

Dale Edward Bird

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Over thirty years experience in acquisition, processing, interpreting and marketing geophysical data, with an emphasis on gravity and magnetic data; Ph.D. in Geophysics; a volunteer in local and international earth science societies; a functional understanding of Spanish; and an avid chess player.

Interpretation experience includes work in many basins, globally, including cratonic sag, rift, foreland, and passive margin environments. Research interests include regional geology / plate tectonics and marine geophysics, especially along continental margins and plate boundaries.

EXPERIENCE

Sole Proprietor. Bird Geophysical 1997-present

- Consultancy providing potential fields data interpretation and management services to the petroleum exploration industry.
- Non-exclusive projects include:
 - Gulf of Mexico Evolution and Structure (GoMES) interpretation
 - Western Caribbean Plate interpretation
 - Southeast Asian basins interpretations; two phases: 1) Sunda Shelf and South China Sea, and 2) Central Indonesia
 - Reprocessed GEODAS open-file marine gravity and magnetic data; six areas: 1) Gulf of Mexico, 2) Caribbean, 3) Brazil & Argentina, 4) West Africa, 5) East Africa, and 6) India
 - Global Seismic refraction Catalog (GSC) ongoing joint project with the U.S. Geological Survey to compile and digitally capture published seismic refraction stations worldwide

Adjunct Professor. University of Houston, Department of Earth & Atmospheric Sciences 2005-present

- Teach graduate-level semester course: *Basin Studies using Gravity & Magnetic Data*
- Participate with University of Houston faculty teaching short courses for industry professionals, and with invited programs at Universities abroad

General Manager, Hydrocarbons. Aerodat, Inc. 1994-1997

- Established and managed the Houston office for a major airborne geophysical survey company, headquartered in Toronto Canada
- Expanded the scope of the company's activities in the oil and gas industry worldwide including aeromagnetic surveys in North America, South America, and Africa
- Successfully negotiated agreements for aeromagnetic and aerogravity surveys with international oil & gas companies and Aerodat joint venture partners

Chief Geophysicist, Americas. World Geoscience, Inc. 1992-1994

- Key marketer for North and South America generating sufficient revenue to stabilize the Houston cost center
- Successfully negotiated agreements for proprietary and multi-client speculative geophysical surveys over North and South America and Eastern Europe with international oil & gas companies

- Geophysicist. Marathon Oil Company*** 1989-1992
- Reprocessed select 2D and 3D seismic lines for Amplitude-Versus-Offset (AVO) analyses
 - Integrated seismic and potential fields data with geologic information for oil and gas exploration, domestic and international
- Geophysicist. Digicon, Inc.*** 1988-1989
- Participated in all phases of processing 2D and 3D marine reflection seismic data
- Geophysicist. Aero Service Division, Western Atlas International*** 1981-1988
- Interpreted aeromagnetic data for hydrocarbon and mineral exploration
 - Analyzed topographic and geologic maps for U.S. Geological Survey airborne radar mapping
 - Compiled and processed aeromagnetic and marine seismic navigation data
- Imagery Interpreter. U.S. Army 1st Military Intelligence Battalion, Fort Bragg*** 1976-1979
- Debriefed flight personnel and analyzed various imagery formats including vertical, oblique, panoramic and SLAR (Side Looking Airborne Radar) to identify enemy vehicles and equipment
 - Prepared and sent timely reports of image interpretations to the proper authorities assuring up-to-date, concise knowledge of enemy equipment and positions
 - Studied imagery for terrain and cultural identification as well as critical measurements of cultural features utilizing photogrammetric skills

EDUCATION

Doctor of Philosophy, May 2004 - Geophysics, University of Houston, Houston, Texas
Master of Science, December 1991 - Geophysics, University of Houston, Houston, Texas
Bachelor of Science, August 1986 - Geophysics, University of Houston, Houston, Texas
Imagery Interpretation and Photogrammetry, April 1977 - US Army Intelligence Center and School, Fort Huachuca, Arizona

AFFILIATIONS

American Association of Petroleum Geologists - AAPG
American Geophysical Union - AGU
European Association of Geoscientists and Engineers – EAGE
Geological Society of America - GSA
Geophysical Society of Houston - GSH (past Potential Fields Group Chair; past Editor)
Houston Geological Society - HGS (past International Explorationists Group Chair)
National Eagle Scout Association - NESA
Society of Exploration Geophysicists – SEG (past Gravity and Magnetics Committee Chair)
University of Houston Geoscience Alumni Association – UHGAA (past President; past Vice President)

AWARDS

Bonarelli Award, 2011 (Best oral presentation, EAGE Annual Conference, 2010) – European Association of Geoscientists & Engineers
Outstanding Student, 2002 – Houston Geological Society

PUBLICATIONS

- Bird, D. E., Burke, K., Hall, S. A., and Casey, J. F., 2011, Tectonic evolution of the Gulf of Mexico basin: *in*, Buster, N. A., and Holmes, C. W. (editors), Tunnell, J. W., Felder, D. L., and Earle, S. A. (series editors), *The Gulf of Mexico origin, waters, and biota. Volume 3, geology*: Texas A&M University Press, pp. 3-16.
- Dinkelman, M. G., and Bird, D. E., 2011, Offshore Nova Scotia: Integrating Salt Deformation Styles, Basin Structuring and Distribution of Crustal Terranes (abstract): American Association of Petroleum Geologists Annual Meeting., Houston, TX, 984694.
- Bird, D. E., and Hall, S. A., 2010, Early seafloor spreading in the South Atlantic Ocean: M-series isochrones north of the Rio Grande Fracture Zone? 2nd Conjugate Margins Conference, Lisbon, Portugal.
- Dinkelman, M. G., and Bird, D. E., 2010, Offshore Nova Scotia: basin framework of the slope diapiric province (abstract): 2nd Conjugate Margins Conference, Lisbon, Portugal.
- Bird, D. E., and Hall, S. A., 2010, South Atlantic kinematics and the evolution of Tristan da Cunha hotpot tracks: 72nd European Association of Geoscientists & Engineers Conference & Exhibition, Barcelona.
- Dinkelman, M. G., Granath, J. W., Christ, J. M., Emmet, P. A., and Bird, D. E., 2010, Full 40 km crustal reflection seismic datasets in several Indonesian basins (abstracts): Eos, Transactions, American Geophysical Union, vol. 91, Fall Meeting Supplement.
- Granath, J. W., Christ, J. M., Dinkelman, M. G., Emmet, P. A., and Bird, D. E., 2010, Full crustal 40 km PSDM seismic profiling (“BightSPAN™”) of the Ceduna subbasin, Great Australian Bight margin of South Australia (abstract): Eos, Transactions, American Geophysical Union, vol. 91, Fall Meeting Supplement.
- Helwig, J., Ady, B., Kumar, N., Granath, J. W., Dinkelman, M. G., Bird, D. E., and Emmet, P. A., 2010, Reconstructing conjugate margins of the Canada-Amerasian basin: new tectonic constraints from deep seismic data and gravity profiles (abstract): Eos, Transactions, American Geophysical Union, vol. 91, Fall Meeting Supplement.
- Bird, D. E., and Hall, S. A., 2009, Central South Atlantic kinematics: a 3D ocean basin-scale model of the Walvis Ridge and Rio Grande Rise (abstract): Eos, Transactions, American Geophysical Union, vol. 90, Fall Meeting Supplement, T51A-1487.
- Dinkelman, M. G., Granath, J., Bird, D., Helwig, J., Kumar, N., and Emmet P., 2009, Predicting the brittle-ductile (b-d) transition in continental crust through deep, long offset, prestack depth migrated (PSdM), 2-d Seismic data (abstract): American Association of Petroleum Geologists International Conference, Rio de Janeiro, P41.
- Bird, D. E., Burke, K., Hall, S. A., and Casey, J. F., 2008, Triassic – Jurassic kinematics of the Gulf of Mexico, Central Atlantic Ocean, and North America (abstract): Geological Society of America Annual Meeting, 289-2.
- Altamira, A., Bird, D. E., and Burke, K., 2008, Role of the Northern Caribbean Plate Boundary Zone In Concentrating Movement Between the Americas during the Past 70 Million Years (abstract): Geological Society of America Annual Meeting, 154-12.
- Bird, D. E., and Burke, K., 2008, Geodynamic evolution of extended rift terranes (abstract): Rifts Renaissance Conference, Geological Society of London and SEPM, Houston, Texas.
- Bird, D. E., Hall, S. A., Burke, K., Casey, J. F., and Sawyer, D. S., 2008, Mesozoic seafloor spreading history of the Central Atlantic Ocean: Conjugate Margins Conference, Dalhousie Univ., Halifax.
- Bird, D. E., Burke, K., Hall, S. A., and Casey, J. F., 2008, Triassic – Jurassic kinematic relationships between the Gulf of Mexico, Central Atlantic Ocean, and Mexico (abstract, invited): Eos, Transactions, American Geophysical Union, vol. 89, Joint Assembly Supplement, GP41D, T33A-01.
- Dinkelman, M. G., Granath, J. W., Emmet, P. A., and Bird, D. E., 2008, Deep crustal structure of East Java Sea back-arc region from long-cable 2D seismic reflection data integrated with potential fields data:

- Proceedings of the Indonesian Petroleum Association 32nd Annual Convention, Publications on CDROM, Paper IPA08-G-153, 6 p.
- Bird, D. E., Radovich, B. J., and Moon, J., 2007, Integrated Seismic and Gravity Data Modeling: Basement Structure in the Gulf of Mexico (abstract): Gulf Coast Association of Geological Societies, vol. 57, pp. 47-53.
- Radovich, B. J., Moon, J., Connors, C. D., and Bird, D. E., 2007, Insights into Structure and Stratigraphy of the Northern Gulf of Mexico from 2D Pre-Stack Depth Migration Imaging of Mega-Regional Onshore to Deep Water, Long-Offset Seismic Data (abstract): Gulf Coast Association of Geological Societies, vol. 57, pp. 633-637.
- Hall, S. A., and Bird, D. E., 2007, Tristan da Cunha hotspot tracks and the seafloor spreading history of the South Atlantic (abstract): Eos, Transactions, American Geophysical Union, vol. 88, Fall Meeting Supplement, V31F-04.
- Bird, D. E., Hall, S. A., Burke, K., Casey, J. F., and Sawyer, D. S., 2007, Early Central Atlantic Ocean seafloor spreading history: *GeoSphere*, vol. 3, pp. 282-298.
- Dragoi, D., Hall, S. A., and Bird, D. E., 2006, Geophysical investigation of continental margin development, and early spreading history of the South Atlantic south of the Walvis Ridge/Rio Grande Rise (abstract): Eos, Transactions, American Geophysical Union, vol. 87, Fall Meeting Supplement, G53B-0908.
- Bird, D. E., and Burke, K., 2006, Pangea breakup: Mexico, Gulf of Mexico, and Central Atlantic Ocean: *in*, Expanded Abstracts of the Technical Program: Society of Exploration Geophysicists 76th Annual International Meeting and Exposition, pp. 1013-1016.
- Altamira, A., Burke, K., and Bird, D. E., 2005, Testing for an Absence of Regional Shortening (or Extension) Across the Caribbean – South American Plate Boundary Zone (PBZ) (abstract): Eos, Transactions, American Geophysical Union, vol. 86, Fall Meeting Supplement.
- Bird, D. E., 2005, Jurassic to present tectonic plate motions: North America, South America, Africa, and the Caribbean (abstract): Geophysical Society of Houston, vol. 40, no. 3, p. 9.
- Bird, D. E., Burke, K., Hall, S. A., Casey, J. F., and Sawyer, D. S., 2005, Callovian – Oxfordian and earlier Central Atlantic ridge jumps (abstract): American Association of Petroleum Geology International Conference, Paris, p. A9.
- Bird, D. E., Burke, K., Hall, S. A., and Casey, J. F., 2005, The tectonic history of the Gulf of Mexico (abstract): Eos, Transactions, American Geophysical Union, vol. 86, no. 18, Joint Assembly Supplement, p. JA9.
- Bird, D. E., Hall, S. A., Burke, K., and Casey, J. F., 2005, Late Jurassic – Early Cretaceous tectonic reconstructions of the Central and South Atlantic Oceans (abstract): Eos, Transactions, American Geophysical Union, vol. 86, no. 18, Joint Assembly Supplement, pp. JA508-JA509.
- Bird, D. E., Burke, K., Hall, S. A., and Casey, J. F., 2005, Gulf of Mexico tectonic history: Hotspot tracks, crustal boundaries, and early salt distribution: American Association of Petroleum Geologists Bulletin, vol. 89, pp. 311-328.
- Bird, D. E., Hall, S. A., Burke, K., Casey, J. F., and Sawyer, D. S., 2004, Early seafloor ridge jumps in the Central Atlantic Ocean (abstract): Eos, Transactions, American Geophysical Union, vol. 85, no. 47, Fall Meeting Supplement, p. F1717.
- Bird, D. E., 2004, Jurassic tectonics of the Gulf of Mexico and central Atlantic Ocean: Ph.D. Dissertation, University of Houston, 173 pp.
- Steffens, G. S., Biegert, E. K., Sumner, H. S., and Bird, D. E., 2003, Quantitative bathymetric analyses of selected deepwater siliciclastic margins: receiving basin configurations for deepwater fan systems: *Marine and Petroleum Geology*, vol. 20, nos. 6-8, pp. 547-561.
- Bird, D. E., 2003, Gulf of Mexico evolution and structure: *Houston Geological Society Bulletin*, vol. 45, no. 7, pp. 25-27.
- Bird, D. E., 2002, Shear margins: continent – ocean transform and fracture zone boundaries: *in*, Thomasson, M. R., and Lawyer, L. C. (editors), *Geologic Columns of The Leading Edge*, Society of

- Exploration Geophysicists: American Association of Petroleum Geologists Open File Publication no. 7, pp. 79-84.
- Bird, D. E., 2002, Gulf of Mexico evolution: a basin-wide, well and seismic refraction supported gravity and magnetic interpretation (abstract): American Association of Petroleum Geologists Annual Meeting., Houston, TX, p. A19.
- Walraven, D., Drummond, J., Rodriguez, A., Kue, C. –W., Chang, T., and Bird, D., 2002, Integrated seismic illumination and gravity modeling in refinement of a subsalt interpretation: *in*, Expanded Abstracts of the Technical Program: Society of Exploration Geophysicists 72nd Annual International Meeting and Exposition, pp. 621-624.
- Bird, D. E., 2001, Shear margins: continent – ocean transform and fracture zone boundaries: *The Leading Edge*, vol. 20, no. 2, pp. 150-159.
- Bird, D. E., Hall, S. A., Casey, J. F., and Burke, K., 2001, Geophysical evidence for a possible late Jurassic mantle plume in the Gulf of Mexico (abstract): *Eos, Transactions, American Geophysical Union*, vol. 82, no. 47, p. F1185.
- Flanagan, G. Campbell, C. L., Kilsdonk, B., Maler, M. O., Bird, D. E., and Kirkham, K. L., 2001, Integrated gravity, magnetic and seismic study offshore Brazil (abstract): 7th International Congress of the Brazilian Geophysical Society, Salvador, Brazil.
- Bird, D. E., Hall, S. A., Casey, J. F., and Millegan, P. S., 1999, Tectonic evolution of the Grenada Basin: *in*, Mann, P. (editor, Hsu, K. J., Series Editor), *Caribbean Basins. Sedimentary Basins of the World*, 4: Elsevier Science B. V., pp. 389-416.
- Bird, D. E., and Gibson, R. I., 1999, Gravity and magnetic interpretation of the Sunda Shelf and South China Sea: *in*, Expanded Abstracts of the Technical Program: Society of Exploration Geophysicists 69th Annual International Meeting and Exposition, vol. 1, pp. 407-410.
- Bird, D. E., and Nelson, J. R., 1999, Aeromagnetic interpretation of basement structure using over 3,000 control wells, central Alberta: a case history: *in*, Expanded Abstracts of the Technical Program: Society of Exploration Geophysicists 69th Annual International Meeting and Exposition, vol. 1, pp. 347-349.
- Gibson, R. I., and Bird, D. E., 1999, Southeast Asia gravity and magnetics interpretation: a tour of significant basins and regions (abstract.): *Geophysical Society of Houston*, vol. 33, no. 5, p. 6, *and* *Houston Geological Society*, vol. 41, no. 5, p. 53.
- Bird, D. E., Hall, S. A., Casey, J. F., and Millegan, P. S., 1998, Geophysical evidence for near east-west sea floor spreading and the formation of the Grenada Basin (abstract): *in*, Ali, W., Paul, A., and On, V. Y., (editors), *Transactions of the 3rd Geological Conference of the Geological Society of Trinidad and Tobago and the 14th Caribbean Geological Conference, July 16-25, 1995: Geological Society of Trinidad and Tobago, Port-of-Spain*, vol. 2, p. 681.
- Bird, D. E., Hall, S. A., Casey, J. F., and Millegan, P. S., 1998, Interpretation of magnetic data at low latitudes: potential pitfall: *in*, Gibson, R. I., and Millegan, P. S. (editors), *Gravity and Magnetic Exploration Case Histories: American Association of Petroleum Geology, Studies in Geology*, no. 43, *and* *Society of Exploration Geophysicists, Geophysical Reference Series*, no. 8, pp. 53-57.
- Millegan, P. S., and Bird, D. E., 1998, How basement lithology changes affect magnetic interpretation: *in*, Gibson, R. I., and Millegan, P. S. (editors), *Gravity and Magnetic Exploration Case Histories: American Association of Petroleum Geologists, Studies in Geology*, no. 43, *and* *Society of Exploration Geophysicists, Geophysical Reference Series*, no. 8, pp. 40-44.
- Gibson, R. I., and Bird, D. E., 1998, Exploration takes to the skies: *GIS Asia Pacific*, Oct./Nov., pp. 22-24.
- Bird, D. E., 1997, Geology should rule interpretation: *American Association of Petroleum Geologists Explorer*, vol. 18, no.6, pp. 26-27.
- Bird, D. E., 1997, Primer: interpreting magnetic data: *American Association of Petroleum Geologists Explorer*, vol. 18, no. 5, pp. 18-21.
- Bird, D. E., 1994, Editor's message: *Geophysical Society of Houston*, vol. 30, no. 8, p. 1.
- Bird, D. E., Hall, S. A., Casey, J. F., and Millegan, P. S., 1993, Interpretation of magnetic anomalies over the Grenada Basin: *Tectonics*, vol. 12, no. 5, pp. 1267-1279.

- Bird, D. E., 1991, An integrated geophysical interpretation of the Grenada Basin: MS Thesis, University of Houston, Houston, Texas, 316 p.
- Bird, D. E., 1991, An integrated geophysical interpretation of the Grenada Basin, eastern Caribbean (abstract.): Geophysical Society of Houston, vol. 27, no. 9, p. 8.
- Bird, D. E., Hall, S. A., Casey, J. F., and Millegan, P. S., 1991, Integrated geophysical interpretation of the Grenada Basin: *in*, Expanded Abstracts of the Technical Program: Society of Exploration Geophysicists 61st Annual International Meeting and Exposition, pp. 172-175.