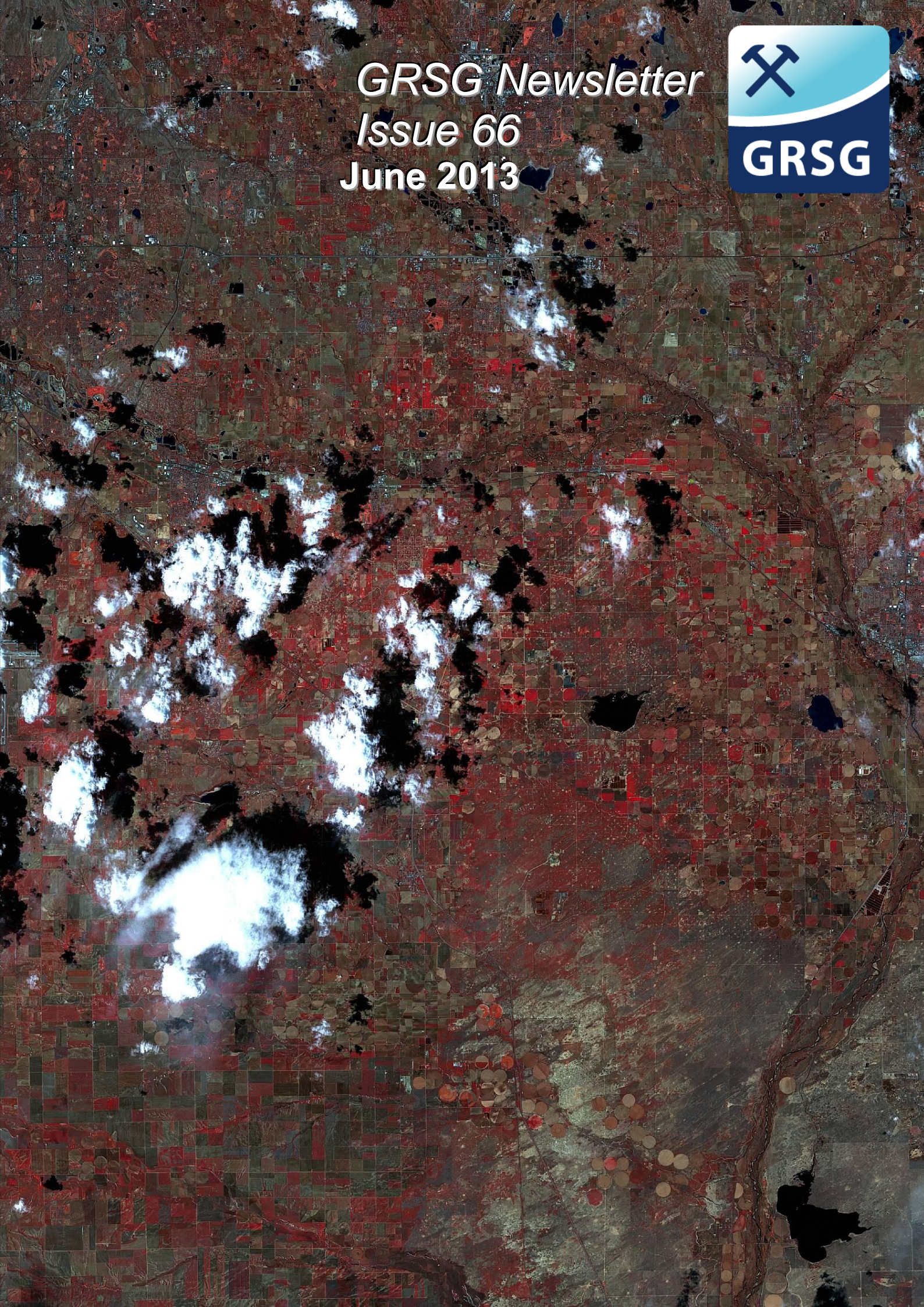


GRSG Newsletter
Issue 66
June 2013



GRSG committee



If you would like to know more of our aims or would like to join the GRSG and receive the Newsletter regularly please contact one of our Committee Members

Jason Manning

Arup
13 Fitzroy Street,
London
W1T 4BQ, UK.
Tel: +44 (0) 20 77 55 32 14
Email:
chairman@grsg.org.uk

Chairman



Charlotte Bishop

CGG NPA Satellite Mapping Ltd
Crockham Park,
Edenbridge
Kent. TN8 6SR, UK.
Tel: +44 (0) 1732 865023
Email:
newsletter@grsg.org.uk

Secretary



Luke Bateson

British Geological Survey
Kingsley Durham Centre
Nottingham
NG12 5GG
Tel: +44 (0) 115 9363043
Email:
treasurer@grsg.org.uk

Treasurer



Jacques Malaprade

92 Lowfield Road
Caversham Park Village
Reading RG4 6PB.
Tel: +44 (0) 771 7221 024
Email:
j.malaprade.11@alumni.ucl.ac.uk

Membership



Huma Irfan

Geonergy Limited
14 Spencer Road,
London
IG3 8PW
UK
Tel: +44 (0) 784 6208 745
Email:
huma.irfan@geonergy.org

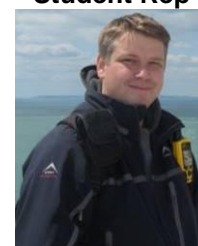
Website



Mathias Leidig

University of Portsmouth, Burnaby
Building,
Portsmouth,
PO1 3QL
UK
Email: mathias.leidig@port.ac.uk

Student Rep

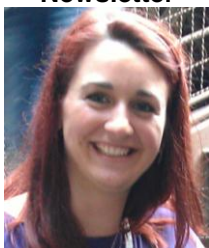


Charlotte Bishop

Interim Editor

Email:
newsletter@grsg.org.uk

Newsletter



Eric Peters

Consultant
10 Westfield Avenue,
Harpenden,
Hertfordshire
AL5 4HN
Tel: 44 (0) 1582 713347
Email: eric_peters@ntlworld.com

Publicity



Dietmar Backes

UCL - Department of
Civil, Environmental and
Geomatic Engineering
Gower Street, London
WC1E 6BT UK
Email:
dietmar@cege.ucl.ac.uk

Committee



Michael Hall

ASTRIUM GEO-Information Services
Atlas House
41 Wembley Road, Leicester
Leicestershire, LE3 1UT, UK
T. +44 (0)116 273 2300
Email:
Michael.Hall1@astrium.eads.net

Committee



Elsbeth Robertson

University of Bristol
Wills Memorial Building,
Queen's Road,
Clifton
Bristol, BS8 1RJ
Email: elsbeth.robertson@bristol.ac.uk

Committee



Xue Wan

Department of Earth Science and
Engineering,
Imperial College
South Kensington Campus
London SW7 2AZ.
Email: x.wan12@imperial.ac.uk

Committee



Contents Issue 66



GRSG committee.....	2
GRSG News	7
News and Developments.....	8
Students	18
GRSG Travel Bursary.....	18
Fieldwork Bursary.....	18
Student Award Winners 2013.....	19
How to take a satellite to the opticians.....	20
Wot's 'APPening.....	22
DigitalGlobe Webinar Series 2013.....	23
RSPSoc Wavelength Conference 2013.....	24
ASD invites you to 'Show us what you've got'.....	25
XVI Brazilian National Remote Sensing Conference	26
GRSG Survey Monkey Results: AGM 2012	29
GRSG AGM Sponsors 2012.....	32
GRSG International Reps.....	33
GRSG Lifetime members.....	34
GRSG Corporate Members	35
GRSG Membership Renewal.....	39
Disclaimer	41

The Geological Remote Sensing Group (GRSG) is a Special Interest Group affiliated jointly with The Geological Society of London and the Remote Sensing and Photogrammetry Society. It was founded in 1989 to raise awareness and encourage the use of remote sensing technologies in the geoscientific and related communities. The GRSG seeks to represent the views of industry, government and academic individuals and organisations - resulting in a balanced scientific, technological and commercial viewpoint.

Front Cover

First image acquired by Landsat 8/LDCM which was launched on February 11th 2013. This image, captured on March 18th 2013, was collected over the Great Plains with the Front Ranges of the Rocky Mountains in Wyoming and Colorado. This image was acquired before it reached its full orbit so is not at full resolution. RGB 543 colour composite ©USGS, image prepared by NPA Satellite Mapping

Chairman's message



Dear Members,

You should each recently have received (by e-mail) notification of the call for papers for the Berlin meeting: *'Status and developments in geological remote sensing'* 9-11 December 2013. Planning of this meeting is the focus of committee activity at present, including inviting a number of keynote speakers and invited presentations. A copy of the flyer is in this newsletter and the flyer can also be downloaded from the website, so please do circulate this to your colleagues and place on noticeboards where appropriate. The December 2013 AGM meeting will be the fifth consecutive year that GRSG have held meetings of 3-days in length. Increasing the annual meetings from 1 or 2 day conferences has proven to be a popular formula, principally as it encourages greater international attendance (attendees from 23 countries attended the Dec 2012 meeting) and also appeals to sponsors to attend and have booths.

The GRSG committee strive to continue to collaborate with various groups in holding our meetings –in recent years this have involved collaboration with OGEO/OGP, ESA, EARSeL, EAGE, and EGGS (Engineering Group of Geol Soc) amongst others, and this collaboration has always been very positive and beneficial to all parties. Collaboration with other groups continues this year with the planning for the Berlin meeting involving a number of remote sensing groups from Germany. The organising committee for the December meeting includes GRSG members from: German Aerospace Center (DLR); German Society for Photogrammetry, Remote Sensing and Geoinformation (DGPF); Federal Institute for Geosciences and Natural Resources (BGR), and; Martin Luther University Halle-Wittenberg).

GRSG members from within Germany and the local region have had some longstanding involvements with GRSG– and this meeting by being in Germany will help to further strengthen links and hopefully increase GRSG membership. The important scientific developments in Germany have been on-going at a pace with regard to remote sensing (platforms, sensors and analytical tools), not least the development of the Environmental Mapping Hyperspectral mapping (EnMAP) sensor – <http://www.enmap.org/> due for launch in 2015 and which is anticipated to provide tremendous benefits for a range of applications, including geological mapping and natural hazard assessment and monitoring. We expect to have keynote speakers on this EnMAP topic.

A very recent example of the benefits of remote sensing comes from the floods (May 2013) that have been impacting Germany, Czech Republic and Hungary (fortunately the floodwater are subsiding now). The German Remote Sensing Center (DLR) has utilised TerraSAR-X and Pleiades data to disseminate to the general public and disaster response teams information and maps on flood status. <http://www.zki.dlr.de/article/2373>

Deadline for abstracts this year is 15 July 2013 (earlier than previous years). If you intend to present at the December 2013 meeting (oral presentation or poster) we would encourage you to send in an abstract soon. Online registration is also now open and we strongly encourage all GRSG members to register early as places are limited and the meeting is expected to be popular.

The venue for the conference dinner (10 Dec) shall be the stunning dinosaur hall of Berlin's Natural History museum and is yet another incentive to come to Berlin.



Conference dinner venue – Museum für Naturkunde, Berlin

Enjoy reading the newsletter and look forward to seeing you in Berlin!

Best wishes
Jason



Jason Manning
chairman@grsg.org

Editor's message



Yes, you guessed it, I am still here to ensure you all still get a newsletter. Welcome to Newsletter 66 and another packed issue.

Firstly, and inspired by the NASA article on giving a satellite an eye test later in this issue I have generated a step by step guide on how to take a satellite to the optometrist. For the full (and evidently more serious) article see [here](#).

Before you start considering whether to take your satellite to the opticians or not there are a couple of rather important notes and considerations:

Important note 1: *Sadly, you don't just strap a strap a satellite to a rocket, launch it, and voilà, it takes measurements - it would be a darn site more simple if it was but apparently there is a lot of development, funding, research and general rocket scientist nerdiness that needs to occur first - shame*

Important note 2: *If your satellite is designed to take images, and not just look like a pretty lump of metal in the sky (because some really are quite pretty, but that is beside the point) or be a telecoms satellite, it needs to be calibrated before, during and throughout its lifetime*

Once those points have been considered and your satellite is launched then you are ready to check its working as it should:

Step 1: *find a calibration site: this should be an area that doesn't change significantly over time, largely devoid of vegetation etc. A nice big desert is always handy - there are a few of those around*

Step 2: *do some fieldwork that can coincide with the overpass (this might involve some form of calculation or assessment to work this out) and ensuring that said desert is reasonably easy to access e.g. middle of Gobi desert in the middle of winter is probably not ideal.*

Step 3: *find a plane - (how hard is that going to be?)*

Step 4: *ensure plane is able to take measurements you require (this might be harder to find), imaging, positioning etc the more measurements the better*

Step 5: *take measurements from satellite and also from plane and field (ideally at the same time, so might need to prepare for some multitasking) and compare to assess the quality of results. You are essentially checking to make sure the colours and light received are as you expect. you can also compare to other sensors in the same series, if applicable.*

Step 6: *if step 5 successful then go to Step 7, if not then repeat steps 1-5 to do further checks before commissioning phase can complete*

Step 7: *Completion, your satellite is now calibrated and ready to use - repeat steps 1-5 on a regular basis to check satellite is seeing as it should.*

This issue is as always packed with a fair chunk of news and this issue sees some mid year [changes to the GRSG committee](#), as well as announcements on Landsat 8, SPOT 6, Pleiades and the decommissioning of SPOT 4 and Radarsat 1. We are also very pleased to announce this years student winners as well as including articles from Freek van der Meer on his recent [conference trip to Brazil](#) and general announcements from [DigitalGlobe](#) and [ASD](#) which might be of interest.

My thanks again to all those who contributed to this issue and ensure that each issue is packed full of news! As always if you have any items that you feel will be of interest to the GRSG in the form of articles, front cover images, news items, events or conference write ups etc then please do send them through to me. Likewise if you have any feedback on the newsletter, how we can improve it, what you like/don't like then please contact me.

I hope you enjoy this newsletter and I look forward to seeing some of you at a GRSG event soon

All the best



Charlotte Bishop
GRSG Newsletter Editor - for a little while longer
newsletter@grsg.org.uk

GRSG News



Sadly we have some midterm committee changes to announce. Due to continued work pressure it is with regret that Robin Coackley (Exelis vis) has had to step down from the Committee. Robin joined the committee at the start of 2012 and at the 2012 AGM took on the role of Membership Secretary. In the interim Mike Hall stepped back into the role temporarily and is now replaced more permanently by Jacques Malaprade, thank you Jacques! We hope Robin will be able to have some involvement in future GRSG meetings and wish him well.

We are also very pleased to announce that Elspeth Robertson has joined the committee (University of Bristol). She joins us as a committee member and we welcome Elspeth to the committee.

If you, or someone you know is interested in joining the committee then please get in touch with one of the committee, we always welcome new members.

Finally, as some of you may know GRSG now has its own Group pages on both LinkedIn (www.linkedin.com) and Facebook (www.facebook.com) but now we are also on Twitter (www.twitter.com) with 47 followers and counting! Search for us under GRSG – Geological Remote Sensing Group (LinkedIn and Facebook) or @grsg_geolsoc on Twitter and join in the discussions and meet other like minded people. For more information on these groups please contact Huma Irfan.



News and Developments



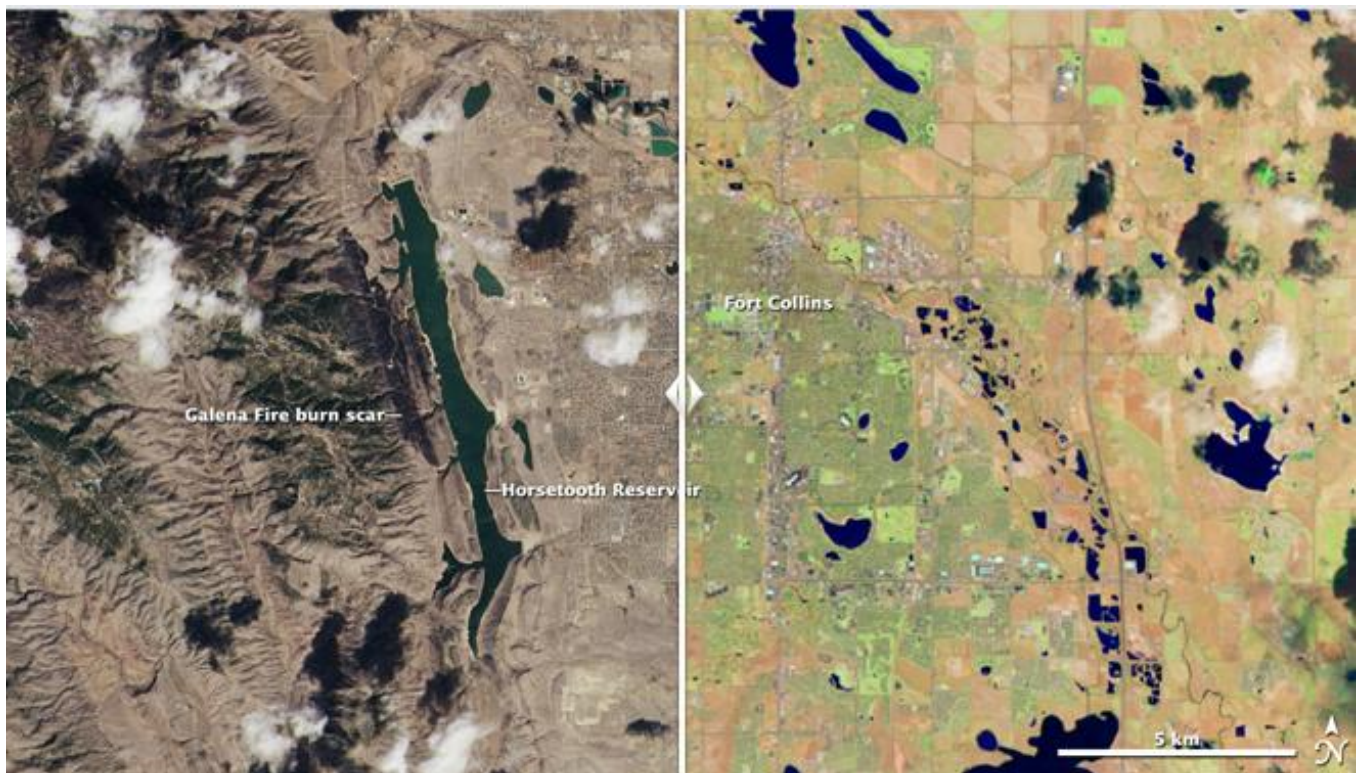
Landsat LDCM first image and now fully available

Turning on new satellite instruments is like opening new eyes (*I swear I didn't write this bit, after my Editor's bit!*). The Landsat Data Continuity Mission (LDCM) now known as Landsat 8 released its first images of Earth, collected at 1:40 p.m. EDT on March 18. The first image shows the meeting of the Great Plains with the Front Ranges of the Rocky Mountains in Wyoming and Colorado. The natural-colour image shows the green coniferous forest of the mountains coming down to the dormant brown plains. The cities of Cheyenne, Fort Collins, Loveland, Longmont, Boulder and Denver string out from north to south. Popcorn clouds dot the plains while more complete cloud cover obscures the mountains.

A portion of this very image has been used as our front cover image for this issue.

Source:

http://www.nasa.gov/mission_pages/landsat/news/first-images-feature.html



SPOT 6 and Pleiades 1B operational

Astrium has announced the operational and commercial launch of the fully complete Pléiades constellation as well as SPOT 6, following the successful in-orbit qualification of the Pléiades 1B and SPOT 6 satellites. This constellation will provide twice daily revisits when it is completed with the launch of SPOT 7 in Q1 2014. It is this daily revisit capability that makes geo-information services a reliable part of the strategic and economic decision-making process such as speedier access to images (war and crisis zones and natural disaster areas are visible in a matter of hours, anywhere in the world); the provision of images on a regular basis, enabling, for example, daily monitoring of activity at a specific location (rate of progress of civil engineering projects, surveillance of a military, industrial or mining sites, etc...); and twice the number of images (images

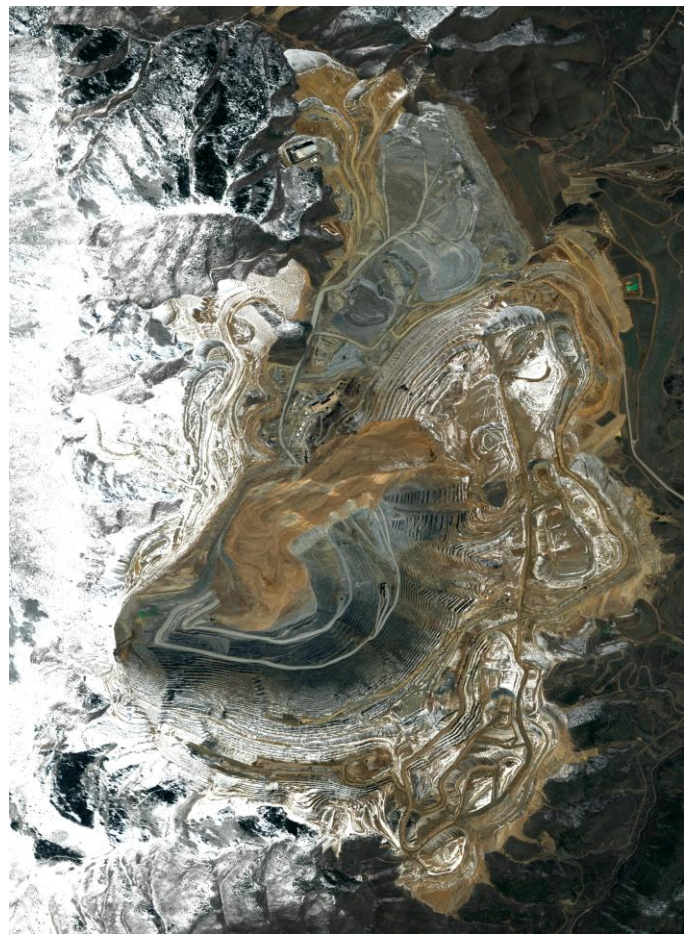
are acquired twice as fast and with twice the chance of a cloud-free image being captured, making it the ideal configuration for mapping large areas).

Source: 19th March 2013

<http://www.astrum-geo.com/en/4694-astrum-operational-and-commercial-launch-of-the-fully-complete-pleiades-constellation>

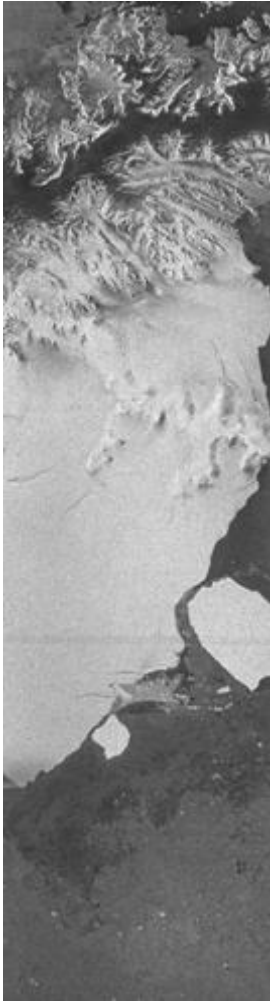
Bingham Canyon Mine Landslip captured by Worldview-2

You may remember last months front cover showed Bingham Mine, Utah? Well that was a Quickbird image acquired 28th August 2012. However, on April 10th 2013 the area suffered a massive landslide which was also captured just a few days later (April 18th) by Worldview-2. See both the pre and post images below. Due to extensive production activities in this mine it is monitored frequently by satellite as well as ground based technology.



Source: <http://blog.skytruth.org/2013/04/landslide-at-bingham-canyon-mine.html>. Pre and Post images provided by and ©DigitalGlobe Inc, All rights reserved.

Radarsat-1: 17 years of technological success



On March 29, 2013, Canada's first Earth Observation satellite, [RADARSAT-1](#), experienced a technical anomaly after surpassing its expected lifetime by 12 years. In the days since, the Canadian Space Agency (CSA) assembled a joint CSA-industry team of engineers, who conducted an extensive investigation. Following numerous attempts to resolve the technical issue, the CSA, in consultation with its commercial distributor MDA Geospatial Services Inc. (MDA GSI) has concluded that RADARSAT-1 is no longer operational after 17 years of outstanding service.

During its 90,828 orbits around the earth it provided 625,848 images to more than 600 clients and partners in Canada and 60 countries worldwide. It assisted with information gathering during 244 disaster events and literally mapped the world, providing complete coverage of the World's continents, continental shelves and polar icecaps.

Among its many accomplishments, [RADARSAT-1](#) conducted [Antarctic Mapping Missions](#) (AMM) in 1999 and 2000 and delivered the first-ever, unprecedented high-resolution maps of the entire frozen continent. It also delivered the first stereo-radar coverage of the planet's landmass, the first high-resolution interferometric coverage of Canada, and produced complete single season snapshots of all the continents.

The [RADARSAT Constellation](#) Mission comprises three satellites, which will further maximize Canada's capability to carry out around-the-clock surveillance from space. Just like RADARSAT-2 was the successor of RADARSAT-1, the RADARSAT Constellation Mission, slated to launch in 2018, will become the successor of RADARSAT-2. This is part of the Government's plan to maintain Canada's leadership in the global Earth Observation while ensuring Canada's capability to carry out around-the-clock surveillance of its territory and maritime approaches.

©CSA, NASA as part of the Antarctic Mapping Mission (AMM)

Source: Radarsat press release 9th May 2013 http://www.asc-csa.gc.ca/eng/media/news_releases/2013/0509.asp

Pleiades views Russian Meteorite

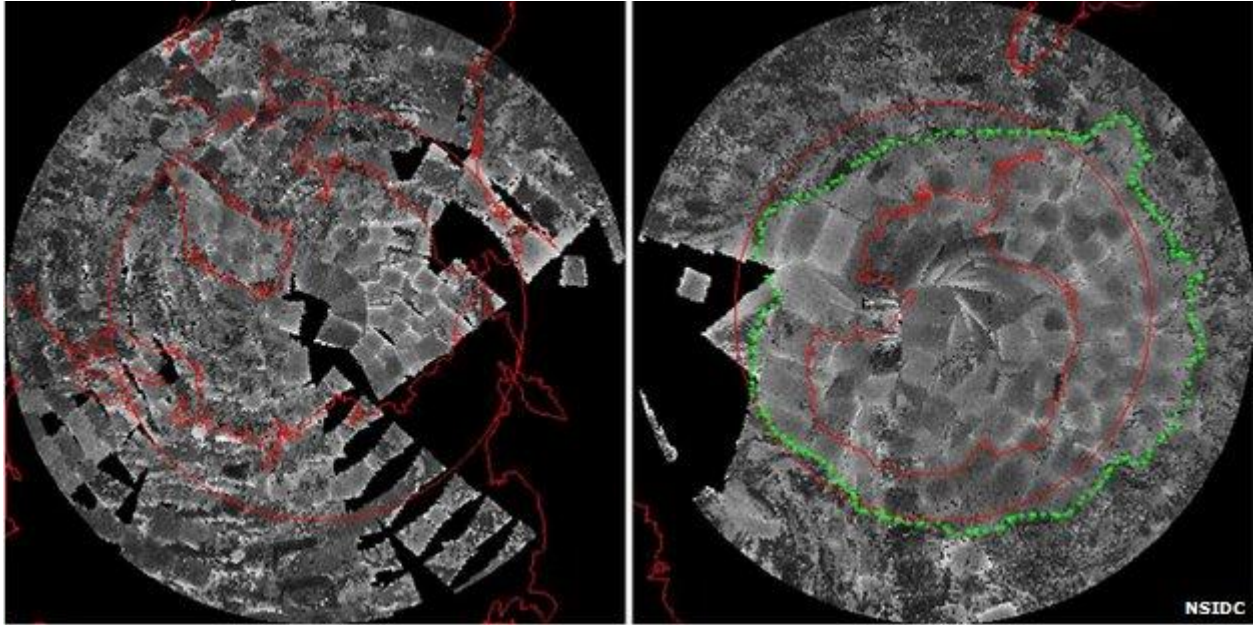


Pléiades 1A, the first European very-high-resolution satellite, built and operated by Astrium, has acquired an image (22nd February) of the Russian town of Chebarkul where a fragment of the meteorite that fell to Earth on 15 February left a hole in the middle of the frozen lake to the west of the town. Vehicle tracks are visible on the ice, converging toward the 6-metre-wide hole. Most of the tracks run from the impact area to Chebarkul, 2.5 km east. The asteroid that entered the atmosphere was 17 m across and took 32.5 seconds to break up into several fragments. An underwater expedition is underway to recover the

fragment at the bottom of the lake.

Source: <http://www.astrium-geo.com/en/4687-russian-meteorite-impact-viewed-by-pleiades>
Pléiades image of 22 February 2013 ©CNES 2013, Distribution Astrium Services / Spot Image

Earliest satellite maps of Antarctic and Arctic Sea Ice



The NSIDC project examined almost 40,000 images from the Nimbus-1 archive to produce the September 1964 maps of Arctic (L) and Antarctic (R) sea-ice extent

The earliest satellite maps of Arctic and Antarctic sea-ice have been assembled by scientists. They were made using data from Nasa's Nimbus-1 spacecraft, which was launched in 1964 to test new technologies for imaging weather systems from orbit.

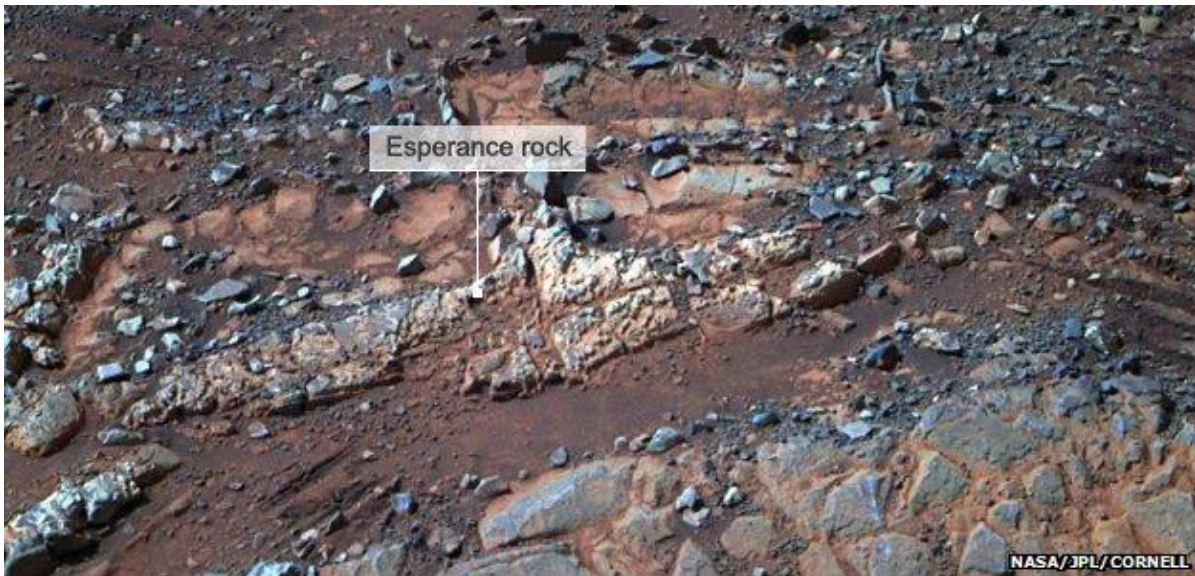
The satellite's old pictures have now been re-analysed to determine the extent of the marine ice at the poles in the September of that year. Regular mapping from space did not begin until 1978. One key finding is that marine floes around the White Continent in the 1960s were probably just as extensive as they are today.

Source: <http://www.bbc.co.uk/news/science-environment-22271972>

Good Rover!

Nasa's ageing Opportunity rover on Mars has just made what may be one of its most significant discoveries to date. The nine-year-old robot has identified rock laden with what scientists believe to be clay minerals. Their presence is an indication that the rock, dubbed Esperance, has been altered at some point in the past through prolonged contact with water. Opportunity has seen a clay-bearing outcrop before but scientists say this is by far the best example to date. The clays are aluminium-rich, possibly of the type montmorillonite. However, because Opportunity's X-ray spectrometer can only discern the atomic elements in a rock, and not their mineralogical arrangement, no-one can say for sure.

Nonetheless, the mere occurrence of clays is further proof that Mars was much warmer and wetter billions of years ago; a very different place to the cold, desiccated world it has become.



Source and full article at: <http://www.bbc.co.uk/news/science-environment-22832673>

The 'appearing mud volcano'

A bit of older news....but interesting none the less. On November 26, 2010, Pakistani fishermen returned from a day at sea to report that a new island had emerged. The tiny dot of land was a mud volcano, and it was still visible on January 11, 2011, when the Advanced Land Imager (ALI) on NASA's Earth Observing-1 (EO-1) satellite acquired the top image. The mud volcano was absent in a previous overpass on February 11, 2010, shown in the lower image.



There's no need to change any maps, however; mud volcanoes have risen off the coast of Pakistan in the past and disappeared again within a few months, washed away by the waves and currents in the Arabian Sea. It is quite likely that this new volcano will meet the same fate. Indeed, a stream of pale brown sediment was snaking away from the volcano to the west on January 11, suggesting that erosion was already underway.

Pakistan's mud volcanoes form as a result of plate tectonic activity. The Arabian plate—the section of Earth's crust that carries the Arabian Sea—is sinking beneath the Eurasian land mass at about four centimeters per year. Some of the thick sediment and rock on top of the Arabian plate has sloughed onto the edge of the Eurasian plate, forming Pakistan's coastal plain, the Makran Desert, and the underwater slope leading away from the shore. It is from this sloughed-off land that the mud volcanoes form.

Source: <http://earthobservatory.nasa.gov/IOTD/view.php?id=48801>

Images from ISS

“Sometimes Mother Nature uses a protractor, like here in New Zealand's South Island.”

Col. Chris Hadfield (Commander ISS Expedition 35) who captures this picture of the Waitaki Delta & river mouth on the South Island of New Zealand to the north of Oamaru.



Intergraph Geospatial World Tour 2013

At the 5th of March Intergraph stopped by in London. In the stunning setting of St. Pauls Cathedral Intergraph presented their new Intergraph (2013) Geospatial Portfolio to an interested expert audience. Hexagon has made remarkable progress to consolidate their Geospatial software business under Intergraph's roof and the integration of Erdas seems to have gone smoothly. The Geospatial Portfolio represents a powerful software architecture connecting and leveraging all geospatial genres - GIS, Photogrammetry and Remote Sensing in a dynamic and unified suite. The streamlined product portfolio has been migrated in a modern GUI supporting Microsoft Ribbon Technology and includes powerful enterprise management and delivery systems, giving greater flexibility and control to the professional.

Highlights of the Seminar included:

- Unlocking the power of PointClouds
- GIS on demand
- Going Mobile, GIS Apps by Intergraph
- Smart Application for none expert Users
- Enterprise servers

Follow recent advances, Intergraph is on a good way to provide a professional suite with the potential to streamline workflows and provide a complete and complete toolbox for many professionals in the Geospatial industry!



Landforms on Mars

This image was taken by the High Resolution Imaging Science Experiment (HiRISE) flying onboard the Mars Reconnaissance Orbiter mission.

Gully landforms like those in this image are found in many craters in the mid-latitudes of Mars. Changes in gullies were first seen in images from the Mars Orbiter Camera in 2006, and studying such activity has been a high priority for HiRISE. Many examples of new deposits in gullies are now known.

This image shows a new deposit in Gasa Crater, in the Southern mid-latitudes. The deposit is distinctively blue in enhanced-color images. This image was acquired in southern spring, but the flow that formed the deposit occurred in the preceding winter.



Source: Image of the day 15th March 2013

http://www.nasa.gov/multimedia/imagegallery/image_feature_2470.html

Great Sandy Desert Australia



In northwest Australia, the Great Sandy Desert holds great geological interest as a zone of active sand dune movement. While a variety of dune forms appear across the region, this astronaut photograph features numerous linear dunes (about 25 meters high) separated in a roughly regular fashion (0.5 to 1.5 km apart). The dunes are aligned to the prevailing winds that generated them, which typically blow from east to west. Where linear dunes converge, dune confluences point downwind. When you fly over such dune fields—either in an airplane or the International Space

Station—the fire scars stand out. Where thin vegetation has been burned, the dunes appear red from the underlying sand; dunes appear darker where the vegetation remains. Astronaut photograph ISS035-E-9454 was acquired on March 25, 2013, with a Nikon D3S digital camera using a 400 millimeter lens, and is provided by the ISS Crew Earth Observations experiment and Image Science & Analysis Laboratory, Johnson Space Center. The image was taken by the

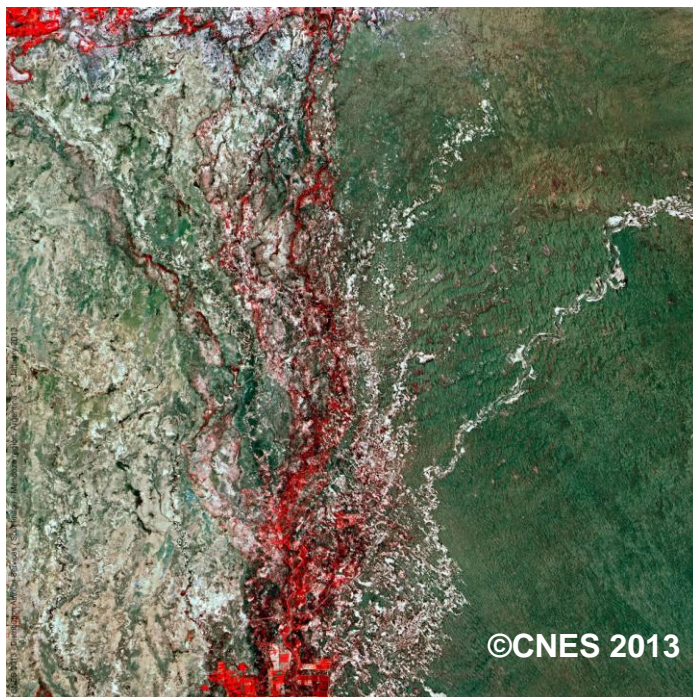
Expedition 35 crew. It has been cropped and enhanced to improve contrast, and lens artifacts have been removed.

Source: http://www.nasa.gov/multimedia/imagegallery/image_feature_2484.html

SPOT 4 last image

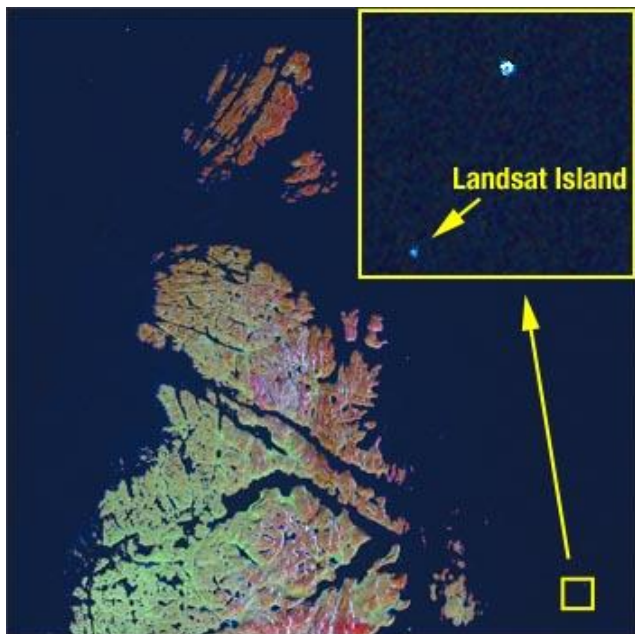
After 177 months in service and having collected 6,811,918 images, SPOT 4's mission was brought to an end by CNES and Astrium on 11 January. In compliance with the recommendations of the Inter-Agency Space Debris Coordination Committee (IADC), in June CNES will begin the long process of de-orbiting SPOT 4 for a re-entry into Earth's atmosphere at some point within the next 25 years.

SPOT 4 was launched on 24 March 1998 and acquired its last image on 11 January 2013 of the region of Mendoza in Argentina (see right), with its vineyards and fruit orchards in the Andean foothills. During its operational lifetime, SPOT 4 served chiefly to collect crop statistics, forecast yields, monitor environmental risks and support precision agriculture.



Source: <http://www.astrium-geo.com/en/4612-spot-4-undertakes-new-mission-before-being-de-orbited>

Satellite discovers island!



Ok this is not *new* news but it is interesting none the less and it makes you think if Landsat 1 identified a previously unknown island off the coast of Newfoundland (now named Landsat Island) then with today's technology, albeit also our improved general mapping capabilities (and not just from satellite), how many other discoveries of unknown islands can satellites make? Satellites already give us additional information about a lot of vast areas that we may not already know about and can add to existing (and non existing mapping) but I don't know any other island's named after a satellite!

Source: http://landsat.gsfc.nasa.gov/news/news-archive/dyk_0001.html

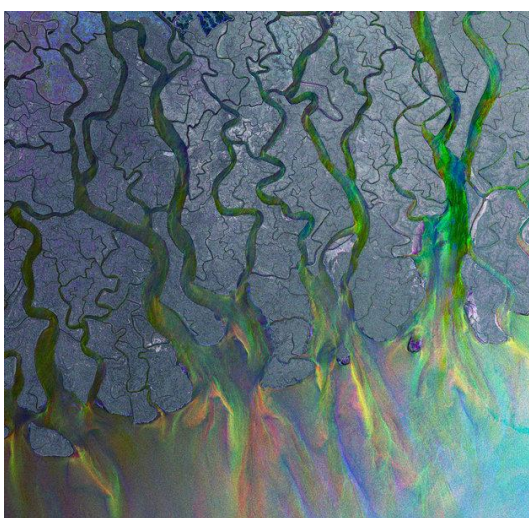
NEW BOOK: Energy Resources for Human Settlement in the Solar System and Earth's Future in Space

This Memoir is a comprehensive and integrated review of energy and mineral resources in the Solar System, including materials that can both sustain future manned expeditions and colonies in space and support Earth's energy and critical material challenges in the 21st century and beyond. All long-range programs for human exploration and settlement of the solar system recognize the vital role that extra-terrestrial energy and mineral resources must play in support of human habitation of near Earth Space and the Moon, Mars, and the Asteroids. Produced in collaboration with the AAPG Energy Minerals Division and the AAPG Astrogeology Committee, this Memoir reflects AAPG's vision of advancing the science and technology of energy, minerals, and hydrocarbon resources into the future and supporting exploration and development of the ultimate frontier, beyond Earth's atmosphere.

<http://www.aapg.org/committees/astrogeology/>

Imagery used not only as art but also as album covers

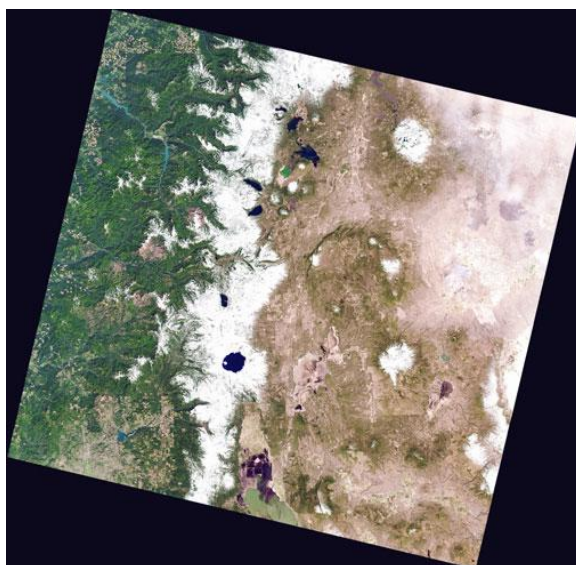
Alt-J use an Envisat SAR multi temporal colour composite of the Ganges Delta as their album cover on their debut album



http://spaceinimages.esa.int/Images/2009/07/Ganges_dazzling_delta and <http://www.bloomberg.com/photo/alt-j-album-cover-/256096.html>

First Landsat scene released to the archives

Whilst front cover shows the first Landsat image acquired it is not the first to make it into the archive as the front cover image was collected before the satellite was at its correct orbit. As of end of May 2013 data is now available to download from USGS for free - as with other Landsat datasets from USGS it does require some processing depending on your application. The first Landsat 8 scene to make it to the archive is this one acquired on 23rd April 2013 over the Cascade range, Oregon.



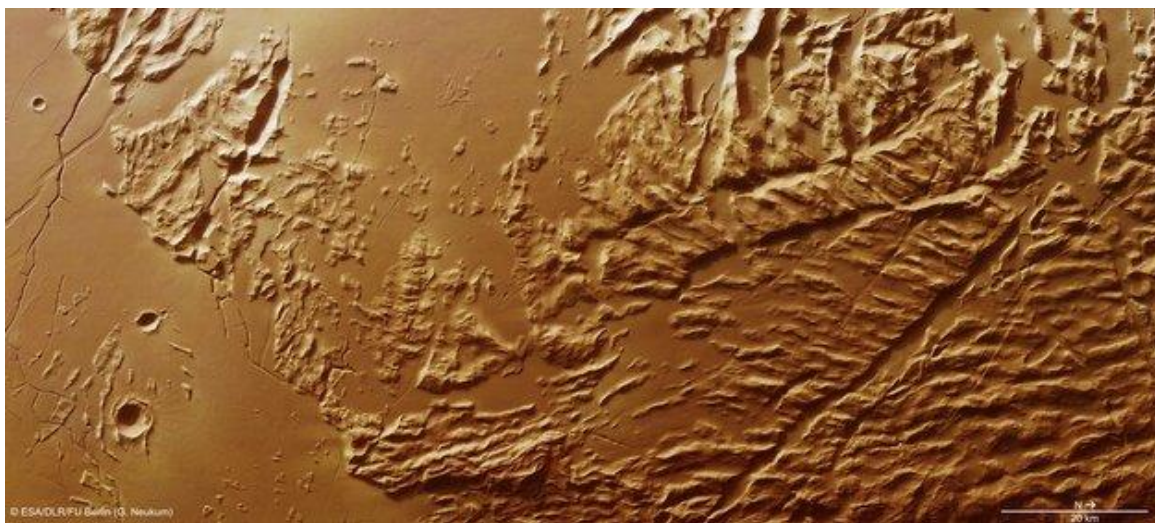
Landslides and lava flows at Olympus Mons on Mars

Giant landslides, lava flows and tectonic forces are behind this dynamic scene captured recently by ESA's Mars Express of a region scarred by the Solar System's largest volcano, Olympus Mons.

The image was taken on 23 January by the spacecraft's high-resolution stereo camera, and focuses on a region known as Sulci Gordii, which lies about 200 km east of Olympus Mons.

Sulci Gordii is an 'aureole' deposit – from the Latin for 'circle of light' – and is one of many that form a broken ring around the giant volcano, as hinted at in the context map. The aureoles tell the story of the catastrophic collapse of the lower flanks of Olympus Mons in its distant past. Today, it stands with steep cliff edges that rise 2 km above the surrounding plains.

The collapse was brought about by weakening in the rocks supporting the volcanic edifice, perhaps influenced by subsurface water. During the collapse, rocky debris slid down and out over hundreds of kilometres of the surrounding volcanic plains, giving rise to the rough-textured aureole seen today.



Source and full article at :

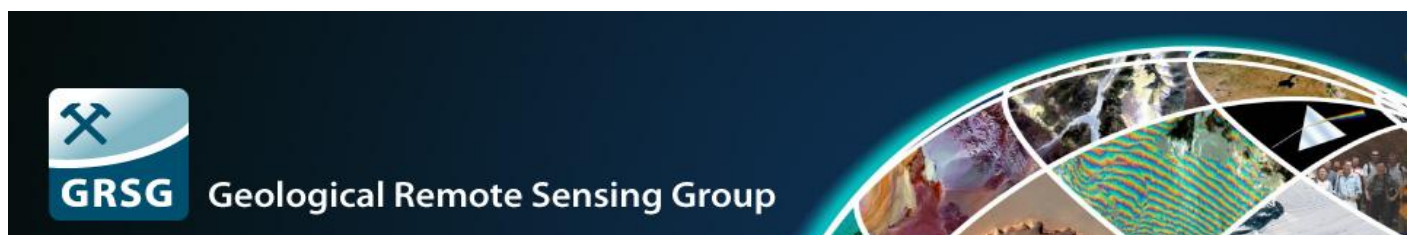
http://www.esa.int/Our_Activities/Space_Science/Mars_Express/Landslides_and_lava_flows_at_Olympus_Mons_on_Mars

Need to brush up on some remote sensing?

Why not try some of the tutorials on the NASA website. They have been around for a while but they are a great resource <http://landsat.gsfc.nasa.gov/education/tutorials.html>

For more news and information about GRSG check out the news feed on our new website!

<http://www.grsg.org.uk/>



Students



Attention all students!!

Students are also reminded that membership fees are being held at only £7 to encourage more student members to join GRSG. If you would like to join or would like to know more information please contact the GRSG Student Representative Mathias Leidig (Mathias.Leidig@port.ac.uk) or the GRSG Membership Secretary, Michael Hall (membership@grsg.org.uk).

GRSG Travel Bursary



Once again the GRSG is making a number of travel bursaries available to students who would like to attend the 2013 AGM in Berlin in December. The bursaries are each £150, towards travel and accommodation costs. All GRSG student members are eligible to apply (Student membership is only £7!!).

If you are interested in applying for this bursary then please email committee@grsg.org.uk. You should include some brief information about yourself and why you want to attend the event. Applications will then be considered by the GRSG committee.

Fieldwork Bursary



Nigel Press was very honoured by the GRSG's gesture in making him Life-time Member of the GRSG following the support of Nigel Press Associates Ltd (now Fugro NPA) in GRSG activities for a number of years. Recognising that there is still much needed scientific progress to be made in our discipline, he wanted to offer some continuing contribution for the future in return. Nigel is therefore pleased to announce that a fieldwork bursary fund run by his family is being opened to Members of GRSG. The Fund provides a few bursaries each year, mainly to MSc students, to undertake fieldwork which has a humanitarian, sociological or environmental benefit, and ideally is carried out in conjunction with an NGO. Selection of projects is made purely on merit; last year The Fund partly supported a GRSG member, Naomi Morris, on a very ambitious trip to work on geo-hazards in Papua New Guinea, other recipients included undergraduates from Oxford who worked on the Colima volcano in Mexico and L'Aquila earthquake site in Italy.

More details on this opportunity and how to apply can be found at www.lydiapress.org

Student Award Winners 2013



Mathias Leidig, University of Portsmouth

Dear Membership,

it is my pleasure to announce the 2013 Geological Remote Sensing Group Student Awards. Not only did we get a new record number of applicants this year, but there was also a very high quality of the applications from student members both from the UK and overseas. This has made it difficult for the committee to make a selection as the differences were very small. However, we found that the following three applications stood out in this year's competition (in alphabetical order):

- **Jennifer Harris** (Birkbeck University of London) - *Remote and in-situ reflectance spectroscopy of Mars-analogue hydrothermal alteration*
- **Amy Woodget** (University of Worcester) - *An assessment of the use of high resolution imagery collected from an unmanned aerial system for the quantification of fluvial topography*
- **Yu Zhou** (University of Oxford) - *Active faulting and tectonics of the Ordos block in northern China*

Once again, congratulations to the award winners.

I would also like to thank all the applicants who have been unsuccessful on this occasion for their contribution and encourage them to apply again next year, maybe with a slightly modified or new proposal.

Additionally I'd like to remind all GRSG student members that we are making student travel bursaries available to attend the AGM in Berlin in December ('Status and developments in geological remote sensing', 9-11 December 2013, Berlin, Germany).

The student travel bursaries for the AGM are completely independent from the Student Awards and aim to support students to attend and present your research via poster or oral presentation to an international academic and commercial audience.

Mathias Leidig,
GRSG Student-Rep

How to take a satellite to the opticians



Beyond maneuvering into the right orbit, there are a series of check-out procedures to make sure the satellite performs in space as it did in ground tests. You have to make sure the communication signals are strong and clear. You have to exercise moving parts like shutters and doors. You have to make sure the solar panels are oriented to the Sun and batteries and thrusters are working properly.

For a satellite designed to take images—such as the Landsat Data Continuity Mission (LDCM)—a critical step is calibration, both at the beginning of the mission and throughout its lifetime. There are many steps to calibration, but a key one is determining whether the

observations of light and color reflected by Earth's surface match what can be observed with instruments and eyes on the ground. And since LDCM is the eighth satellite in a long line of Earth observers, calibration also involves matching new observations with how the previous satellites saw things.

The natural-color satellite image above was captured by the Operational Land Imager on LDCM on March 29, 2013. The scene includes a dry lake bed in the Arizona desert known as Red Lake Playa. On the day of the satellite image, researchers took measurements with instruments on the ground and from an airplane (second image) while LDCM took measurements from about 700 kilometers (500 miles) overhead. LDCM flew on the same orbital path (but slightly lower altitude) as the Landsat 7 satellite, which has been making observations since 1999. The two satellites took coincident measurements from March 29–31, collecting more than 1,000 common scenes.



The playa in Arizona—not far from the towns of Dolan Springs (left) and Kingman (not in view)—was chosen for the calibration activity because it is remote, sparsely vegetated, high altitude, and flat. “We like to use bright, uniform and level sites, often in the southwestern United States” said Brian Markham, the leader of the LDCM calibration team and a scientist at NASA’s Goddard Space Flight Center. Such features assure that there is less distortion of the signal by moisture, clouds, and pollution in the atmosphere. Such areas also tend to change little over time, making them ideal for calibrating instruments over several generations.

In the photo, NASA Goddard scientist Joel McCorkel is operating the Solar and Lunar for Absolute Reflectance Imaging Spectrometer (SOLARIS), a portable instrument to observe the properties of light reflected by the land surface. The plane is carrying the Goddard Lidar, Hyperspectral, and Thermal (G-

LiHT) instrument, a portable imaging system that maps the composition, structure, and function of terrestrial ecosystems. “The lidar provides 3D information about the distribution of foliage and canopy elements,” said Bruce Cook, also from Goddard. “Imaging spectroscopy helps discern species composition and variations in biophysical variables. And the thermal measurements quantify surface temperatures and detect heat and moisture stress.”

“These measurements transfer the advanced laser-based calibration from the lab to the test site and finally to the new and old Landsat sensors,” said McCorkel. “The ground and airborne instruments used during this campaign measured light in hundreds of separate spectral (color) channels. This means that effects of differences between the new and old Landsat sensors can be studied in greater detail.”

Source: <http://earthobservatory.nasa.gov/IOTD/view.php?id=80913&src=eoa-iotd>

Wot's 'APPening



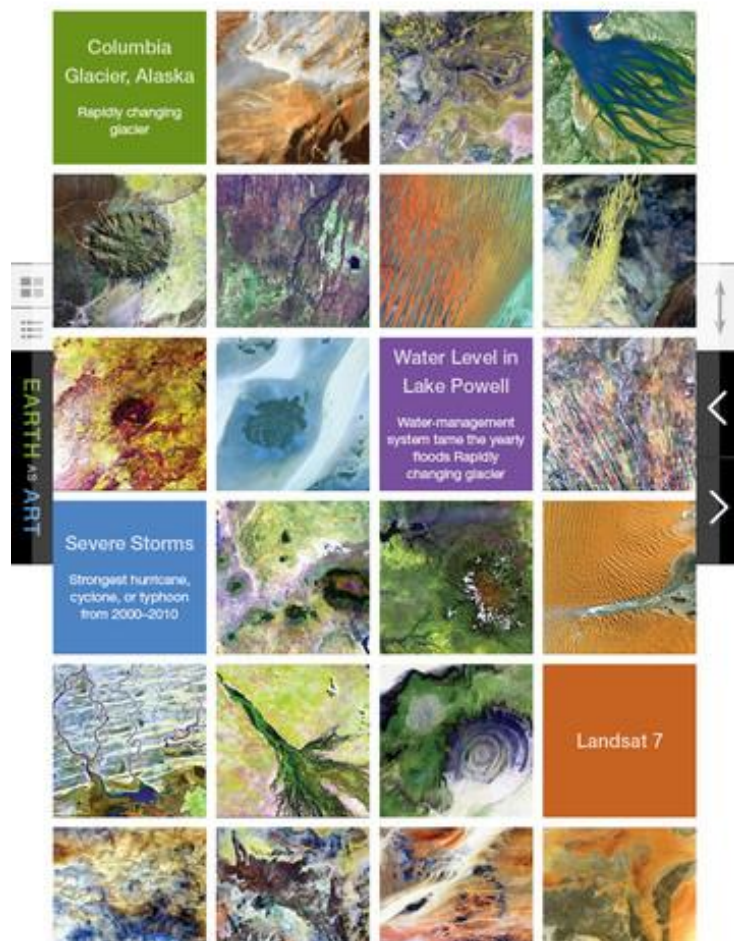
Charlotte Bishop, GRSG Newsletter Editor

Earth as Art App: In 1960 the United States put its first Earth-observing environmental satellite into orbit around the planet. Over the decades these satellites have provided invaluable information, and the vantage point of space has provided new perspectives on Earth. This app celebrates Earth's aesthetic beauty in the patterns, shapes, colors, and textures of the land, oceans, ice, and atmosphere.

The app features stunning images of Earth from the Terra, Landsat 5, Landsat 7, EO-1, and Aqua satellites. Sensors on these satellites can measure light outside of the visible range, so the images show more than what is visible to the naked eye. The app draws on several images from the USGS Landsat image gallery and introduces many new images.

This app features time-lapse satellite images of locations on Earth undergoing significant change over decades, linking to NASA's Earth Observatory website. The app has a thumbnail gallery of the images as well as an interactive directory with images organized by geographic region. Each image has a brief caption and the ability to enlarge each scene.

The beauty of Earth is clear, and the artistry ranges from the surreal to the sublime.















Have you come across any Apps that would be of interest to the GRSG? If so then please send them to me newsetter@grsg.org.uk



2013 Webinar Series



Next up...

- | | | |
|----------------------|---|--|
| <p>Online</p> | <p>Viz World and DigitalGlobe Online in the Broadcast Environment</p> <p>Chris Black
<i>Viz World Product Manager, Vizrt</i></p> <p>Register to download</p> | 
 |
| <p>Online</p> | <p>Vricon Provides Military Personnel with 3D Globe</p> <p>Manne Anliot
<i>Director, Marketing and Sales, Saab</i></p> <p>Register to download</p> | 
 |
| <p>Online</p> | <p>Satellite Derived Seabed Mapping Products</p> <p>David Critchley
<i>CEO, Proteus</i></p> <p>Register to download</p> | 
 |
| <p>22 May</p> | <p>Vegetative Analysis with High-Resolution Multispectral Satellite Imagery</p> <p>Julia Yagüe
<i>Payload Data Processing and Applications Business Unit, GMV</i></p> | 
 |
| <p>12 June</p> | <p>A Land Knowledge Management System—Agriculture and Cadaster</p> <p>Brooke Tapsall
<i>Spatial International Business Development, Abaco</i></p> | 
 |
| <p>26 June</p> | <p>Planning the Next Generation of Wireless Networks</p> <p>Colin Urwin
<i>Vice President, Marketing, ComputaMaps</i></p> | 
 |

Check website for up-and-coming webinars
 » digitalglobe.com/webinars



REGISTER NOW and automatically be entered into the Apple iPad mini draw for selected webinars. Winners will be announced during each webinar. Terms and conditions apply.

RSPSoc Wavelength Conference 2013



Xue Wan, Imperial College London

The wavelength conference was organized by RSPSoc on 11th-13th March 2013. Glasgow had an unexpected sunny weather to welcome the over fifteen participants for three days. The conference provides a fantastic way for the students and young professionals in remote sensing and photogrammetry to discuss and interact with each other.

Monday afternoon saw two sessions. The first session was *Monitoring Seas & Lake*, which three PhD students made presentations about management of seas or lakes by remote sensing methods. Then, Colm Jordan, BGS (British Geological Survey), gave a keynote speech about the earth observation and the earth science. He shared his own experience in surveying and mapping in BGS, which was appealing to the young PhD students and professionals. The second session was *the Development of Image Processing*. In this session, two PhD students presented their research on UAV image de-blurring. I gave the last two presentations in this session. One is about my work on corner and edge detector for aerial images, and the other is an short introduction to GRSG. In the evening, we went to the Old Schoolhouse Pub for drinks and for pub quiz. We divided into different groups and competed for the final prize. Sadly my team did not win at last, but we had a wonderful time cooperating together.

The Tuesday morning was for social activities. There were three choices for us, namely speed boat trip, sightseeing bus tour and Riverside Transport Museum visit. The sightseeing bus tour which I took was a good decision. The cloud-free blue sky was excellent for sightseeing, as well as for some nice pictures. The session began in the afternoon by Iain Woodhouse, University of Edinburgh. He talked about his research on forest monitoring using airborne and satellite measurements. The two presentation sessions in the afternoon are *Commercial and Sustainable Remote Sensing* and *Laser Scanning*. Then, it went on to the poster session which took place in Youth Hostel of Glasgow. I had some interesting chats with other scientists from diverse research backgrounds. In the evening, we went to pub again for a comedy show.



The last day session started by Patrick Harkness, who is working for University of Glasgow and Clyde Space. The following program was a session of *Remote Sensing for Detection and Classification*. Four young scholars presented their research about using remote sensing images for spectral mixture analysis, land use, gas flaring sites and archaeology. Then, we voted for the best presentation and best poster. We also gave surprise to Andy Singleton and Amy Woodget for their hard work and good organisation of the whole conference. The conference is well-organised, and offered a wonderful opportunity for young scholars in remote sensing to

communicate with each other.

ASD invites you to 'Show us what you've got'



[ASD Inc.](#) is now accepting submissions for the eighth annual Alexander Goetz Instrument Support Program. ASD continues its tradition of challenging graduate students from all fields of study involving remote sensing and field spectroscopy to submit their innovative, clever and visionary research projects for the 2014 calendar year.

Graduate students pursuing a master's or doctoral degree, with the most original research proposals, will be awarded a FieldSpec® 4 Standard-Res spectroradiometer or a FieldSpec HandHeld 2™ spectroradiometer for a specified period of time. Both instruments are known for performance and portability. Students may use the spectroradiometers for a wide range of field research applications, such as hyperspectral image interpretation, image validation and multispectral remote sensing study and analysis.



Applicants must be attending an accredited college or university in the United States or in most countries where Carnet documentation for shipments is accepted. Each recipient is eligible for up to \$500 to cover the cost of publication fees (if the resulting paper is accepted for publication in a scientific journal) and/or travel assistance for the presentation of an accepted abstract at a relevant scientific conference. The program organizers also request the participants provide ASD with a short summary of their research and results.

Proposals for the 2014 program are due Oct. 15, 2013. Proposals do not need to be of immediate practical application or have a guarantee of success. Priority will be given to proposals that creatively bridge multiple disciplines. An interdisciplinary review committee will carefully assess each submission to make final selections. Accepted students will be announced in early December 2013.

“Our 2013 program winners are pursuing diverse and inventive research applications,” said Dr. Brian Curtiss, CTO of ASD. “We believe research students worldwide are excited to apply NIR instrumentation solutions to fields beyond traditional remote sensing and spectroscopy. We expect to see a wide variety of unique topics during this year’s submission process. We’re challenging the students to show us what they’ve got.”

The program was named for ASD’s co-founder, Dr. Alexander Goetz, in recognition of his contribution to the study and advancement of remote sensing applications. Dr. Goetz retired from his position at ASD as Chief Scientist in January 2013. Additional information about the program and proposal guidelines is available on the [Goetz Instrument Program](#) page.

ASD Inc. is now also accepting submissions for the first annual Students in Mining TerraSpec Instrument Program, created to stimulate innovative research in mining education, exploration and production. The program is designed to support student researchers whose projects will benefit from the temporary use of a full-range TerraSpec 4 Hi-Res mineral spectrometer system. Additional information about this program and proposal guidelines is available on [Students in Mining TerraSpec Instrument Program](#) page.

XVI Brazilian National Remote Sensing Conference



Freek van der Meer, ITC, University of Twente

The XVI Brazilian National Remote Sensing; to be or not to be...?



The XVI Brazilian National Remote Sensing (SBSR or Simpósio Brasileiro de Sensoriamento Remoto) conference was organized in Foz do Iguazu (13 - 18 April 2013) in Central Brazil at the border between Argentina and Paraguay. This town is particularly known for its waterfalls named the Cataratas del Iguazu or simply Iguazu falls and a large hydropower dam, the Itaipu Dam (generating 20% of Brazils energy), not far from the town. The falls rumble from a basalt plateau (that can be correlated to basalts in Africa) over 80 meters high, the falls have the second-greatest average annual flow of any waterfall in the world; spectacular, also the geology around it. The town itself inhabits 260.000 people and from a touristic perspective is not worth a visit. They do have, like in many places in Brazil, nice Churrascaria restaurants, or restaurants selling meat served by Passadores (meat waiters) that come to your table with knives and a skewer and sticks of meat.

The conference was organized in the Rafain Palace conference centre. Besides in the name I did not discover the Palace itself. The centre was a convenient venue with a hotel attached to area where the conference took place. The XVI SBSR was opened on Sunday evening 12 April through a huge event where all the Brazilians were nicely dressed, 8 consecutive speeches were delivered, the national hymn was sung and all lasted for two hours. I did not witness the event but here report of what I had heard through the grapevine. My flight landed at 23:59 on Sunday evening after a 2 hour domestic flight from Rio de Janeiro and a 12 hour long haul flight from Amsterdam. Overall a 24 hour itinerary, but worth all the effort as I will explain below.

The first meeting of SBSR was held in San Jose where INPE (the Brazilian space agency) is located. Lenio Soares Galvao (from INPE) told me that at that time, 1978, they could accommodate all participants in 2 buses that would drive to downtown every day for lunch.

Now in 2013 the meeting has a large (see right), courses and tutorials before and after the conference and workshops and plenary/poster sessions forming the heart of the meeting. More than 1,200 scientific papers overall with more than 2,800 authors were presented covering areas of interest related to remote sensing including agriculture, image processing, geology, meteorology, environment, oceans and inland waters, land use and land cover changes etc.



Brazil is truly an emerging economy that is readily and fast growing in all aspects. They operate their own satellites jointly developed with China: CBERS. CBERS 1 was launched in 1999, since that time several follow up satellites were launched. INPE, the Instituto Nacional de Pesquisas Espaciais, is the National Institute for Space Research, also organizer of SBSR conferences. A lot of vendors were attending the conference. Spectral evolution, HySPEX, Imagem, ASTRIUM, OrbiSat, Thretek, AMSKepler, INPE, EUMETSAT, Hexagon were among many others that contributed to a lively exhibition. Clearly a sign that business can be done in Brazil.

In terms of social events better not go to SBSR. The conference dinner was organized in the 'German Castle' which turned out to be a restaurant with inferior quality food, loud live music however with good beer. None of the waiters spoke German though. Another unique social event was the SBSR soccer tournament in which 5 teams competed for the trophy of best Brazilian remote sensing football team. As you can imagine knowing the Brazilian spirit and admiration for the game, the soccer matches were passionate and a joy to watch.



Benoit Rivard(left) and Carlos de Souza Filho (right) at the poster session

In terms of remote sensing and geology I think Brazil is one of the places to be. Besides various mining activities in particular there is a strong link between remote sensing and oil and gas industries notably Petrobras. They are operating onshore and have plans to go offshore and in all events remote sensing is considered, as opposed to (in my opinion) other parts of the world where other oil majors are active, an essential tool. Throughout the poster sessions and the talks there are several presentations on onshore oil seeps, offshore seepage detection and related work. They have been flying the ProspecTIR VNIR-SWIR system and many presentation center on the use of this excellent data. But also ASTER is used for seep detection and monitoring and they have large scale field experiments to back up some of the remote sensing products. Greenhouse experiments on vegetation response to gas and oil, outdoor experiments with leakage, even soil polluted with different oil types are overflown with the airborne hyperspectral system. My counterpart, Prof Carlos de Souza Filho of the famous University of Campinas where also Alvaro Crosta (of the crosta composites) is working, is a spin in this hydrocarbon spectroscopy web. It seemed that all the ongoing MSc and PhD

research in this topic is somehow coined to him. Together with Carlos I organized a session on geologic

remote sensing which was attended by well over 100 people. The pleasure and honor was mine to give an overview talk on multi and hyperspectral remote sensing based on my review paper with same title published in the International Journal of Applied Earth Observation and Geoinformation. Please read that (advertisement part). The other talks were by Carlos de Souza Filho on clay spectroscopy of industrial clays, very interesting talk, a presentation on geomorphometry by Prof Carlos Henrique Grohmann. The best was yet to come though. Prof. Benoit Rivard from the University of Alberta gave a great talk about mapping in ultramafic terrains using sebas and AISA data thus comparing 278 strips(!) of longwave infrared and shortwave infrared data in an area that is 70-90% lichen covered. His results were truly amazing. In addition he showed some of the work they do with their sisurock system up Edmonton. Another great talk was by Dr. Talita Lammoglia who is working in Petrobras and does try to maintain a research career along the side at UNICAMP. She published two papers on onshore and one on offshore seeps in remote sensing of environment and presented that work. She used spectroscopy to predict API, oil viscosity, and also did a lot of ASTER based mapping of seeps.

Another great talk was delivered by CSIRO based Tom Cudahy who had compiled a seamless ASTER product on the entire continent of Australia and used this to map essential soil variables on the continent advocating that these are essential contributors from the geology community to the global climate debate. Sabine Chabrilat from GFZ presented the HYSOMA soil mapping tool and the present status of EnMAP. In addition, a full afternoon session was dedicated to 'geology'.

It was nice to see that there were many young people at the conference. The set up of the conference was that there were workshops in the morning featuring keynotes and plenary sessions with 20 minute talks in the afternoon. The last part of the day, 17:00-18:30, was used for poster session. Contrary to what I have seen often at conferences these poster sessions were extremely lively. Maybe too lively as the noise level in the room was so high that one could hardly understand each other. Another minor issue with the conference is that all the posters and nearly all presentations in the afternoon sessions were in Portuguese. I could sort of follow the presentations, certainly the ones that are on topics close to my own research, but it puts the non-Brazilians surely to the test.

Overall I really enjoyed attending this meeting. Seeing so much geology and clearly experiencing that geologic remote sensing is appreciated and seen as an important topic is nowadays in remote sensing conferences, other than GRSG AGM's, a rare thing. If you willing to invest in a long trip and if you do not mind to put your Portuguese to the test in that case visiting SBSR is a real pleasure. The next SBSR is in 2 years time likely again somewhere in Mid April. At the time of writing I do not yet know the location more precise than 'somewhere in Brazil' but having seen this edition I am confident the organizers will again position it in a swell place.

The XVI Brazilian National Remote Sensing; to be or not to be...? I would argue 'to be' (certainly from a geologic remote sensing more specifically oil/gas point of view).

Freek van der Meer
University of Twente, Faculty ITC

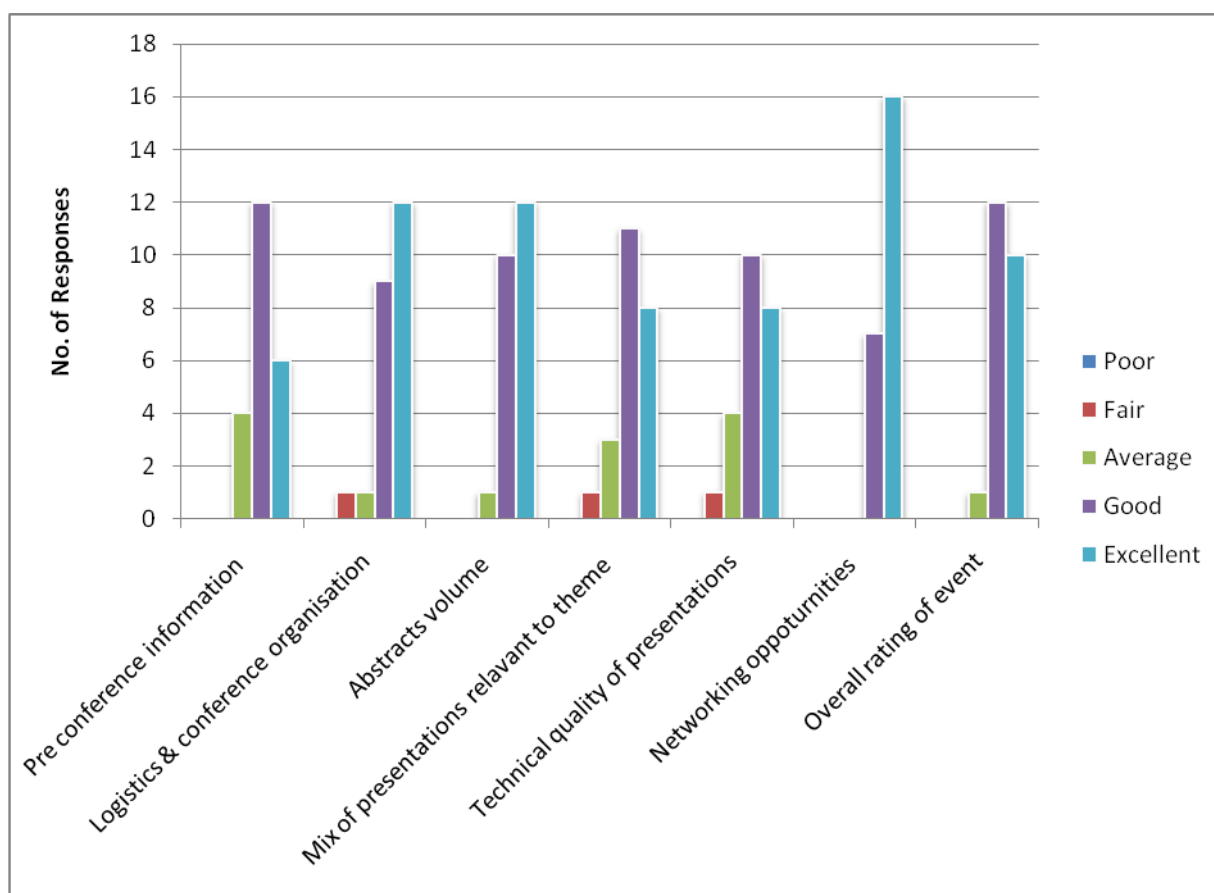
GRSG Survey Monkey Results: AGM 2012



Charlotte Bishop, CGG NPA Satellite Mapping Ltd

Below is a short summary of feedback from the 2012 AGM. We encourage feedback to the GRSG for a variety of reasons but perhaps most importantly is that we are organising these events for you as our members and also for other interested parties. The more feedback we get, good and bad, the better we can make the following years events and ensure we are doing our best by the membership.

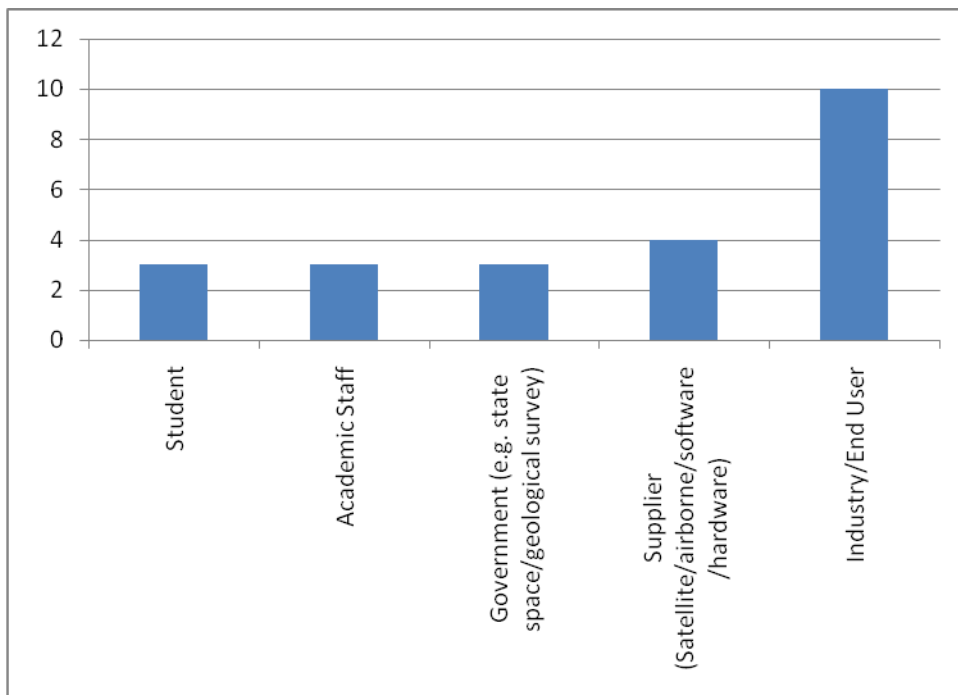
Overall we only had 24 responses to the GRSG AGM 2012 survey, so thank you to all those who provided their feedback but this accounts for such a small percentage of attendees so interpretation of the results has to be done with some caution. In fact most of those that did complete the survey were new GRSG attendees with the GRSG AGM 2012 being the first they had attended, so it is still very valuable feedback to gather. Of those that responded all attended across the three days with a slightly lower percentage on Day 3. Whilst it is difficult to gauge this based on the survey from attending the GRSG I would say that is a fair representation of the attendance over the three days. The graph below shows the overall rating on the event and the pre conference information the comments here are largely good or excellent which is great to see and if that truly is representative of what you all thought then thats fantastic. Some comments were made by respondents on the final programme being circulated very late, this is something we are very aware of and do strive to improve on every year but we realise that this is still a problem and we are working on it!



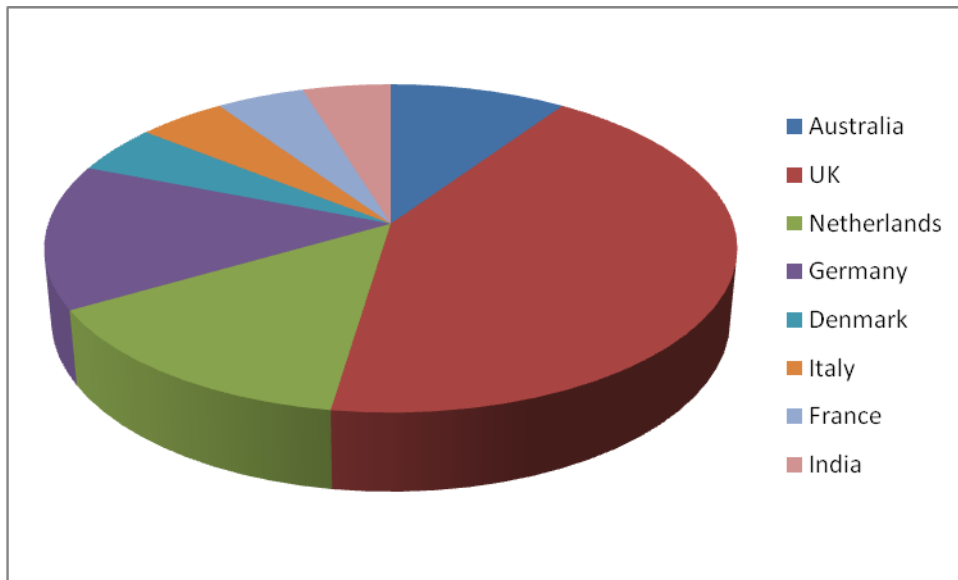
Of those that responded only 4 of them were also sponsors and most felt the opportunities and promotion possibilities were good or excellent (75%). No comments were left under this question but we welcome feedback from sponsors and exhibitors on what they would like to see at our events that perhaps we haven't considered or provided previously we can then consider this. Last year was the largest exhibition

we have ever had at the GeoSoc and split across two rooms it seemed to work well but we do appreciate that space is much more limited at the GeoSoc than what we had at Frascati in 2011.

In terms of organisation type of the respondents there was a mix across all sectors, Industry, Supplier as well as University students and staff. Whilst this isn't truly representative of the actual spread of attendees it does at least give us a good range of responses from the different 'organisation' groups.



Of these users we had responses from across the world, the UK, perhaps unsurprisingly with the most, along with different areas of Europe, Australia and Asia.



When asked ~50% of respondents said they would be very likely to attend the GRSG 2013 in Germany and the rest were undecided with only 1 respondent suggesting they were unlikely to, no specific reason was given. Of those likely to sponsor (~50% of respondents) half were likely to sponsor the 2013 AGM with the rest a mix between undecided and unlikely.

Our final section was for comments, suggestions, session options etc for forthcoming events. Here we had a range of responses. Some were key issues we had also identified we mistakenly omitted such as not having the organisation name on the delegate badge, this was clearly an oversight for which we apologise, those regular to GRSG know that this information is normally included on the delegate badge and it will be for subsequent years. One respondent noted that there should be better peer review of the

presentations to reduce the inaccuracies or outdatedness in work presented. It is important to note that we are a voluntary committee and not a peer review committee and do not portray itself as such. Whilst all abstracts are reviewed by the committee and discussed for appropriateness it is sometimes difficult from a shorter abstract to ensure the quality of the final presentation. Overall, the committee was very pleased with the range and quality of the presentations given at the 2012 AGM. We also like to encourage student presentations where appropriate to the theme as the GRSG is a good forum for them to be able to present their work in perhaps a slightly less formal environment than some larger conferences. Some of their work by its very nature maybe early in their research and presenting at any stage is still valid.

The final note was with regards to the student travel grant asking for a higher amount to be provided. The travel bursaries are designed to provide some financial assistance for students to attend the aGM, students should also be aware that they can apply for our annual Student Awards of up to £750, these are provided each year around March/April and there is no problem if a student wishes to use this award to attend the GRSG AGM. If that is of interest, please keep an eye out for announcements of next year's student awards!

Thank you once again for the comments and responses from all who participated and if there is anything else that you think we as a committee can improve upon then please email us and let us know. Whilst we may not be able to do everything we will do our best to implement ideas where appropriate and possible to do so.

GRSG AGM Sponsors 2012



analytikLtd
analytical solutions

ARUP



DIGITALGLOBE®

EXELIS



Visual Information Solutions



itres



GRSG International Reps



Bob Agar

AGARSS Pty Ltd
32 Wheelwright Road,
Lesmurdie , WA 6076, Australia
Tel: 619 291 7929
Email: bagar@agarss.com.au

Australia

Okke Batelaan

Dept. of Hydrology & Hydraulic Eng.
Vrije Universiteit Brussel
Pleinlaan 2, 1050 Brussels, Belgium
Tel: +32-2-6293039
Email: batelaan@vub.ac.be

Belgium

Vernon H Singhroy

Canada Centre of Remote Sensing
588 Booth Street, Room 207 Ottawa
Canada K1A 0Y7
Tel: 613 947 1215
Email:
vern.singhroy@ccrs.nrcan.gc.ca

Canada

Athanassios Ganas

Geodynamics Institute
National Observatory of Athens, 118
10 Lofos Nymfon,
PO Box 20048,
Athens, Greece
Tel: +30-210-3490186
Email: aganas@gein.noa.gr

Greece

Tod Rubin

Chevron
Chvpk / C212
Box 6046
San Ramon, CA 94583, US
Tel. +1 925 842 0676
Email: TRubin@Chevron.com

USA

Mark Nightingale

Shell China Exploration and
Production Company Ltd
26/F, Yanlord Landmark Office, No.
1, Section 2, Renmin South Road,
Chengdu, 10016, P.R. China
Tel: +86 2865 304050
Email: Mark.Nightingale@shell.com

China

Nurgul Amanova

NCOC
Astana Office, Room 11-11
2 Kunaev Street
010000 Astana
Kazakhstan
Tel: +7 (7172) 35 5861
E-mail: nurgul.amanova@ncoc.kz

Kazakhstan

Richard Bedell

Rengold
940 Matley Lane, suite 17,
Reno NV 89502, USA.
Tel. +1 (775) 337-1545
E-mail: rbedell@rengold.com

USA

Alvaro Crosta

Geosciences Institute
University of Campinas
P.O. Box 6152, 13083-870
Campinas SP Brazil
Tel: +55-19-3521-5120
E-mail: alvaro@ige.unicamp.br

Brazil

Amer Smailbegovic

Photon
Matice Hrvatske 15
Split, Croatia
Tel. +387 61555620
Email. amer@photonsplit.com

Croatia

Takashi Nishidai

NLC Associates
3-33-1-111 Hatagaya,
Shibuya-ku
Tokyo, 151-0072 Japan
Tel: +81 3 3375 7212
E-mail:
takashi.nishidai@nlcrsa.com

Japan

Christian Haselwimmer

University of Fairbanks
903 Koyukuk Drive
PO Box 757320,
Fairbanks, AK 99775-7320, USA
Tel: +1 907 4747676
Email: chha@gi.alaska.edu

USA

Richard Eyers

The Shell Petroleum
Development Company of
Nigeria Limited
Port Harcourt, Nigeria
Phone +234 8 0703 21680
Email:
Richard.Eyers@shell.com

Nigeria

GRSG Lifetime members



John Berry, Berry Associates services to GRSG, USA Rep

Claire Fleming, BGS, Service to the committee & Treasurer

Alistair Lamb, Infoterra, Services to the committee & Chairman

Geoff Lawrence, TREICol, Founding Chairman

Stuart Marsh, BGS, Services to the committee & Chairman

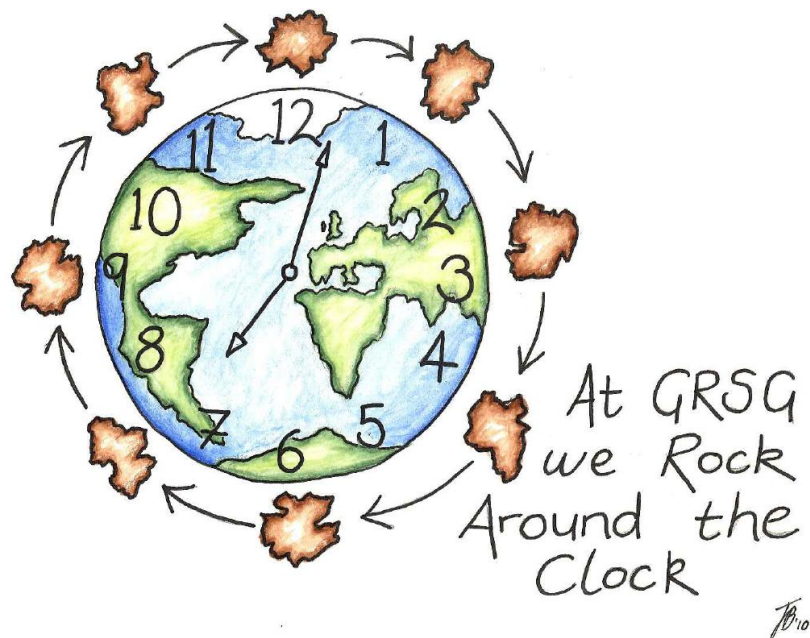
Philippa Mason, HME Partnership/Imperial College, Services to the committee & Secretary

John McMahon Moore, Imperial College, Services to the committee & Vice Chairman

Nigel Press, Fugro NPA Limited, Recognition of long term Corporate membership & NPA Student Award

Dan Taranik, Exploration Mapping Group Inc, Services to the committee & Chairman

Richard Teeuw, University of Portsmouth, Services to the committee & Chairman



GRSG Corporate Members



ARUP

Arup

Jason Manning
Senior Geologist
13 Fitzroy Street, London W1T
4BQ
T : +44 (0)20 77 55 32 14
F : +44 (0)20 77 55 21 21
E-mail : jason.manning@arup.com
Website : www.arup.com



Analytical Spectral Devices, Inc.

Amanda Griffin
Marketing Communications Manager
2555 55th Street, Suite 100
Boulder, Colorado 80301 USA
(303) 444 6522 Ext. 129
Email : Amanda.griffin@asdi.com
Website : www.asdi.com



Astrium GEO

Michael Hall
Atlas House
41, Wembley Road, Leicester LE3 1UT
Tel: 0116 273 2300 Fax: 0116 273
2400
Email: Michael.Hall@infoterra-global.com
Website: www.infoterra-global.com



Barrick Gold Corporation

Xiaodong Zhou
Senior Geologist, Exploration
Suite 3700, 161 Bay Street
Toronto, Canada M5J 2S1
Tel: 416 3077366
Fax: 416 8610008
E-mail: xzhou@barrick.com
Website: www.barrick.com



British Geological Survey

Luke Bateson
Keyworth, Notts, NG12 5GG
Tel: 0115 936 3452
Fax: 0115 936 3474
E-mail: lbateson@bgs.ac.uk
Website: <http://www.bgs.ac.uk>



Visual Information Solutions

BHP Billiton

Dan Taranik
Minerals Exploration
Marina Bay Financial Centre, Tower 2,
Level 44
10 Marina Boulevard #50-01
Singapore 018983
Tel: +65 6421 6794 (direct)
Tel: +65 9184 9637 (mobile)
Email: Dan.Taranik@bhpbilliton.com
Website: www.bhpbilliton.com

CGG NPA Satellite Mapping Limited

Charlotte Bishop
Crockham Park,
Edenbridge,
Kent, TN8 6SR, UK
Tel: +441732 865023
Email: charlotte.bishop@cgg.com
Website: npa.cgg.com

DigitalGlobe International

Alastair Cannell
Building 3, Chiswick Park
566 Chiswick High Road
London
W4 5YA
Email: acannell@digitalglobe.com

Integrgraph | ERDAS

Andy Garratt
EMEA Geospatial Regional Manager
Delta Business Park,
Great Western Way,
Swindon, Wiltshire SN5 7XP
Cell. +447740768897
Email: andy.garratt@intergraph.com
Website : www.erdas.com

ExxonMobil

Adam Carter
Mail Stop URC-URC-S169A
Room S-155.
P.O. Box 2189,
Houston, TX 77252-2189, USA
Email: adam.j.carter@exxonmobil.com
Website: www.exxonmobil.com

Exelis Visual Information Solutions

Robin Coackley
2 Arlington Square,
Bracknell,
Berkshire
RG12 1WA
Tel: +44(0)1344 747447
Fax: +44(0)1344 742898
Email: robin.coackley@exelisvis.com
Website: www.exelisvis.eu



Geoimage Pty

Unit 13, 180 Moggill Road, Taringa,
Qld, 4068 | PO Box 789
Indooroopilly, QLD, 4068 |
Tel: +61- 7-3871 0088
Fax: +61- 7-3871 0042
Email:
geoimage@geoimage.com.au
Website: www.geoimage.com.au

ITC International Institute for Geo-Information

Freek van der Meer
Science and Earth Observation
PO Box 6, 7500 AA Enschede, The Netherlands
Tel: +31 53 487 4444
Fax: +31 53 487 4200
Email: vdmeer@itc.nl
Website: www.itc.nl

PhotoSat

Gerry Mitchell
President
1050 West Pender Street, Suite 1710
Vancouver, BC
Canada V6E 3S7
Tel: 604-681-9770
Fax: 604-681-9790
Email: Gerry@photosat.ca
www.photosat.ca

Rio Tinto Mining and Exploration

Tim Gray
2 Eastbourne Terrace,
London, W2 6LG
United Kingdom
Tel: +44 (0)7920 810960
Email: timothy.gray@riotinto.com
Website: www.riotinto.com

Southern Mapping

Norman Banks
39 Kingfisher drive
Fourways
2055
South Africa
Tel: +27 11-467-2609
Fax: +27 11-467-3443
Email: norman@southernmapping.com
Website: www.southernmapping.com

Shell International Exploration and Production

Christoph Dittman
Kessler Park 1,
2288GS Rijswijk
The Netherlands
Email: Christoph.Dittmann@shell.com
Website: <http://www.shell.com>



Spatial Energy

Bud Pope
1881 9th Street, Suite 303,
Boulder, Colorado, USA
Tel: +1 303 625-1048
Email: bpope@spatialenergy.com
Website: <http://www.spatialenergy.com>

Specim

Ana Aranda
Teknologiantie 18 A
Oulu
90590
Finland
Tel: +358 (0)104244400
Email: info@specim.fi
Website: www.specim.fi

SpecTIR

Conrad Wright
Vice President, International
Development
Remote Sensing Services
9390 Gateway Drive, Suite 100
Reno, Nevada 89521 U.S.A.
775.329.6660 (office)
775.771.7386 (mobile)
775.329.6668 (fax)
Email: conrad@spectir.com
Website: www.spectir.com

TRE

Stefano Cespa
Via Ripa Di Porta Ticinese 79
20143
Italy
Tel: +39 02 434 3121
Email: stefano.cespa@treuropa.com
Website: www.treuropa.com/

GRSG Membership Renewal



Please print out and sign the completed form (we need your signature) and scan and email or return by fax or post

treasurer@grsg.org.uk
 +44 (0)115 936 3200 (fax)
 +44 (0)115 936 3043 (phone)
 Mr L Bateson (GRSG)
 British Geological Survey
 Kingsley Dunham Centre
 Keyworth
 Nottingham
 NG12 5GG

(Please print all details clearly):

Full name		
Position		
Company/Organisation		
	Billing address	Correspondence address (if different)
Street 1 Street 2 State/County		
Postcode/Zip		
Country		
Telephone		
Email address		

Please also complete the following section

The Data Protection Act 1998

The information supplied on this form will be retained by the GRSG in a database of members. The information may also be used by the GRSG for marketing of future events organized or promoted by the GRSG which may be of interest to you.

If you do not wish to receive such information please tick this box

The GRSG may supply your information to the GRSG corporate sponsors, at any time. If you do not wish your information to be used in this way please tick this box

A. 2011 Membership

(please tick)

- Individual: UK £ 40
- Student UK£ 7
- Retired: UK £ 7
- Corporate: UK £ 20

Corporate members are entitled to distribute the GRSG newsletter in their organisation and to have their logo and contact details displayed in the GRSG newsletter and website.

Pay by credit/debit card cheque (£) invoice (please tick)

Please make cheques payable to GEOLOGICAL REMOTE SENSING GROUP and send to the address above.

Invoicing and bank transfer details are available on request.

A receipt can be provided on request.

Visa Mastercard No card handling fee. The GRSG accepts international credit cards, providing the card company can be billed in GBP.

Card account Number:

Print name of cardholder:

Authorised signature:

Valid from:

Expiry date:

Disclaimer



No responsibility is assumed by the GRSG for any injury and/or damage to persons or property as a matter of product liability, negligence or otherwise, or from any use or operation of any methods, products, instructions or ideas contained in the material herein. Advertising material in this publication does not constitute a guarantee or endorsement by the GRSG of the quality or value of such product or of the claims made by its manufacturer.

The GRSG does not purport to have a unified view and this newsletter is a forum for the views of all its members and their colleagues in industry, colleagues and government on a free and equitable basis.

This newsletter has been created in Microsoft Word 2007 by Charlotte Bishop and distributed in pdf format to GRSG members