leave a crater, a so-called astrobleme. Many of these craters have a central conical peak that looks like a volcano. Seventeen miles south of Fort Stockton, U. S. Highway 385 crosses the western half of a circular astrobleme that is the best-exposed example of this type of crater in the United States. It has a 600-foot high prominent central peak called Sierra Madera

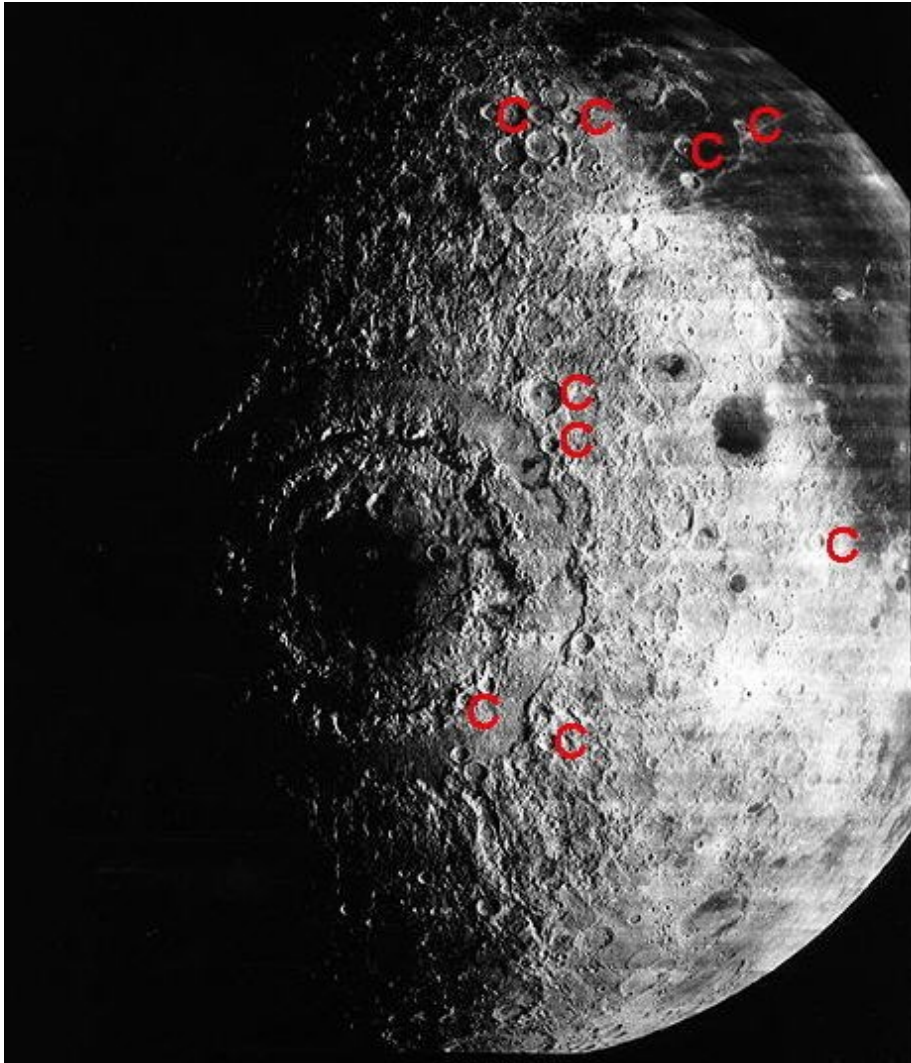
(wooded hill) that is composed of intensely folded and faulted Permian limestone rocks that were originally more than 4000 feet below ground. This central uplift is four miles in diameter. The depression around this central uplift is eight miles in diameter and the concentrically constructed outside rim is about one-half mile wide. The rocks of this rim are Lower Cretaceous carbonates that are locally folded and cut by concentric normal faults downthrown toward the center.

Detailed study of this astrobleme began in 1960 by E. M. Shoemaker when travel to the moon was first contemplated. The main impetus was to obtain information on terrestrial examples of lunar structures. Sierra Madera Astrobleme is so well preserved and exposed that it should be either a state park or a national monument.

The rocks of the central peak exhibit many features that record the severity of the impact.

Brecciation (rock that is completely broken into angular pieces), shatter cones (high pressure impact structures in rocks), and certain types of internal structures of minerals at Sierra Madera are ascribed to shock deformation. The most common type of breccia consists of thoroughly shattered rocks in which the fragments are generally so little displaced that thin beds maintain their continuity. A second type of breccia contains fragments of different lithologies.

Shatter cones, a very common mode of rock failure in cryptoexplosion (impact) structures, are well developed in the Permian rocks of Sierra Madera. Within the area in which breccias and shatter cones occur, quartz grains commonly have cleavages and other planar elements characteristically formed by shock (Sierra Madera Figure 7). Wilshire et al. (1972) concluded that shocked quartz in the mixed breccias indicates pressures of over 200 kilobars (kb), grading to 100 kb and 50 kb at the flanks of the uplift.



Sierra Madera (SM) Figure 1. Low angle view of part of the moon's surface. Red "C's" are alongside craters that have central peaks (Source: NASA).

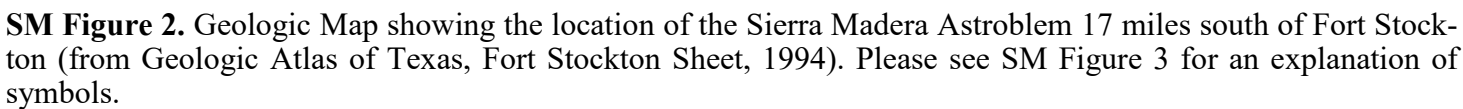
Holes drilled for oil and gas in formations below the astrobleme, along with seismic data (that record reflections from formations deep in the earth), show that the intense deformation observed at the surface dies out rapidly below the surface and disappears between 6,000 and 8,000 feet. The gross structure is represented by a bowl-shaped body approximately 8.5 miles in diameter and 6,000 to 8,000 feet deep, the central part of which has a high structural relief near the present ground surface, with intensely shattered beds that are tightly folded and cut by numerous faults. The intensity of deformation and brecciation decreases outward and downward from the central peak.

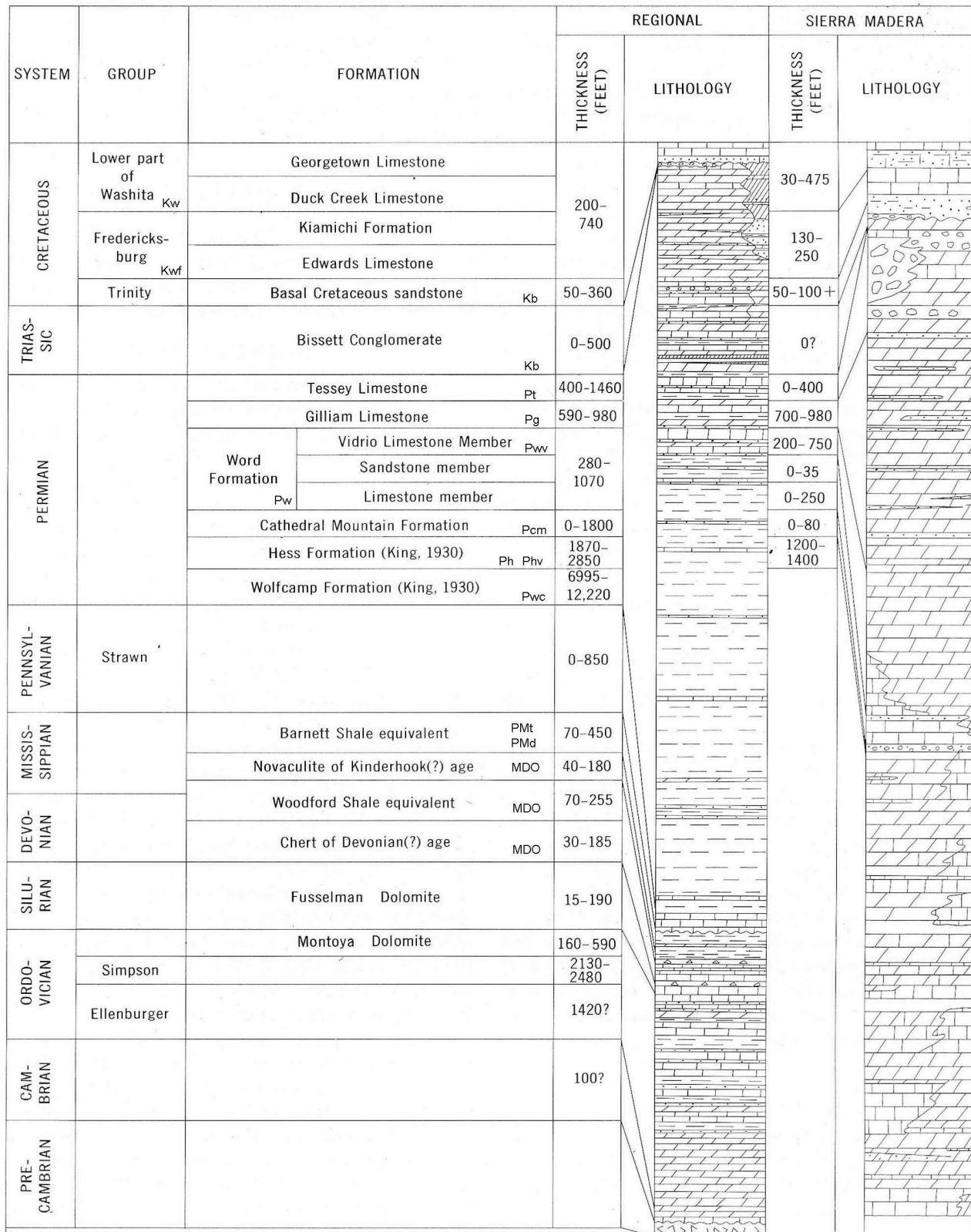
The ring depression separating the outer rim and the central uplift is largely buried under alluvium. Drill holes and outcrops on the southeast side show that the depression is floored by Cretaceous rocks that have dips up to vertical and are cut by faults. The

depression is separated from the outer rim by concentric normal faults but is not separated from the central uplift by any significant change in style of deformation.

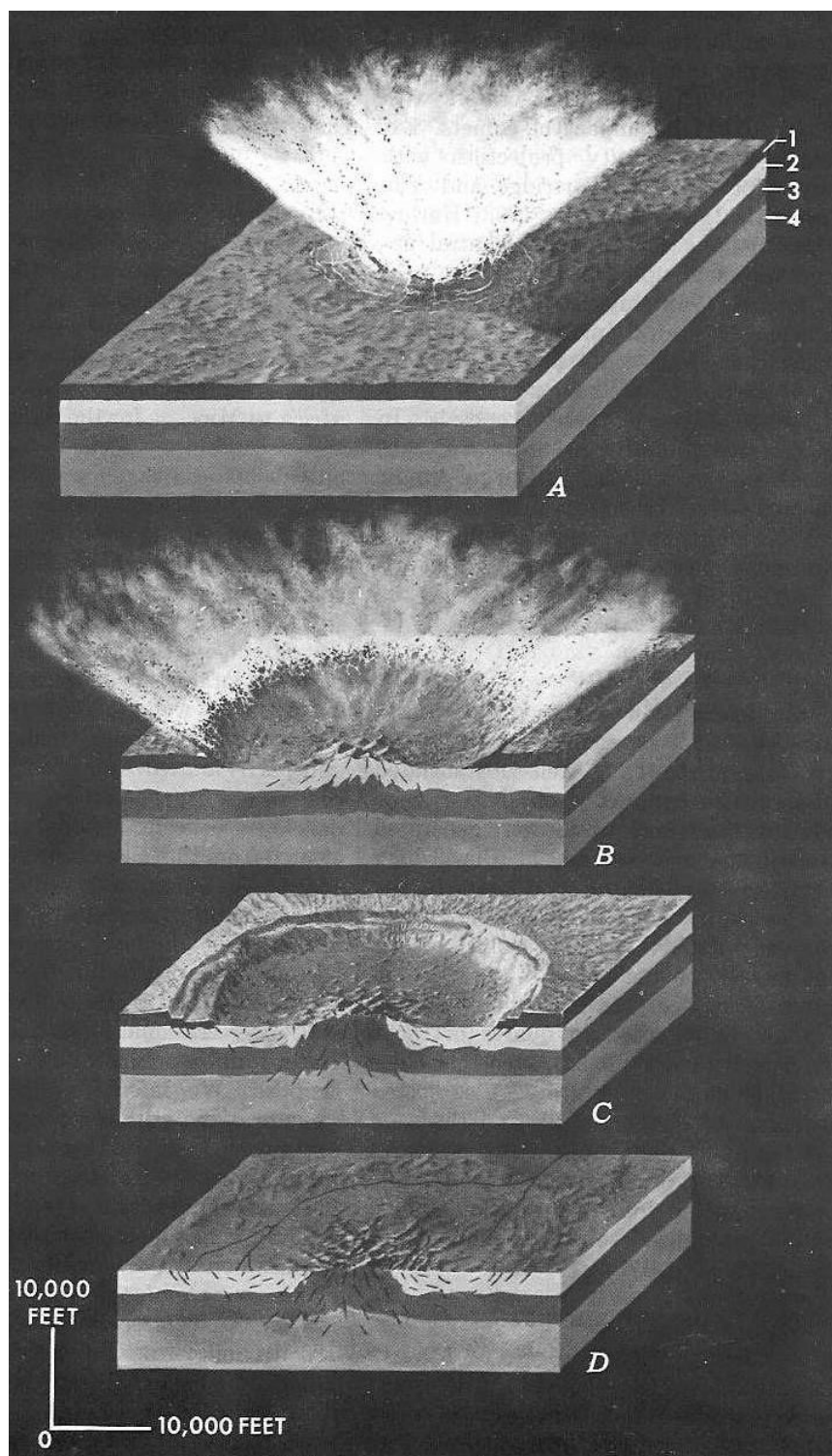
Compared with the setting and structure of surrounding Cretaceous strata and the nearby Pennsylvanian and Permian rocks of the Glass Mountains, the Sierra Madera is unique in its form, style, and severity of deformation. The Astrobleme was formed sometime after the Lower Cretaceous strata were deposited. The next younger event recorded in the area is some mild Miocene or Pliocene faulting, but the nearest fault is too far removed from this area to provide any help in determining the age of impact. The best guess is that the feature formed during the Late Cretaceous or Early Tertiary.

Astroblemes have been found in many parts of the world. They range in age from Precambrian for the





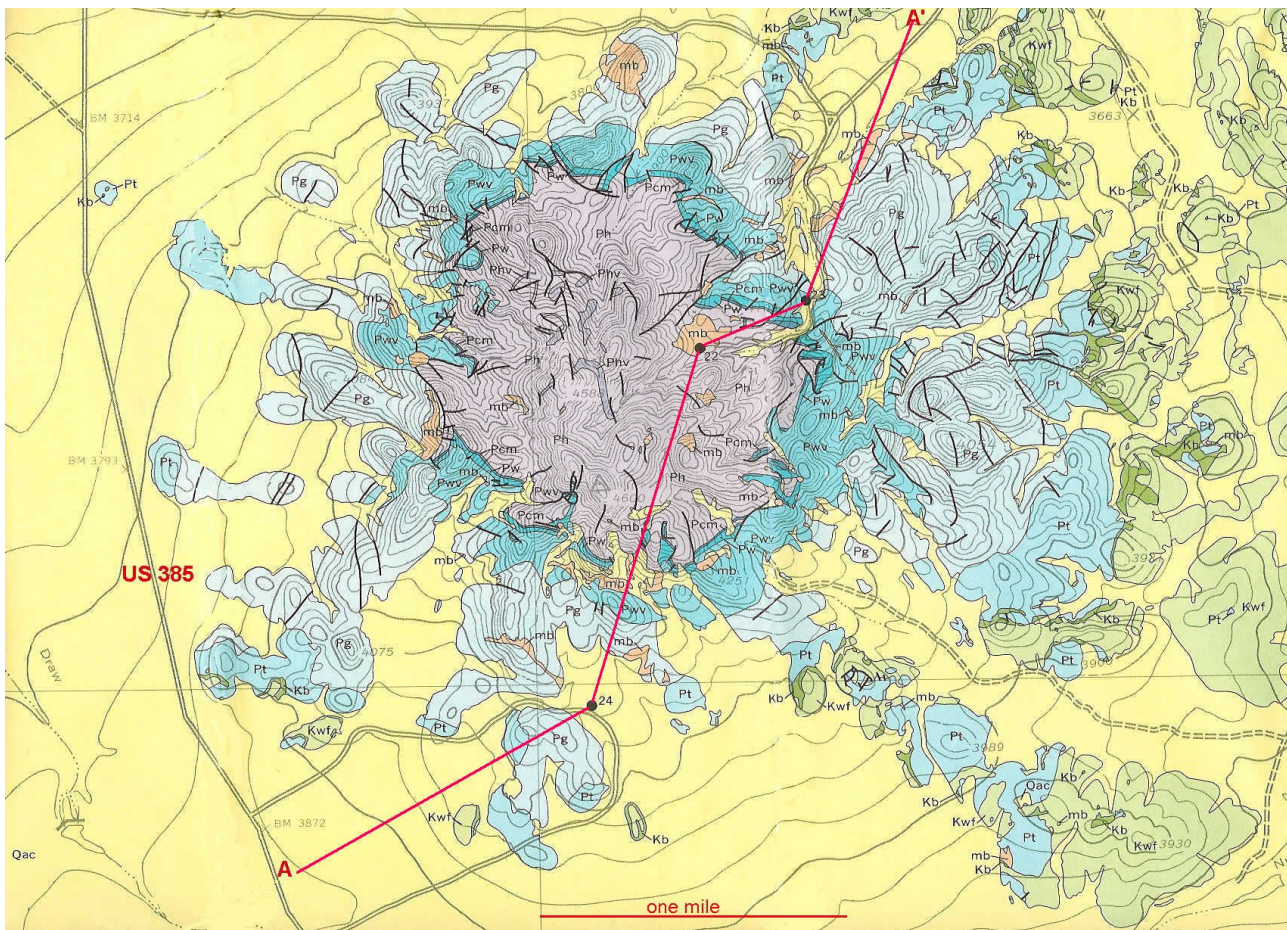
SM Figure 3. Generalized stratigraphic column of Paleozoic to Lower Cretaceous rocks at Sierra Madera (left column) and detailed stratigraphic column of rocks at Sierra Madera (right column, from Wilshire, et al, 1972).



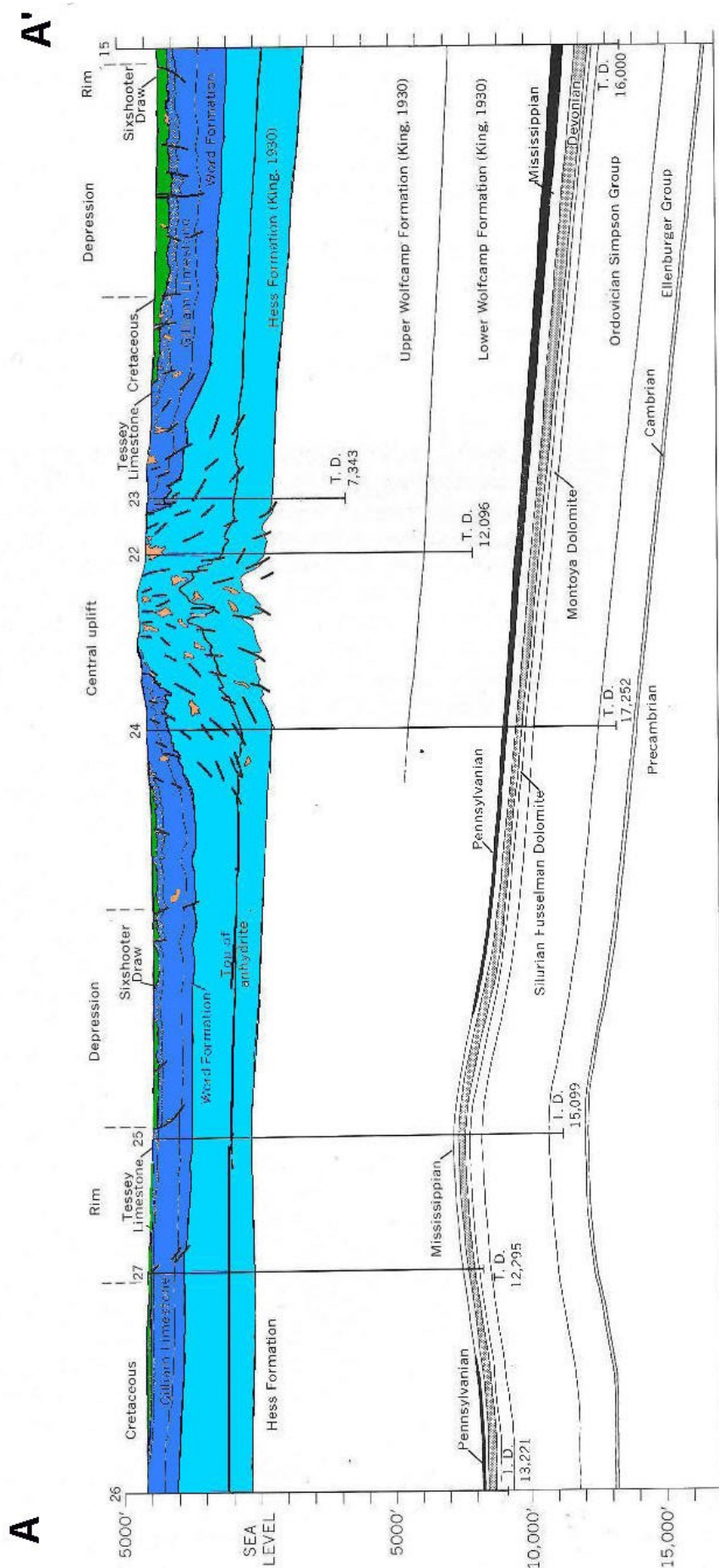
SM Figure 4. From Wilshire, et al, 1972. Hypothetical reconstruction of events forming Sierra Madera. Layers of rock: 1. Post-Cretaceous (hypothetical); 2. Lower Cretaceous, and Permian Ochoan and Guadalupian strata; 3. Permian Leonard strata; and 4. Permian Wolfcamp strata. **A.** Shortly after impact showing growth of crater by low angle jetting. **B.** Seconds after **A**, showing crater growth by ejection and formation of overturned flap; **C.** Freshly formed crater days after impact, showing uplift protruding into crater, crater-rim modification by slumping, and fall-back, **D.** Present form of Sierra Madera, modified by erosion.



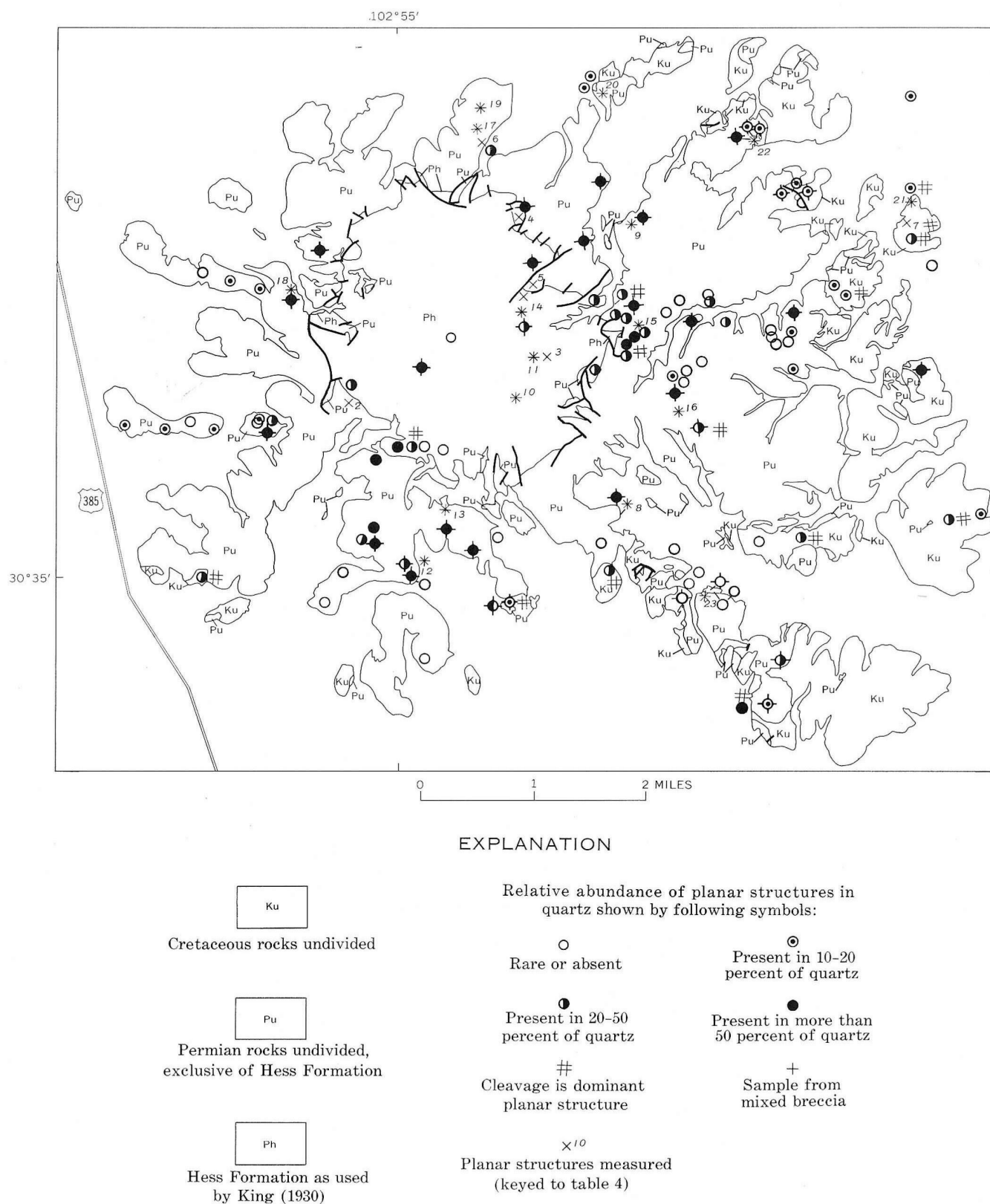
SM Figure 5. Aerial view of Central Peak from the northeast. Red arrows indicate the dip of some of the blocks in the uplifted and fractured Permian rocks of the peak. K identifies a syncline in Lower Cretaceous limestones. Airplane was provided by Betty Hargus and Bob Elliott was the pilot.



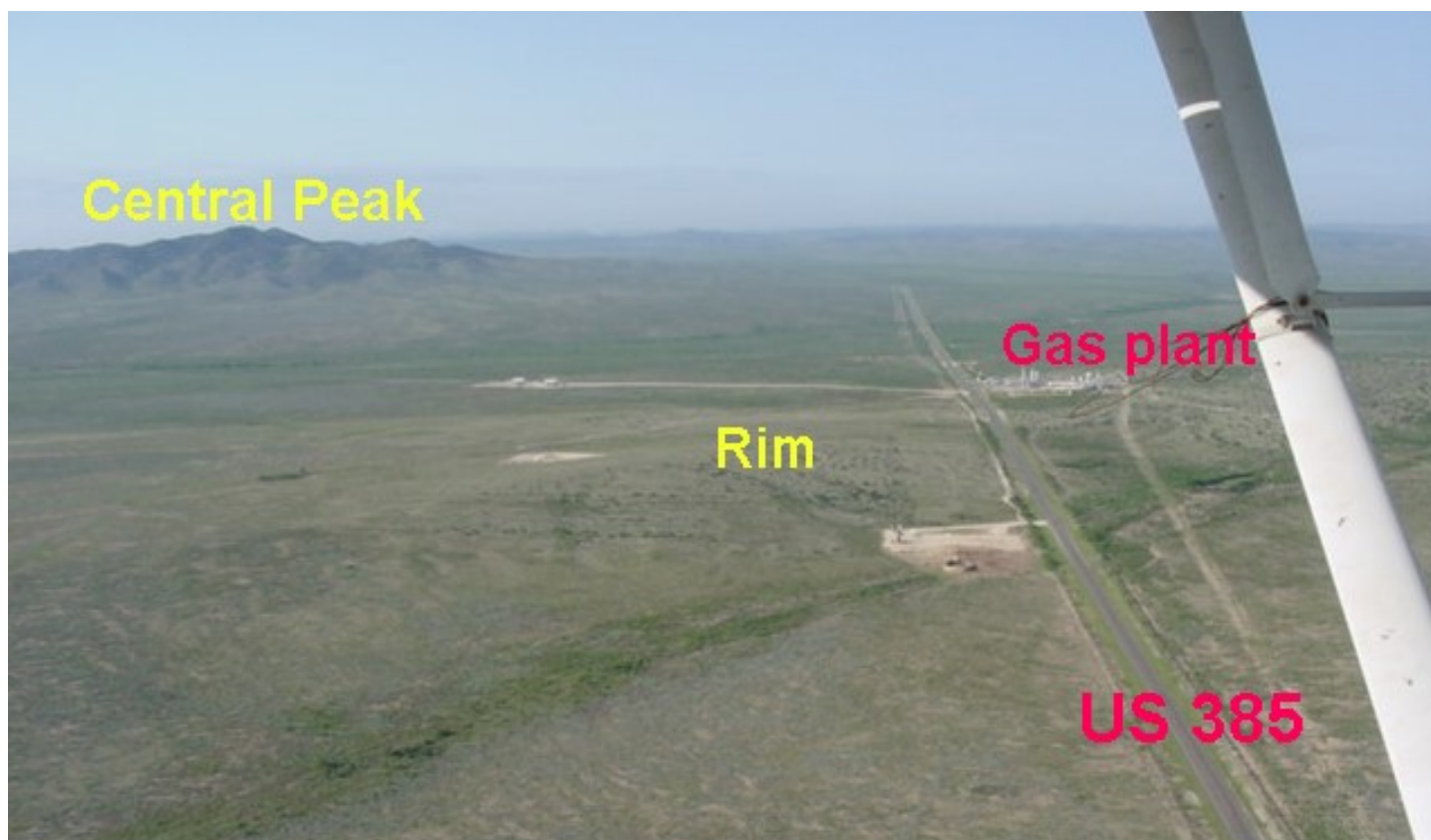
SM Figure 6. Geologic map of Central Peak. Please see Sierra Madera Figure 3 for an explanation of formation symbols. From Plate 2 of Wilshire, et al, 1972.



SM Figure 7. Cross section A-A' from southwest to northeast across the Central Peak. Line of section is posted on Figure 6. Please see Sierra Madera Figure 3 for an explanation of formation symbols. From Plate 2 of Wilshire, et al, 1972.



SM Figure 8. From Wilshire et al, 1972, figure 31. Distribution of shock-deformed quartz. Shock quartz provides one of the principle clues to the impact origin of the astrobleme.

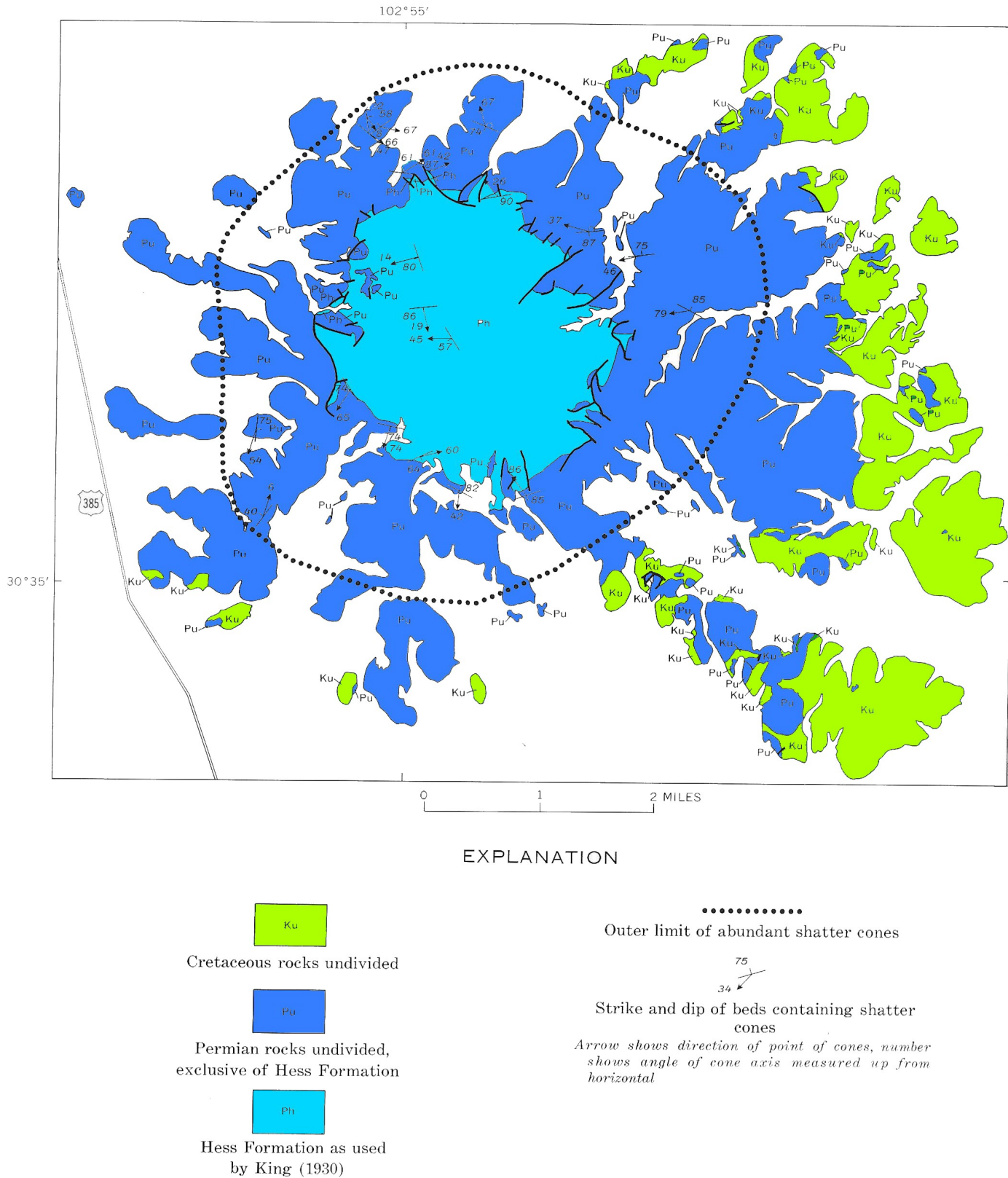


SM Figure 9. Aerial view of Central Peak looking southeast across west rim near gas plant. Fractured Cretaceous limestones of west rim in foreground; the alluvial covered ring depression in is middle ground. Airplane was provided by Betty Hargus and Bob Elliott was the pilot.

Sudbury Complex of Ontario (Naldrett, 2003) and the Vredefort ring of South Africa, to the Miocene age Steinheim Basin of Germany. Present exposures show a wide range of erosional level. Astroblems have common characteristics that tie them together and allow the more deeply eroded structures, such as Sierra Madera, to be reconstructed by comparison with the astroblems that are less eroded. The structures at Flynn Creek, Tennessee and the Steinheim Basin represent the highest levels of exposure in well-studied astroblems. Both structures have a small central uplift surrounded and partly buried by a lens of breccia that occupies a shallow crater. A somewhat lower erosional level is preserved at Gosses Bluff, Australia, where some highly shocked and melted fallback breccia is preserved, but the original crater walls have been destroyed by erosion. Sierra Madera represents a still lower erosional level from which most vestiges of a crater-form depression, fallback, and ejecta have been stripped (Wilshire, 1972, p.37). Scaling to the dimensions of Flynn Creek crater and various experimental craters suggests that about 2000 feet of cover may have been originally present over the Lower Cretaceous beds that has since been removed by erosion (Sierra

Madera Figure 4).

Sierra Madera was extensively studied in preparation for lunar exploration. These results indicated that one could sample the thickness of lunar crust in the walls of craters and that rocks from the central uplifts would provide data on subcrater material from depths approximately one-tenth of the crater diameter. The typical lunar crater considered was over 15 miles in diameter. Thus, sampling rocks from the central uplift would allow study of rocks from over 1.5 miles below the surface.



SM Figure 10. Distribution of shatter cones. These cones form in solid rock because of the extreme impact pressure. From Wilshire, et al, 1972.

References

Bureau of Economic Geology, Geologic Atlas of Texas, Fort Stockton Sheet, 1994.

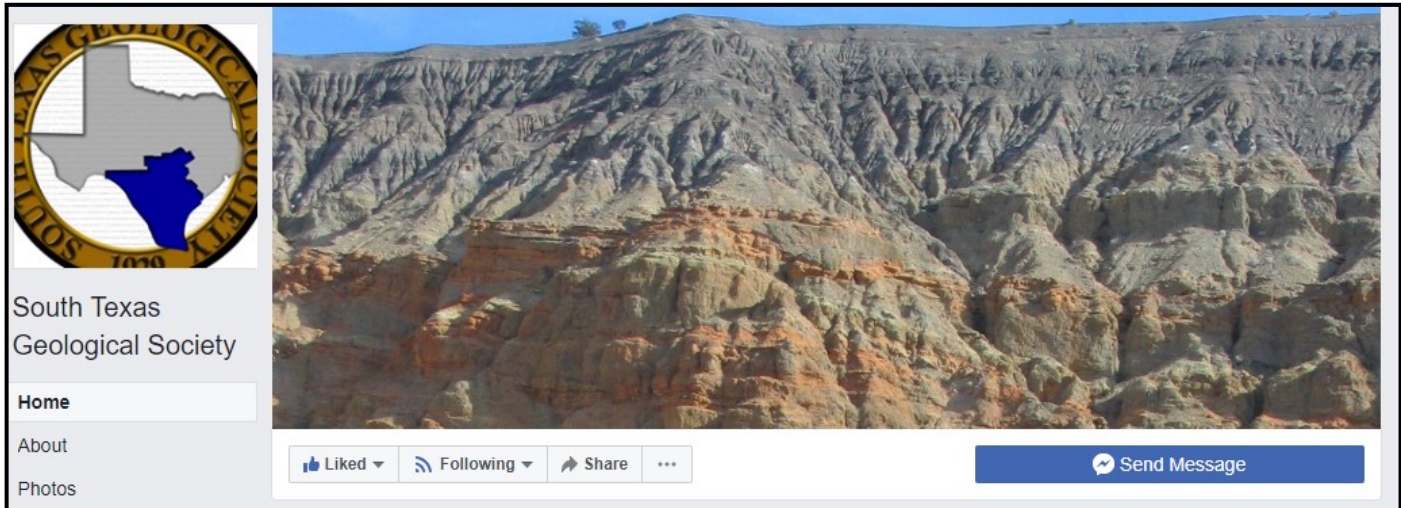
Howard, K. A., T.W. Offield and H. G. Wilshire, 1972, Structure of Sierra Madera, Texas, as a Guide to Central Peaks of Lunar Crates: Geological Society of America Bull. v.83, p 2795-2808.

King, P. B., 1930, The Geology of the Glass Mountains, Texas, Part 1, Descriptive Geology: Texas Univ. Bull. 3038. 167 p.

Naldreiff, A.J., 2003, From Impact to Riches: Evolution of Geological Understanding as Seen at Sudbury, Canada: Geological Society of America Today, v. 13, no.2, p.4-9.

Wilshire, H.G., T. W. Offield, K. A. Howard, and David Cummings, 1972, Geology of the Sierra Madera Cryptoexplosion Structure, Pecos County, Texas: U.S. Geol. Survey Prof. Paper 599-H

Find the South Texas Geological Society on Facebook!



Save The Date



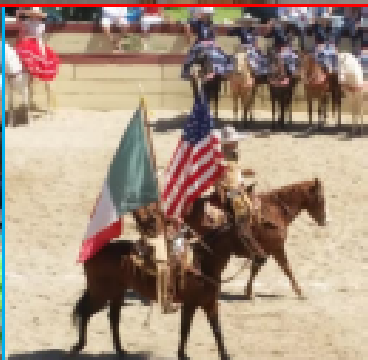
AAPG 2019 Annual Convention
Tuesday, May 21, 2019
600 to 930 PM
Asociación de Charros
San Antonio

6126 Padre Drive, San Antonio, TX



SEE: <http://www.sacharros.org>





Jonathan Alonzo

San Antonio Charreada - Hosted by the South Texas Geological Society
Before BOE South Texas energy and dreams were measured in horses and cattle. Return with us now to those thrilling days of yesteryear, to a private event where the Mexican adoration of the horse shines through. Charros in their finest pastel folklorico dresses breathtakingly weave their side-saddled steeds through precision riding maneuvers, re-enacting Mexican Revolution skirmishes, but as delicate as a lace fan. Charros apply nuanced skills, not brute force, to tame and work their animals. Chartered buses will carry you rapidamente from the Convention Center to the San Antonio Charro Association arena in 10 minutes where you will be greeted by Los Soberanos mariachi band, recently returned from a command performance at the Czar's Winter Palace, while you proceed to enjoy classic Mexican fajitas with side-dishes and practically unlimited beverages, including up to three cervezas or sangrias! Plan to arrive on time at 6 pm to witness the opening Charreada promenade reminiscent of Roman legions paying tribute, not to Caesar, but to you. If you need to break from the action buses will be shuttling all night between the arena and the Convention Center until we bid you Adios at 9:30 pm. This is a lifetime opportunity for 400 of you to enjoy a celebration of skills and life that the San Antonio Charro Association has practiced for 71 years in this arena; do not miss it.

DATE: Tuesday, May 21st, 2019

TIME: 6 pm to 9:30 PM; The first bus leaves from the Convention Center at 5:45 pm. The last bus leaves the arena at 10 pm.

LOCATION: San Antonio Charros Association Arena, 6126 Padre Dr, San Antonio, TX 78214

FEE: \$50 per person

INCLUDES: transportation, music, dinner, drinks, entertainment

LIMIT: 400 people

SPONSORED by Ageron Energy



- TOPIC:** A comparison of popular neural network facies classification schemes
- LOCATION:** San Antonio Petroleum Club, 8620 N. New Braunfels, San Antonio, Texas 78217
- TIME:** 11:30 AM to 1:00 PM, Thursday, April 18, 2019
Always the third Thursday of the month
- COST:** Free for paying dues members
\$25.00 for guests (Includes Lunch)
- RESERVATIONS:** Please call Doreen at 210-822-9092 or email doreenbrooner@hotmail.com
- SPEAKER:** Christopher P. Ross, Ph.D.

ABSTRACT

Christopher P. Ross, PhD, Cross Quantitative Interpretation, LP
David M. Cole, Stanotex, LLC



There are two learning networks commonly used for seismic facies classification: unsupervised and supervised neural networks. While unsupervised neural networks have been proven effective processes in macro- and meso-scale depositional facies characterizations, published results from supervised neural networks have more often demonstrated effective reservoir-scale characterization studies, using neural network mapping rather than neural network classification methods. Neural networks are sophisticated techniques that reduce data dimensionality and assist in seismic interpretation for exploration, exploitation and production projects. In essence, neural networks for seismic interpretation map multiple seismic attributes to an output attribute or attributes, that incorporate combined facets of the input data sets that yield a more accurate interpretation of the subsurface. Selecting an appropriate neural network is a crucial to maximize interpretation benefits, yielding an accurate representation of the subsurface, such that it can be used meaningfully to effectively support exploration and production efforts.

A comparison of these two classification techniques is performed using Oligocene Catahoula oil-bearing sands overlying a shallow salt structure along the Gulf Coast, where well control is abundant, and used to ground-truth the seismic classifications of shale, brine-sands and oil sand extent and thickness. Extraction of the seismic facies traces at various wells within the 3D volume permits direct comparison of the two techniques with known geology, permitting an unbiased evaluation, and inferring the advantages of supervised



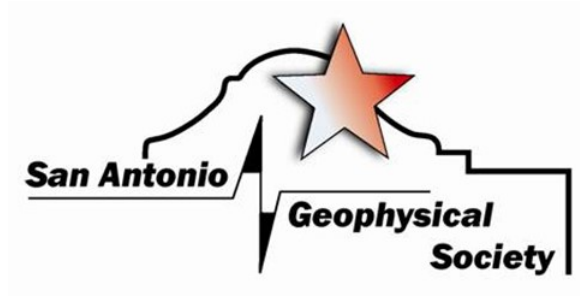
neural networks for the classification of pertinent geologies. The advantages of the supervised network are further demonstrated by horizon and stratal slices that properly identifying productive fault blocks while minimizing false positives of single seismic attributes.

BIOGRAPHY

Dr. Christopher P. Ross is president of Cross Quantitative Interpretation, LP, a quantitative interpretation consulting service company based in Santa Fe, New Mexico. As an applied geophysicist by training, he specializes in technology-driven applications to help mitigate risk and improve drilling decisions for exploration and development projects. His focus areas are predictive analytics for production forecasts in unconventional reservoirs; seismic attributes; AVO conditioning, attributes, modeling and analysis; 1D stochastic, prestack simultaneous and multi-attribute neural network inversions; seismic overpressure analysis; and geostatistical projects.

Chris began his career as a geophysicist with Amoco Production Company, and has worked for various oil and gas companies and contractors as a special projects geophysicist, and as a manager of technical groups. He received a PhD in Geophysics from Georgia Institute of Technology in 1992, a MS in Applied Physics in 1984 from University of New Orleans, and a BS in Geophysics from Virginia Polytechnic Institute in 1982. He is a patent holder, has published a large number of cited technical papers on AVO and neural networks, and has received awards for presentations on similar topics. Recently the AAPG informed Chris that his 2018 AAPG Annual Meeting oral presentation titled *Production Metric Analytics in the Wolfcamp Formation* has been selected to receive the 2019 EMD President's Certificate for Excellence in Presentation Award. Chris is an active member of AAPG, AGU, EAGE, and SEG, and is a Texas Board Certified Geophysicist.

Chris resides in Santa Fe, New Mexico with his wife Ann and their dogs, and enjoys biking, hiking, skiing and the great climate of the nearby Sangre de Cristo and Jemez Mountains.



**SAN ANTONIO GEOPHYSICAL SOCIETY
AFTERNOON MEETING**

Tuesday, April 23, 2019

TOPIC: **Melting of Polar Ice Caps**

LOCATION: **Petroleum Club**

8620 N New Braunfels Ave # 700

San Antonio, TX 78217

TIME: **11:30 AM, Tuesday, April 23, 2019**

COST: \$25.00 for SAGS members with reservations

\$30.00 for non-members or without reservations

\$10.00 for Student members (\$20.00 for first time includes membership)

RESERVATIONS: Please email rsvpsags@gmail.com.

SPEAKER: **Dr. Blake P. Weissling**

Objectives: The South Texas Geological Society, founded in 1929, is a non-profit organization whose purposes are:

- To advance the science of geology;
- To promote the technology of exploring for, finding and producing raw material from the earth, their conservation and propitious use;
- To foster the spirit of scientific research;
- To disseminate facts relating to geological science;
- To inspire and maintain a high standard of professional conduct on the part of its members; and
- To provide the public with means of recognition of adequately trained and professionally responsible geologists.

Membership: Membership includes individuals who are concerned with the professional application of geological sciences and have been judged qualified by the Board of Directors.

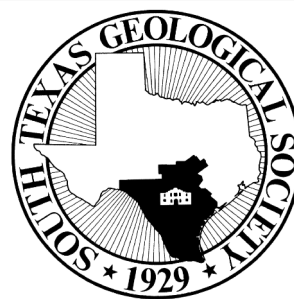
Membership class and related qualifications are detailed in the South Texas Geological Society By-Laws, Article III, and are summarized in the membership requirements section of this application.

Bulletin: The Society's primary publication is the Bulletin of The South Texas Geological Society, published monthly from September through May. The Bulletin provides members with technical articles and news of the Society.

Activities: Activities of the Society include monthly meetings from September through May. Guest speakers provide the foundation for the monthly meetings. Business of the Society is also transacted. Speaker topics and meeting location, times, and dates are announced in the Bulletin and by mail and email notices sent to members. Additional activities include short courses, field trips, seminars and social events.

Classes of Membership and Requirements:

Active: Any person engaged in the practice or teaching of geological science may apply for Active membership, provided the applicant holds a degree in geological science from an acceptable college. The degree



requirement may be waived by the Board of Directors if the applicant has adequate geological experience.

Associate: Associate members are those not eligible for other classes of membership.

Student: Student members must be enrolled in a college, majoring in geological science.

Corporate: A corporate member may be any corporation or organization whose activities and/or interests, at least in part, concern the science of geology and the advancement of geological study within their industry and community. The member will be awarded two (2) designated representatives, both of which must qualify as Active members established under the By-Laws of the Society and both shall be in the employ of the company. The two (2) designated representatives of the corporation shall be exempt from paying individual dues but will have all rights established for individual Active members under Article III, Section 1A. The corporation shall have no voting rights. Membership eligibility, dues and certain rights and privileges of the corporate members require a majority vote of the Board of Directors.

Honorary: Honorary membership is the highest honor which the Society may confer on a member. Nominees for Honorary membership must be voting members of the Society who have distinguished themselves in their services to the Society and to their profession. They must be sponsored by three (3) voting members in good standing in a written recommendation to the Board of Directors. On approval of such recommendation by the Board, nominees will be presented to the voting membership. Election to this high honor shall be by an affirmative vote of two-thirds (2/3) of the voting members of the Society who cast written ballots. Honorary members are not required to pay dues.

Active and Honorary members comprise the voting membership. Associate and Student members are non-voting.

Instructions to Applicants:

Application for membership admissions, reinstatement, or change in status should be made on this form. It is necessary that all relevant parts of this application be filled out completely so that the Board of Directors may judge the eligibility and adequacy of qualifications. Normal processing time is 45 days. Upon election, the Secretary will notify you of your instatement.

Note: Application for Corporate Membership should be made on the separate Corporate Membership Application Form, which can be obtained from the Society Secretary or the website (www.stgs.org).

Reinstatement: Former members who have allowed their memberships to lapse will be reinstated upon payment of their membership dues for one full year, and upon completion and return of this membership application. The signature of three voting members is not required.

Change in Class: Members who wish to change their membership class should complete and return this application and remit the appropriate dues.

Dues: Payment must be included with application. Dues are not refundable after applicant is approved by the Board of Directors. A dues summary is scheduled below.

Dues Summary: Memberships are annual and dues payments are due June 1st each year.

Active and Associate Membership:	\$25.00
Student Membership:	\$10.00
Corporate Membership:	\$450.00

Society Use Only

	Date	Initials
President	_____	_____
Vice-President	_____	_____
Secretary	_____	_____
Treasurer	_____	_____
Editor	_____	_____
Director	_____	_____
Director	_____	_____
Application Received		
Dues Received	_____	_____
Added to Mail List	_____	_____

Complete all parts of this form, obtain proper sponsors' signatures, if available, and return with a check to: **South Texas Geological Society**
P.O. Box 17805
San Antonio, Texas 78217

I am applying for: ☐ Admission ☐ Reinstatement ☐ Change of Status

Type of Membership: ☐ Active ☐ Associate ☐ Student

The Board of Directors, after reviewing this application, may change your membership application status in order to insure proper membership classification.

General Information: (Please type or print)

Name: _____
Last First Middle

Preferred Name: _____ Spouse's Name: _____

Company or School: _____ Present Position: _____

Business or School Address: _____
Street City State Zip

Business Phone: _____ Home Phone: _____

Business Fax: _____ Home Fax: _____

Home Address: _____
Street City State Zip

Preferred Mailing Address: ☐ Business ☐ Home

Email Address: _____

Professional Affiliations: ☐ Active AAPG ☐ SIPES ☐ SAGS

List Others: _____

Record of Experience**Education:** College(s) or University(s)

School	City and State	Degree	Major	Date of Completion

Professional Experience: (If additional space is required use a separate sheet)

Dates Worked: _____

Company: _____ Position: _____

Company's Address: _____

Responsibilities: _____

Dates Worked: _____

Company: _____ Position: _____

Company's Address: _____

Responsibilities: _____

Dates Worked: _____

Company: _____ Position: _____

Company's Address: _____

Responsibilities: _____

Total years of professional geological experience: _____

Endorsement:

Applicant is required to try and secure signatures of three voting members of the South Texas Geological Society. Please sign and date your application for membership in the appropriate space at the bottom of this application. If you do not know any current members, please check the box below and forward your application for membership along with the appropriate fees to the address given on this form.

☐ I do not know three (3) voting members of the South Texas Geological Society.

We, the undersigned, judge the applicant to be qualified for the class of membership in the South Texas Geological Society indicated on this application.

Sponsor's Name (print or type)

Sponsor's Signature

Signature of Applicant: _____

Date of Application: _____

BY-LAWS
of
SOUTH TEXAS GEOLOGICAL SOCIETY
(Incorporated under the Texas Non-Profit Corporation Act)

ARTICLE I
NAME AND LOCATION

Section 1: Name. The name of the corporation is: "SOUTH TEXAS GEOLOGICAL SOCIETY," and the word "SOCIETY" and "CORPORATION" shall be used and construed interchangeably in these by-laws.

Section 2: Location. The principal office of the Society shall be located in the City of San Antonio, Bexar County, Texas.

ARTICLE II
PURPOSE

The corporation is organized and shall be operated as a non-profit corporation exclusively for scientific and educational purposes, including:

1. To advance the science of geology;
2. To promote the technology of exploring for, finding and producing raw materials from the earth, their conservation and propitious use;
3. To foster the spirit of scientific research;
4. To disseminate facts relating to geological science;
5. To inspire and maintain a high standard of professional conduct on the part of its members; and
6. To provide the public with means of recognition of adequately trained and professionally responsible geologists.

No part of the net earnings of the corporation shall inure to the personal benefit of or be distributed to its directors, officers, members, or any other private individuals, except that the corporation shall be authorized and empowered to reimburse expenditures made for it and to pay reasonable compensation for services rendered. The corporation shall not participate in or intervene in (including publishing or distribution of statements) any political campaign on behalf of any candidate for public office; nor shall the corporation engage in any activities that are unlawful under applicable Federal, State or local laws.

ARTICLE III
MEMBERSHIP

Section 1: Classes. The membership of this corporation will consist of five (5) classes as follows:

- A. Active. Any person engaged in the practice or teaching of geological science may apply for Active membership, provided the applicant holds a degree in geological science from an acceptable college. The degree requirement may be waived by the Board of Directors if the applicant has adequate geological experience.
- B. Honorary. Honorary membership is the highest honor which the Society may confer on a member. Nominees for Honorary membership must be voting members of the Society who have distinguished themselves in their services to the Society and to their profession. They must be sponsored by three (3) voting members in good standing in a written recommendation to the Board of Directors. On approval of such recommendation by the Board, nominees will be presented to the voting membership. Election to this high honor shall be by an affirmative vote of two-thirds (2/3) of the voting members of the Society who cast written ballots.
- C. Associate. Associate members are those not eligible for other classes of membership.
- D. Student. Student members must be enrolled in a college, majoring in geological science.

- E. **Corporate.** A corporate member may be any corporation or organization whose activities and/or interests, at least in part, concern the science of geology and the advancement of geological study within their industry and community. The member will be awarded two (2) designated representatives, both of which must qualify as active members established under the by-laws of the society and both shall be in the employ of the company. The two (2) designated representatives of the corporation shall be exempt from paying individual dues but will have all rights established for individual active members under Article III, Section 1A. The corporation shall have no voting rights. Membership eligibility, dues and certain rights and privileges of the corporate member require a majority vote of the Board of Directors.
- F. **Emeritus.** Emeritus members may be any member who has reached the age of 70 years old and has been a member of the South Texas Geological Society for a minimum of 10 years, cumulative. The dues amount for such a membership will be set by the Board of Directors and be a one-time membership fee payable upon approval, rather than an annual membership fee option.

Section 2: Voting Members. Active and Honorary members will comprise the voting membership. Associate and Student members are non-voting.

Section 3: Election to Membership. Applications for all classes of membership shall be signed by three (3) voting members in good standing with the Society and submitted to the Board of Directors. All members, except Honorary members, shall be approved by a three-fourths (3/4) majority of the Board of Directors.

Section 4: Special Recognition. The Society may, by recommendation of the Board of Directors, confer special recognition upon an individual or organization, for which membership in the Society is not required.

Section 5: Expulsion. Each member shall adhere to the highest standards of professional ethics. If, after due investigation and hearing, a member is found to have violated these standards, he may be admonished, suspended, allowed to resign, or expelled from the Society. Grievance procedures should follow, as applicable, those adopted by the American Association of Petroleum Geologists for action in similar cases. Any decision resulting from such a grievance procedure shall be made known to the subject member by registered, return-receipt mail.

ARTICLE IV **OFFICERS**

Section 1: Officers. The officers of the Society shall consist of a President, a President-Elect, a Vice President, a Secretary, a Treasurer, and an Editor.

Section 2: President. The duties of the President shall be to preside at all meetings of the members and/or Board of Directors; he shall be the chief executive officer of the Society and shall have general and active management of the business of the Society.

Section 3: President-Elect. The President-Elect shall serve for one year as such and in the following year, he shall assume the office of President. He shall have no administrative authority except as a member of the Board of Directors and shall not be responsible for any committees or functions of the society during his term. He shall acquaint himself with all the details of the office of President and generally prepare himself to serve as President. He shall be responsible for the preparation of the budget for the coming fiscal year for approval by the Board of Directors.

Section 4: Vice President. The Vice President shall be vested with all powers and shall perform all the duties of the President in the President's absence; he shall be responsible for the arrangements for the monthly meeting programs and shall also perform such other duties as may be prescribed by the Board of Directors.

Section 5: Secretary. The Secretary shall keep accurate minutes of all meetings of the Board of Directors and a list of the members, according to their classification, and shall perform such other duties as may be prescribed by the Board of Directors.

Section 6: Treasurer. The Treasurer shall keep, or cause to be kept, full and accurate accounts of the receipts and disbursements in books belonging to the Society, and shall deposit, or cause to be deposited, all money and other valuable effects in the name and to the credit of the Society, in such depositories as may be designated by the Board of

Directors. He shall disburse the funds of the Society as may be ordered by the Board, or the President, taking proper vouchers for such disbursements, and shall render to the President and Directors at the regular meetings of the Board, or whenever they may require it, an account of all his transactions as Treasurer and of the financial condition of the Society.

Section 7: Editor. The Editor shall cause to be published, from time to time as designated by the Board of Directors, a bulletin or technical journal, the editorial content of which shall be pertinent to the purposes of this Society as construed by the Board of Directors.

Section 8: Treasurer-elect. The Treasurer-Elect will be elected during even-numbered years. He shall serve for one year as such and in the following two years, he shall assume the office of Treasurer. He shall have no administrative authority and shall not be responsible for any committees or functions of the society during his term. He shall acquaint himself with all the details of the office of Treasurer and generally prepare himself to serve as Treasurer. The Treasurer-elect will not serve as a member of the board.

Section 9: Absence of Officer. In the absence of any officer of the Society, the Board of Directors may delegate the duties, but not the voting rights, of such office to any other officer or to any director for the duration of the absence.

ARTICLE V

BOARD OF DIRECTORS

Section 1: Constituents. The Board of Directors will consist of the Officers, the Past President, and two additional elected Directors.

Section 2: Powers. The property and affairs of the Society shall be managed, controlled and administered by the Board of Directors. The Board of Directors shall carry out the purposes of the Society, and subject only to the limitations imposed by law and these by-laws, may exercise all the powers of the Society.

Section 3: Qualifications. All directors of this Society must be voting members of the Society.

Section 4: Term of Office. The term of office of each Director, along with the Treasurer-elect, shall be one year and shall coincide with the fiscal year of the Society as defined in these by-laws. The Treasurer shall serve a term of two-years.

Section 5: Vacancies. In case of any vacancy in the Board of Directors, except for the President-Elect, the remaining Directors may, at a meeting called for this purpose, elect a member to the board to hold office for the unexpired term of his predecessor, and until his successor is elected. If the President-Elect position becomes vacant, a President for the succeeding year shall be nominated and elected along with the other members of the Board of Directors at such time and manner as is provided for their election in these by-laws.

ARTICLE VI

MEETINGS OF THE BOARD OF DIRECTORS

Section 1: Annual Meeting. There shall be an annual transitional meeting of the outgoing and incoming Board of Directors held following the annual May meeting of the members of the Society and before June 30.

Section 2: Monthly Meetings. Regular monthly meetings of the Board of Directors shall be scheduled by resolution of the Board of Directors.

Section 3: Special Meetings. Special meetings of the Board of Directors may be called by the President, or by the Vice-President, or by any two directors upon giving adequate notice in advance to each director. For emergency purposes only, the Board of Directors may conduct special meetings through electronic means, including but not limited to email, secure on-line forums, and teleconferences, according to the same quorum and voting requirements set forth in these By-laws for physical meetings of the Board of Directors. In the case of voting by email, the President shall set a reasonable deadline for vote submittal.

Section 4: Quorum. A simple majority of the Directors of the Society shall be present at any Board of Directors meeting to constitute a quorum for the transaction of any society business.

Section 5: Business Transaction. At all meetings of the Board of Directors where business is transacted, a majority of the members of the Board of Directors present must vote in the affirmative in order to pass any motion duly made and seconded.

Section 6: Proxies. The use of proxies in voting procedures will not be allowed.

ARTICLE VII **MEETINGS OF THE** **MEMBERS**

Section 1: Annual Meeting. An annual meeting of the members shall be held during the month of May at a time and place to be designated by the Board of Directors. Announcement of the newly elected officers and directors shall be made at this annual meeting.

Section 2: Monthly Meetings. There shall be regular monthly meetings of the membership scheduled by the Board of Directors for the purpose of carrying out the objectives of the Society.

Section 3: Vote Entitlement. Each voting member, as defined in these by-laws, shall be entitled to one (1) vote, either in person at a meeting, or by mail or online ballot.

Section 4: Proxies. The use of proxies in voting procedures will not be allowed.

Section 5: Quorum and Business Transaction. At any meeting of the members, the presence of one-fifth (1/5) of the total voting members in good standing shall constitute a quorum for the transaction of any business whatsoever; and one-fifth (1/5) of the total voting members in good standing must vote affirmatively for any provisions before it shall be deemed to have passed.

ARTICLE VIII **ELECTION OF OFFICERS AND DIRECTORS**

Section 1: Nominating Committee. Before the regular monthly meeting in January of each year, the President, with the approval of the Board of Directors, shall appoint a nominating committee consisting of three (3) voting members in good standing who are not officers or directors.

Section 2: Candidates. At the regular monthly meeting in March of each year, the nominating committee shall present to the Society the names of at least two candidates for the office of President-Elect and Director; at least two candidates for the office of Vice President and Director; at least two candidates for the office of Secretary and Director; at least one candidate for the office of Editor and Director; and at least two candidates for each of the two non-officer posts on the Board of Directors of the Society. During even-numbered years, the committee shall present at least two candidates for Treasurer-elect, which after a one-year term shall serve as Treasurer and Director for two years.

Section 3: Nominations from the Floor. At that March meeting, the President shall call for additional qualified nominations from the floor by voting members.

Section 4: Ballot. All nominations shall then be placed on the official ballot, which shall have additional space for write-in candidates, and the official ballot shall be promptly mailed to each member eligible to vote.

Section 5: Election. The ballots shall be tabulated by the nominating committee and any qualified candidate receiving a majority of the votes cast shall be declared elected.

Section 6: Run-off. When no qualified candidate receives a majority vote, a run-off of the two having the greatest plurality shall be held promptly by mail ballot, and the candidate receiving a majority of the votes shall be declared elected.

Section 7: Tie-Break. The Board of Directors shall break any tie, either in the main election or in a run-off election, by voting in a secret ballot.

Section 8: Announcement of Results. The results of the balloting shall be announced at the annual meeting of the members of the Society in May, and the newly elected officers shall take office effective June 1.

ARTICLE IX
RESIGNATION AND REMOVAL OF OFFICERS AND DIRECTORS

Section 1: Resignation. Any officer or director who wishes to resign is requested to give written notice to the President or to the Secretary. Such resignation shall take effect at the time specified by the resigning officer or director.

Section 2: Removal. Any officer or director may be removed from office by affirmative vote of at least one-half (1/2) of all members eligible to vote in a mail ballot. This ballot may be called by the Board of Directors or by written petition filed with the Secretary of the Society by at least one-fourth (1/4) of all members eligible to vote. The officer or director to be removed shall be notified of such action by registered, return-receipt mail.

ARTICLE X
FISCAL YEAR

The fiscal year of the Society shall commence on the 1st day of June and terminate on the 31st day of May of the following year.

ARTICLE XI
DUES

Section 1: Setting of Dues. Dues shall be set by a majority vote of the Board of Directors.

Section 2: Dues Exemption. Honorary members shall not be required to pay dues.

Section 3: Dues Payment. Each year, a dues statement shall be mailed to every member, except Honorary Members, by May 1, and the dues payment shall be due on June 1. If the dues of any member remain unpaid after October 1, a second dues notice shall be sent to that member. If the dues of any member remain unpaid after December 1, then the name of that member shall be dropped from the rolls of the Society.

Section 4: Good Standing. A member in good standing is a member whose dues have been paid currently.

ARTICLE XII
COMMITTEES

The Board of Directors, by resolution adopted by a majority of directors in office, may designate one or more committees consisting of two or more persons, and delegate to any such committee such responsibility and authority as the resolution may provide in the investigation and study of any special project, program or action on behalf of the Society and to report back to the Board the results therefrom with the committee's recommendation, if any, to the Board for action on or in relation to its report. The designation of any such committee, however, shall not operate to relieve the Board of Directors or any individual Board member of any responsibility imposed upon it or upon him by law.

ARTICLE XIII
AMENDMENT OF BY-LAWS

Amendments to these by-laws may be proposed at any time by the Board of Directors or by petition signed by at least one-tenth (1/10) of the voting members of the Society. Notice of a proposed amendment must be given (1) at the two regular meetings of the membership immediately prior to distribution of ballots and (2) in writing at least two weeks before ballots are due. Amendments will be adopted by the affirmative vote of three-fourths (3/4) of the voting members in good

standing that cast written ballots.

These by-laws were ADOPTED AND PROMULGATED at a duly called and regularly held meeting of the members of the Society.

Last amended: May 2019



Advertiser	Page
Ageron Energy	21
BlackBrush Oil & Gas	5
Metano Energy	5
Petrophysics	20
Sage Energy	20
Thunder Exploration, Inc.	5

To Our Advertisers:

On Behalf of the South Texas Geological Society, we would like to take this opportunity to thank you for your contributions to the bulletin.

Your support allows us to provide our members with a high quality publication.

Thank you very much!

To Our Members and Readers:

Please recognize and extend your appreciation to the various bulletin advertisers by either using their services or recommending them to others whenever possible.

*If you are interested in having ad space, please contact
STGS Editor.*

President	Tom Fett, <i>Independent Consultant</i>	830-612-2929	medinalake@msn.com
Past President (2016-18)	Allan Clark, <i>USGS, Texas Water Science Center – South Texas Program</i>	210-691-9228	allanclark48@gmail.com
President Elect (2018-19)	David Clay	210-824-3100	david@aeatx.com
Vice President	Tyler Quade	832-654-0516	tyler@windridgeoil.com
Secretary	Kathryn Branley	409-926-9743	kathryn.branley@gmail.com
Treasurer	Bradley Arnett, <i>GulfTex Energy LLC</i>	210-402-9600	barnett@gulftexenergy.com
Bulletin Editor	Alyssa Kirkendall, <i>UTSA</i>	512-592-2924	alyssakirkendall@gmail.com
Webmaster	Tim McGovern, <i>Geological Consultant</i>	210-698-6629	tim@tjmcgovern.com
Nominating Chair	John Long, <i>Independent</i>	210-276-0318	johnlonggeologist@gmail.com
Legacy Committee	Bonnie Weise, <i>Geological Consultant</i>	210-402-0957	bweise1@sbcglobal.net
Inter-Society Liaison	Alf Hawkins, <i>Hawkins Remote Sensing & Exploration</i>	210-829-5530	hawkinsalf@hotmail.com
Field Trips	Tom Fett, <i>Independent Consultant</i>	830-612-2929	medinalake@msn.com
Community Outreach/Youth Service	John Casiano, <i>Abraxas Petroleum</i>		jasiano@abraxaspetroleum.com
Christmas Party	Margaret R. Perales-Graham, <i>MPG Petroleum</i>	210-828-7770	mpgraham@mpgpetroleum.com
Executive Committee	Tim McGovern, <i>Geological Consultant</i>	210-698-6629	tim@tjmcgovern.com
	Mark Brown	888-828-6454	jmarkbrown@outlook.com
Scholarship Committee	Debbie Dorsett, <i>Geological Engineer</i>	210-379-5511	dorsettge@gmail.com
	Ken Helm, <i>Hurd Enterprises, Ltd.</i>	210-829-2234	kenh@hurjenterprises.com
	Ben Boyer, <i>Hurd Enterprises, Ltd.</i>	210-829-2269	benb@hurjenterprises.com
	Mark E. Thompson, <i>Independent</i>	210-415-3508	oilmanmet@yahoo.com
	Tom Fett, <i>Independent Consultant</i>	830-612-2929	medinalake@msn.com
Jones-Amsbury Grant	Mark E. Thompson, <i>Independent</i>	210-415-3508	oilmanmet@yahoo.com
AAPG Delegates	Ken Helm, <i>Hurd Enterprises, Ltd.</i>	210-829-2234	kenh@hurjenterprises.com
	Travis Garcia	210-384-5068	
	(Alternate) Tyler Quade, <i>Windridge Oil Company</i>	832-654-0516	tyler@windridgeoil.com
AAPG Liaison	Tom Ewing, <i>Frontera Exploration Consultants</i>	210-494-4526	tewing@fronteraexploration.com
Secretarial Services	Doreen Brooner, <i>Professional Secretarial Svcs</i>	210-822-9092	doreenbrooner@hotmail.com
Accountants	Gibbons, Vogel & Company	210-826-4347	