YORKSHIRE GEOLOGICAL SOCIETY President: Dr Andrew Howard





THE NORTH ATLANTIC: ORIGIN TO ENERGY

Saturday 28th January 2017, 2.00 pm - 5.00 pm Arthur Holmes Lecture Theatre, Department of Earth Sciences Science Labs Durham University, Durham, DHI 3LE

Joint Meeting with the North Eastern Geological Society

Members: Please note your YGS membership number which is printed above your name on this Circular's envelope. You will need this to access the Proceedings online through the Lyell Collection (see page 16).

www.yorksgeolsoc.org.uk

NON MEMBERS WELCOME

	THE NORTH ATLANTIC: ORIGIN TO ENERGY Saturday 28th January 2017, 14.00 - 17.00. Arthur Holmes Lecture Theatre, Department of Earth Sciences Science Labs, Durham University
14.00	Introduction and Society business Dr Andrew Howard, President
14.10	The North Atlantic: Exceptional, or the Rule? Gillian R. Foulger and the North Atlantic Working Group Dept. Earth Sciences, Durham University, Durham, U.K.
14.50	The Wilson Cycle Origin of the Jan Mayen Microplate Christian Schiffer ¹ , Alex Peace ¹ , Jordan Phethean ¹ , Laurent Gernigon ² , Kenni Petersen ³ , Ken McCaffrey ¹ , Gillian R. Foulger ¹ ¹ Dept. Earth Sciences, Durham University, Durham, U.K. ² Norwegian Geological Survey (NGU), Trondheim, Norway ³ Dept. of Geoscience, Aarhus University, Denmark
15.20	Break, with coffee, tea and juice available
15.40	Arctic-Atlantic break-up stages, and their control on petroleum systems and resources Prof. Tony Doré of Statoil
16.20	Two geophysical things from Europe (Scotland and Denmark) that tell us something about Iceland and the opening of the North Atlantic Randell Stephenson, School of Geosciences, University of Aberdeen, Aberdeen, Scotland
16.50	Discussion and final remarks

THE NORTH ATLANTIC: EXCEPTIONAL, OR THE RULE?

Gillian R. Foulger & the North Atlantic Working Group Dept. Earth Sciences, Durham University

The tectonics of the North Atlantic is hugely interesting, hugely diverse, exceptionally well studied and exceptionally important to understand because of its control of valuable hydrocarbon resources. The region contains a plethora of features that include extinct ridges, volcanic margins, and a shallow bathymetric ridge extending from Greenland to the Faroe Islands. On this sits the unique island of Iceland, an expanse of basalt exposing ~ 20 spreading segments and over 30 central volcanoes. North of the Greenland-Faroe ridge is a submerged continental micro-continent that may be intensely intruded by basalt dykes and, in its time, have represented a diffuse spreading plate boundary. In addition there are extinct ridges northeast of Iceland and west of Greenland, in the Labrador Sea and Baffin Bay. Fan-shaped spreading may have occurred in places. South of the Greenland-Faroe ridge, the Reykjanes Ridge as a whole is oblique to the plate motion direction and appears to be inexorably migrating east by means of a series of southward-migrating propagators. These complexities seem very far from the widespread, simplistic picture many people have of continental breakup and growth of an ocean by sea-floor spreading, and suggest that the North Atlantic is very unusual. However, it may not be as unusual as it first appears, and imprisoned in this bewildering array of seemingly unrelated features there may be a new paradigm trying to get out.



Track calculated for an hypothetical Icelandic plume assumed to be fixed relative to others postulated to lie on the African, Indian, North and South American and Australian plates (black dots labeled in Ma). White dots: alternative proposal for the migration path of an Icelandic plume; EI- Ellesmere Island (ref. D.A.Forsyth et al., 1986; from Lawver and Muller, 1994).

THE WILSON CYCLE ORIGIN OF THE JAN MAYEN MICROPLATE Christian Schiffer¹, Alex Peace¹, Jordan Phethean¹, Laurent Gernigon², Kenni Petersen³, Ken McCaffrey¹, Gillian R. Foulger¹

¹Dept. Earth Sciences, Durham University, Durham, U.K. ²Norwegian Geological Survey (NGU), Trondheim, Norway ³Dept. of Geoscience, Aarhus University, Denmark

The opening of the North Atlantic is one of the dominant geodynamic events that have shaped the present-day passive margins of Europe, Greenland and North America. Although wellstudied, the evolution of the North Atlantic remains partly enigmatic, including the origin and meaning of the Jan Mayen Microplate (JMMP). Modern geophysical data have imaged the crustal structure of this microplate, north of Iceland and allowed a detailed palaeogeographic reconstruction of the rift and spreading history. However, the mechanisms leading to separation of microplates in between two conjugate margins are still incompletely understood. We collect the most recent advances and models of rifting and passive margin formation in the North Atlantic, and discuss a possible scenario that have led to the formation of the JMMP. We conclude that its separation may have been triggered by regional plate-tectonic reorganisations



Tectonic evolution of the Iceland Region during the past 54 Ma. Red lines - currently active plate boundaries; dashed red lines - imminent plate boundaries; dashed blue lines - extinct plate boundaries; thin lines - bathymetric contours. JAM - Jan Mayen microcontinent; KR - Kolbeinsey Ridge; N - Norway; NVZ - Northern Volcanic Zone; RR - Reykjanes Ridge; AR - Aegir Ridge. (adapted from G.R.Foulger et al., 2005)

THE WILSON CYCLE ORIGIN OF THE JAN MAYEN MICROPLATE Christian Schiffer¹, Alex Peace¹, Jordan Phethean¹, Laurent Gernigon², Kenni Petersen³, Ken McCaffrey¹, Gillian R. Foulger¹

(i.e. change of stress field) and the influence of different inherited structures. We suggest that the axis of rifting and continental breakup, and thereby the width of the JMMP, was determined by Caledonian fossil subduction/suture zones. Its length (north-south extent) may be linked to the presence of different E-W oriented deformation zones (e.g. fracture zones, transform margins, highly oblique rift systems), the location of which may have been controlled by the presence of Precambrian terrane boundaries in Scandinavia and Greenland.



ARCTIC-ATLANTIC BREAK-UP STAGES, AND THEIR CONTROL ON PETROLEUM SYSTEMS AND RESOURCES

Tony Doré, Statoil U.K. Ltd

The basins bordering the North Atlantic and Arctic oceans house some of the world's most prolific petroleum systems, and (it is thought) a significant portion of the world's yet-to-find resources. Additionally, the region has been a testing ground for rift and continental margin models since the advent of plate tectonics. It contains abandoned and truncated rifts, hyperextended basins, magmatic and magma-poor continental margins, transform margins and rotational ocean basins, many of which have become the global "type areas" for study.

In this presentation, I will show the sequential development of continental break-up from the Pangean acme of the Permo-Triassic to the present. I will demonstrate how source rock development and (hence) the distribution of petroleum resources are directly attributable to this break-up process. The talk will highlight a newly-defined group of oceanic basins which we term "high-angle back arcs". Such basins are major potential foci for reservoir and source rock deposition and (in the case of the Arctic) played a significant part in global climatic shift.





TWO GEOPHYSICAL THINGS FROM EUROPE (SCOTLAND AND DENMARK) THAT TELL US SOMETHING ABOUT ICELAND AND THE OPENING OF THE NORTH ATLANTIC Bandell Stephenson, School of Geosciences, University of Aberdeen

There is a scar in the Earth's mantle below NW Scotland (at depths to 80 km and traceable for hundreds of kilometres). Its discovery more than 30 years ago catalysed a new generation of geophysicists and led to unprecedented research on the deeper structure of the lithosphere (the upper 100-150 km of the Earth). A few years ago the continuation of the same mantle scar was found beneath the crust of East Greenland, separated from its "other half" by the formation of the North Atlantic Ocean in the Cenozoic. Present-day Iceland lies exactly where this Greenland-Eurasian continental mantle scar was ruptured by the opening Atlantic. The presence of such a structure has implications for magmatism and development of magmatic structures like Iceland when the host lithosphere is rapidly ruptured.



Iceland: thickness of the layer with crust-like seismic wave speeds, defined as VS < 4.1 km/s. It is commonly assumed that this approximately indicates crustal thickness, but density considerations are incompatible with the entire layer corresponding to basic melt. WVZ, NVZ, SVZ: Western, Northern and Snaefellsnaes Volcanic zones; TFZ: Tjörnes Fracture Zone (from G.R. Foulger et al., 2003).

TWO GEOPHYSICAL THINGS FROM EUROPE (SCOTLAND AND DENMARK) THAT TELL US SOMETHING ABOUT ICELAND AND THE OPENING OF THE NORTH ATLANTIC Pandall Staphanson, School of Consciences, University of Abardoon

There are sedimentary basins in southern England, the North Sea, Denmark, northern Germany and Poland, well-explored and recording a detailed story of the subsidence and uplift of the Earth's surface during the last 250 million years. One phenomenon clearly documented is a distinct and rapid change in subsidence and uplift patterns coinciding with the onset of Iceland related magmatism in the North Atlantic, some considerable distance away. The pattern of change is incompatible with any change of tectonic stress field in Europe that could be induced by the impingement of a thermal plume from the mantle below the Greenland-Eurasian lithosphere but is compatible with stress changes resulting from the rapid rupturing of the lithosphere. Rapid rupturing of the lithosphere has implications for magmatism and development of magmatic structures like Iceland especially when the lithosphere mantle may already be scarred.

NEXT YGS MEETING SATURDAY 4TH MARCH 2017

LEADING YORKSHIRE FIGURES IN THE HISTORY OF GEOLOGY Leeds University. Joint Meeting with The Leeds Geological Association

PRESIDENT'S WORD





In December, we posted the news on the YGS Facebook Pages that Society member Colin Waters' lead authored paper on the Anthropocene had made the Top 100 list of most talked about science articles in 2016, out of a total list of 2.7 million. Of course, that hugely long list will include some fantastic science, but what makes some science papers more 'talked about' than others?

Well, being President (of USA, rather than YGS) clearly helps! The number I paper on the list is authored by Barack Obama and looks at the effectiveness of the Affordable Care Act ('ObamaCare') in the USA. Obama is the first incumbent American President to publish a

paper in a scientific journal. Would that same paper be number one without Obama as author? Maybe not.

Let's have look at some other papers on the list. Overwhelmingly, the most 'talked about' papers are about people, especially their health and behaviour, so the medical and social sciences totally dominate. Papers about Humankind's impact on the planet, such as sea level change, the ozone hole and global warming, also figure largely, and these of course include the paper by Colin and his coauthors. Exoplanets, extremophiles and evolution are popular, as are dinosaurs and dogs. Papers in the highest impact journals also predominate, such as *Nature, Science and the Journal of the American Medical Association*. But, most importantly, very few if any of the articles were written with the objective of being popular. They are fundamentally good science, but also science that happens to get noticed.

All the top 100 papers have enjoyed the attention of the press, and while scientists sometimes have an uneasy relationship with the media there's no doubt that journalists can often tease the story out of a research paper when the scientists can't themselves. Having a multi-national authorship team who could talk to the press at all hours and across many time zones certainly helped with the Waters et al. paper. But the 'talking' itself grew and spread on the web and social media.

The YGS' objectives are 'to promote and record the results of research in Geology and its allied sciences, more especially in Yorkshire'. So how can we get that research more 'talked about'? We will launch our new website in early 2017 which, together with our Facebook page, will give YGS members some simple new tools to review the science presented at indoor meetings and field trips, send in photos, and comment on geology in the news in Yorkshire and elsewhere. These are great tools for all our members to share their knowledge and 'talk about' geology to a wider audience, the potential new YGS members of the future. Please have a go!

Happy New Year and very best wishes for 2017!

Andy Howard

OFFICERS AND OTHER COUNCIL MEMBERS FOR 2017

Elected at the 10th December 2016 Annual General Meeting.

President: Vice-Presidents:

General Secretary: General Treasurer: Membership Secretary: Programme Secretary: Principal Editor: Circular and Website Editor: Social Media Editor: Dr. Andrew Howard Dr. John Knight Professor Patrick Boylan Paul Hildreth John Holt Dr. John Varker VACANT Dr. Stephen Donovan Professor Patrick Boylan Dr. Andrew Howard

OTHER MEMBERS OF COUNCIL

Dr David Blythe David Hill Dr Stewart Molyneux Rick Saville Dr Noel Worley Malcolm Fry Dr Sarah King William Paley Will Watts

Paul Hildreth General Secretary

SUMMARY OF ACCOUNTS FOR SEPTEMBER 2015 TO AUGUST 2016 AS PRESENTED TO THE 10TH DECEMBER 2016 AGM

The full Financial Report and Accounts will be published in the next Part of the *Proceedings* in May 2017

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST AUGUST 2016

		2016		2015
	£	£	£	£
Subscriptions		14,239		14,229
Members' and others' donations		1,374		1,805
Gift Aid recovery on subscriptions		2,495		5,529
Publication sales		1,197		647
AGM/President's Day & supper ticket sales		616		480
Chalk Symposium September 15		1,559		
Carboniferous Strata type Localities		560		-
Investment income & interest received		1,235		1,234
Total receipts		23,275		23,924
PAYMENTS				
Charitable purposes:				
Proceedings	-		-	
Circulars including postage	8,108		5,869	
Indoor & field meetings	2,630		2,487	
Chalk Symposium September 15	1,655		700	
Carboniferous Stratotype Localities	560		-	
Yorkshire Geology Month	249		789	
AGM/President's Day & supper	1,981		1,686	
Web site expenses	200		/2	
			15,383	11,603
Administration and other payments	F 4 4		2 400	
Membership services & expenses	5 44 1 700		2,400	
Bank charges	1,707		1,072	
Coologist Association affiliation	100		177	
and insurance costs	288		487	
Cost of trading activities	91		77	
Bisat Medal – set up and purchase	-		-	
		2,892		4,983
Total payments		18,275		16,586

SUMMARY OF ACCOUNTS FOR SEPTEMBER 2015 TO AUGUST 2016 AS PRESENTED TO THE 10TH DECEMBER 2016 AGM

The full Financial Report and Accounts will be published in the next Part of the *Proceedings* in May 2017

	2016			
	£	£	£	£
Net receipts before other recognised gains and losses Unrealised gains		5,000 1,879		7,338 262
Net movement in funds Fund balances brought forward Fund balances carried forward		6,879 59,670 66,549		7,600 52,070 59,670
STATEMENT OF ASSETS AND LIABILITIES AS	AT 315	r AUGUST 20	16	
Investment assets Charities Official Investment Fund units (cost £10,364)		21,249		19,370
Bank accounts United Trust Bank 3 year				
fixed interest bond (1.85% interest) United Trust Bank		10,691		10,455
60 day notice account (1.9% interest) Charities Official Investment		10,461		10,262
Fund deposit account (0.45% interest) Barclays Bank current account		4, 4 0,034		4,05 5,532
Net assets		66,549		59,670

John Holt, Treasurer



YGS MEDAL PRESENTATIONS: SORBY MEDAL AND MOORE MEDAL





BOOK REVIEW: ROCKS: A VERY SHORT INTRODUCTION BY JAN ZALASIEWICZ, 2016

Oxford University Press 140pp, ISBN 978-0-19-872519-0 Sbk. Price: £7.99



Rocks: A Very Short Introduction is the latest volume in the OUP 'Very Short Introduction' library that began in 1995 and is aimed at anyone wanting a stimulating and accessible way into a new subject. They are written by experts and have been translated into many different languages. There are now over 500 volumes ranging from Accounting to Zionism. In small pocket sized format bound in attractive soft red covers the emphasis is on a stylish take anywhere portability. There are around 7 other earth science titles published, but *Rocks: A Very Short Introduction* represents the first exclusively geological topic to be covered and is the latest title that has been written by Jan Zalasiewicz Professor of Palaeobiology at the University of Leicester.

The book comprises 8 chapters and an index; the use of succinct straight forward prose avoids the need to use a glossary of terms.

Half tone text figures and simple clear line drawings are used throughout to illustrate each chapter. However the limitations of the printing format mean that some of the half tone photographs lack contrast but this is minor quibble.

The opening chapter describes how the primordial chemical elements formed from stellar explosions and started the process of elemental construction that led the formation of the first minerals and the primitive Earth. Subsequent chapters explain the processes involved in the formation of rocks in different settings such as melting, the formation of sediments, and the transformation of rocks during mountain building episodes and very deep burial. Each chapter is carefully linked; for example the explanation of our ability to date rocks and thereby decipher the history of the planet is nicely juxtaposed with the section of sedimentary rocks.

In the final chapter the scale of the impact of human activity on the planet is described and the author gives more food for thought by sharing his concerns about the implications for the future geological evolution of this planet.

This book more than fulfils the objectives of the series of Very Short Introductions and I would recommend it in its own right as a very interesting and readable account.

Noel Worley



REDUCED SUBSCRIPTION TO THE JOURNAL GEOLOGY TODAY: A BENEFIT OF YORKSHIRE GEOLOGICAL SOCIETY MEMBERSHIP

The Society has a partnership with Geology Today, which is published six times a year, has become essential and always interesting reading for all earth scientists, whether amateur or professional. Founded orginally in 1985 by the Geological Socity of London and the Geologisits; Association, this is now published on their behalf by Wiley-Blackwell.

- Articles and Features: review topics of current interest in the Earth Sciences written for the general reader by experts in the field.
- News and Briefing: columns report on news from the geological community, recent research that has appeared in the specialist journals, geological happenings and discoveries and geological conferences
- Fossils Explained and Minerals Explained: are two regular series looking at the origins, classification and identification of fossils and minerals.
- Building Stones Explained: is a new series introducing the most common stones used in the Industry.
- A lively Correspondence section: allows readers to air and share their views and to respond to items appearing in the journal.
- Subscribers also have access Geology Today online.

Yorkshire Geological Society members can subscribe direct from the publisher at a reduced subscription of £44 a year. For further details, to read a sample copy or to subscribe at the discounted member rate see http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1365-2451

Patrick Boylan

This notice contains important information that will enable you to access the online. Please make sure that you retain the address label from the envelope containing your latest YGS Circular – this contains your YGS membership number, which you will need to activate your subscription.

The Proceedings arecnow fully digitised from vol. 1 (1839) to vol. 61 Part 2 (2016) with free online access to individual YGS members, and following the launch of the Proceedings in the Lyell Collection, individual members who subscribe to the journal can now view the entire archive from Volume 1 (1839) online. Before you can access the Proceedings online, you will need to activate your subscription.

To do this, go to the YGS Proceedings subscription activation page:

http://www.lyellcollection.org/cgi/activate/ibasic and enter your subscriber ID number in the bottom right hand box. Your subscriber ID is your YGS membership number, which is the four digit number shown in the top left hand corner of the address label, with the prefix YGS (e.g. YGS9999). Ignore the reference to "Institutional Subscription Access" at the top, and to "payment confirmation letter)": on the bottom line just put your YGS membership number in the box and press the "submit" button.)

Follow the instructions on the next screen and complete parts A and B. In part B, you will need to set your own user name and password, which you will use when you next login to the Proceedings site in the Lyell Collection. Once you have activated your subscription, you will be able to browse the PYGS archive. For subsequent access, go direct to the PYGS site on the Lyell Collection web site at http://pygs.lyellcollection.org/ (Please note that if you have access rights to other parts of the Lyell Collection, e.g. as a Fellow of the Geological Society, you need to connect via the YGS option, not as part of your Geological Society (or other) options.)

Stewart Molyneux



THE SOCIETY'S FACEBOOK PAGE: https://www.facebook.com/YGSRocks

This carries current news, updates and information relating to the Society and its interests and members. From January this will be linked to the upgraded YGS website at **http://www.yorksgeolsoc.org.uk**. Please register with this as a Facebook "friend" to receive notifications of Facebook updates.

YGS-MEMBERS FORUM EMAIL "LISTSERV"

Courtesy of the national Joint Academic Computer Network the Society has a "Listserv" type email system "YGS-Members Forum" for rapid communication (e.g. about updates and changes in programmes and events) between the YGS officers and event organisers and the members registered with the system. It also allows individual registered members to communicate with other members. This is a secure system controlled online by each registered member once they have been registered by the YGS, and anyone can remove themselves from the system at any time.

If you are not yet registered with the YGS-Members Forum and wish to do so, or at least try it out, please send your email address and name to the Circular and Website Editor, Patrick Boylan, at **web@yorksgeolsoc.org.uk**

Patrick Boylan

Please contact the society representatives and/or websites shown for the latest information, and if you would like to attend a particular meeting as a guest

CRAVEN & PENDLE GEOLOGICAL SOCIETY

Contact: Paul Kabrna e-mail: paul_kabrna@hotmail.com or http://www.cpgs.org.uk/ (usual meeting place for indoor lectures:The Rainhall Centre, Barnoldswick)

Friday 13th January New techniques in palaeontology and evolutionary transitions Russell Garwood, University of Manchester

Friday 17th February Mineralisation of the South Pennine Orefield Noel Worley Ph.D., (formerly chief geologist at British Gypsum)

CUMBERLAND GEOLOGICAL SOCIETY

Secretary: Rosemary Vidler, 11 Blencathra View, Threlkeld, Cumbria, phone no 017687 79326, e-mail: rosevidler@freeuk.com; http://www.cumberland-geol-soc.org.uk/

Wednesday 25th January Graphite in Borrowdale Dr Dave Millward. 19:30 Location: Tullie House Museum & Art Gallery, Castle Street, Carlisle CA3 8TP

Wednesday 22nd February

Geology and International Development: Interdisciplinary Work across Three Continents -The role of geology in fighting global poverty and supporting sustainable development. Joel Gill. 19:30 Location: Friends' Meeting House, Kirkgate, Cockermouth, CA14 9PH

EAST MIDLANDS GEOLOGICAL SOCIETY

Janet Slater, tel. 01509-843.297; e-mail: secretary@emgs.org.uk or http://www.emgs.org.uk (Venue - Please note the change from previous years! Meetings are now in the Geography Department of Nottingham University, which is in the Sir Clive Granger Building. Enter the university by the North Entrance, off the A52, and follow signs to the Main Visitor Car Park. As you turn right into the car park, the Sir Clive Granger Building is on your left.)

EAST MIDLANDS REGIONAL GROUP OF THE GEOLOGICAL SOCIETY

Secretary:Jessica De Freitas email: jessica.defreitas@aecom.com

Staurday 14th January The secret life of your mobile phone: metal supply and digital devices Andrew Bloodworth, BGS. 6.00pm

Saturday 11th February Hydrogeology of the Peak District then Annual Dinner Vanessa Banks, BGS. 6.00pm.

Please contact the society representatives and/or websites shown for the latest information, and if you would like to attend a particular meeting as a guest

EDINBURGH GEOLOGICAL SOCIETY

E-mail: secretary@edinburghgeolsoc.org; http://edinburghgeolsoc.org/; Lectures Secretary: Kathryn Goodenough, British Geological Survey, West Mains Road, Edinburgh EH9 0ET, tel. 0131 6500272, e-mail: kmgo@bgs.ac.uk. Lectures are held in the Grant Institute of the University of Edinburgh, West Mains Road, Edinburgh, at 7:30pm, except where stated otherwise. These meetings are open to the public, there is no charge, and visitors are welcome. Tea and biscuits are served after the lectures, upstairs in the Cockburn Museum of the Grant Institute. (See http://www.ed.ac.uk/maps for location.)

Wednesday 11th January Is there a future for the UK oil and gas industry? Dr Phil Richards, formerly BGS Scotland

Wednesday 25th January AGM (7pm) & Lecture: Is earthquake activity increasing? Dr Brian Baptie, BGS Scotland

THE GEOLOGISTS' ASSOCIATION

http://www.geologistsassociation.org.uk/:The schedule of field meetings for 2012 includes the following in the widerYGS region: (For further details and to book places please e-mail or telephone Sarah Stafford at the GA Office: geol.assoc@btinternet.com, tel. 020 7434 9298)

HUDDERSFIELD GEOLOGY GROUP

Contact: Phil Robinson, 01484-715.298. http://www.huddersfieldgeology.org.uk/ Meetings at Greenhead College, Huddersfield, on Monday evenings at 7pm unless otherwise stated.

Monday 16th January In the beginning...a short history of geology William Varley of the West Yorkshire Geology Trust

Monday 13th February From Huddersfield to Mars: Curiosity's recent findings and what I have to do with it Candice Bedford

Please contact the society representatives and/or websites shown for the latest information, and if you would like to attend a particular meeting as a guest

HULL GEOLOGICAL SOCIETY

Mike Horne. Tel: 01482 346 784 or e-mail: secretary@Hullgeolsoc.org.uk web: http://www.hullgeolsoc.org.uk/hgmeet.htm/ (Usual meeting place for indoor lectures: Department of Geography, University of Hull, at 7.30 pm. N.B. for security reasons the door is locked at 7.40pm). The Club Nights are open to members of the Society, University Students and interested members of the public. At the end of each of these meeting we will choose the topic or topics for the following meeting. Those attending are encouraged to bring some appropriate specimens, photographs, models or texts to contribute to the evening. The Club Night meetings start at 7-45pm. For further information phone 01482 346784.

Thursday 19th January The Geology along the north and middle Craven Faults between Malham and Threshfield lan Heppenstall

Thursday 2nd February Club Night - topic: Crystals

LANCASHIRE GROUP OF THE GEOLOGISTS' ASSOCIATION

Secretary: Jennifer Rhodes, e-mail: sjrhodes@hotmail.com

LEEDS GEOLOGICAL ASSOCIATION

General Secretary: William Fraser. Tel: 0113 2608764 e-mail: lga.sec@btinternet.com; Field Meetings Secretary: David Holmes. Tel: 01423 888997 E.mail: holmsey@taltalk.net; new Association website address: http://www.leedsga.org.uk (Usual meeting place for indoor lectures: Rupert Beckett Lecture Theatre (Michael Sadler Building) Leeds University at 7.15pm)

Thursday 26th January Atmospheric and Societal Effects of Icelandic Volcanic Eruptions Dr Anja Schmidt, Leeds University

Thursday 23rd January Presentations by Students of the School of Earth and Environment, Leeds University Final Year Students Earth and Environment, University of Leeds

LEICESTER LITERARY & PHILOSOPHICAL SOCIETY - SECTION C GEOLOGY

Chairman and contact: Dr Mark Evans, e-mail: mark.evans@leicester.gov.uk, tel. 0116 275 4094; Website: http://www.charnia.org.uk/ Usual meeting place for indoor lectures (unless otherwise stated): Lecture Theatre 3, Ken Edwards Building, University of Leicester at 7.30pm, refreshments from 7.00pm.

Please contact the society representatives and/or websites shown for the latest information, and if you would like to attend a particular meeting as a guest

MANCHESTER GEOLOGICAL ASSOCIATION

http://www.mangeolassoc.org.uk Sue Plumb, Hon. General Secretary: e-mail: secretary@mangrolassoc.org.uk; programme enquiries: lectures@mangeolassoc.org.uk. (Usual meeting place for indoor lectures: Williamson Building, Department of Geology, University of Manchester)

Saturday 21st January

Rare Earth Elements: vital commodities

Prof Frances Wall, University of Exeter, Dr Richard Shaw, British Geological Survey and Suzanne Shaw, Roskill (leader in international metals and minerals research since 1930). 13.30pm.

Saturday 18th February

Annual General Meeting and Presidential Address

NORTH EASTERN GEOLOGICAL SOCIETY

Prof. Gillian FG Foulger, University of Durham, tel. 0191-334.2314, e-mail: g.r.foulger@durham.ac.uk. Lectures are at 7.30pm in the Arthur Holmes Lecture Room, Science Laboratories Site, University of Durham. See website for more details: http://www.negs.org.uk

Friday 20th January Title - To be confirmed Dr Christian Schiffer, Durham

Friday 17th February Helium, it's a gas, gas, gas! Prof. John Gluyas, Durham

NORTH EAST YORKSHIRE GEOLOGY TRUST

Director: Mike Windle, 01947 881000, email: contact@neyorksgeologytrust.com/. The Trust has recently moved from its old base in Robin Hood's Bay to the Northallerton area. Please use the email address above ro contact the Trust for the moment.

NORTHERN REGIONAL GROUP OF THE GEOLOGICAL SOCIETY OF LONDON

Secretary: Dr Mark Allen, Department of Earth Sciences, University of Durham, e-mail: m.b.allen@durham.ac.uk

NORTH STAFFORDSHIRE GROUP OF THE GEOLOGISTS ASSOCATION

Barbara KleiserTel: 01260 271505 email: barbara.kleiser@gmail.com http://www.esci.keele.ac.uk/nsgga/ (usual meeting place for indoor meetings: William Smith Building, University of Keele at 7.30pm

Thursday 26th January A Medical Geology perspective of the effect of soil on human health Dr Mark Cave (British Geological Survey)

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ROTUNDA GEOLOGY GROUP (SCARBOROUGH)

Contact Sue Rawson, tel. 01723-506.502, email: suerawson@yahoo.co.uk http://www.rotundageologygroup/ (usual meeting place Room CG7, Scarborough Campus of the University of Hull, Filey Road, Scarborough)

Thursday 8th December: Members' Evening

WESTMORLAND GEOLOGICAL SOCIETY

Contact: e-mail: mail@westmorlandgeolsoc.org.uk http://westmorlandgeolsoc.co.uk/ Meetings are on Wednesdays and start at 8 pm (unless otherwise stated) and are held in the Abbot Hall Social Centre, Kendal.

Wednesday 18th January Ashfalls of the North Atlantic – a time marker Dr. Kent Brooks, WGS

Wednesday I 5th February AGM and Presidential Address Prof. Emrys Phillips. Start time - 7:45pm

YORKSHIRE MID-WEEK GEOLOGY GROUP

West Yorkshire based informal mainly amateur and retired group that organises monthly field meetings or museum visits on Tuesdays, Wednesdays or Thursdays. Details in regular Newsletters and on the Group's website: http://mwggyorkshire.webspace.virginmedia.com/. Contact: mwggyorkshire@virginmedia.com

8th to 12th May 2017 Mid-week trip to Eden Valley

YORKSHIRE REGIONAL GROUP OF THE GEOLOGICAL SOCIETY

Contact: Margaret Cliff mic@rounday-ecl.com



NEXTYGS CIRCULAR DEADLINE: 19th JANUARY 2017

Please send all copy for the February 2017 Circular including any further or updated Corresponding Society Winter/Spring programmes to the Circular and Website Editor, Patrick Boylan: **web@yorksgeolsoc.org.uk**

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THE NORTH ATLANTIC: ORIGIN TO ENERGY

Saturday 28th January 2017, 2.00 pm - 5.00 pm Arthur Holmes Lecture Theatre, Department of Earth Sciences Science Labs, Durham University, Durham, DHI 3LE

Joint Meeting with the North Eastern Geological Society

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Meeting venue.

Front Cover: Bathymetry and topography of the Iceland Region. IFR: Iceland- Faeroe Ridge. (Basemap from Smith and Sandwell, 1997).