Mars Lander Talk Cancelled

Just before going to press we learned that Prof Colin Pillinger's talk 'A Lander for Mars' has had to be cancelled. Prof Pillinger, who is involved in the Mars Lander project, has been called to attend a meting of the European Space Agency. The invitation to the talk was extended to Section members by the Channel Islands Group of Professional Engineers. The group has arranged lectures on other interesting topics for later in the year; 'Mary Rose: Engineering the Recovery' on 26 September, 'The Breitling Orbiter' on 24 October and 'The London Eye (Millennium Wheel)' on 28 November. Any member wishing to go along to one of the talks should contact David Le Conte on 264847.

Telescope Instruction

We have had the new telescope equipment installed for over a year now but only a handful of members have got to grips with how to operate it. The computerised controls seem daunting but, once familiar with them, actually make observing easier. If you would like to learn how to operate the new equipment come along on Tuesday, 23rd May, for a full explanation and hands-on experience.

Get Well Soon

Lawrence Guilbert, stalwart Section member despite his years, is convalescing in the King Edward VII hospital. We wish him a speedy recovery and look forward to seeing him back occupying his usual chair at the observatory before too long.

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Sagittarius

The Newsletter of the Astronomy Section of La Société Guernesiaise

April - June 2001

Forthcoming events

A Lander for Mars
Talk by Prof Colin Pillinger
Wednesday, 25th April
8.30 pm at the
Duke of Richmond Hotel
by invitation of the Channel Islands Group of Professional Engineers.

Telescope Instruction
Tuesday, 23rd May
8 pm at the Observatory

Tuesday, 19th June
Event to be announced
8 pm at the Observatory

Observatory Clear-up Day
Saturday, 21st July
9 am onwards
at the Observatory

In addition, the Section meets at the Observatory every Tuesday evening, and Friday if clear for observing.

In this issue

Annual Business Meeting
Astronomical Adventures
Polar Caps on Mars

Inside

Annual Business Meeting	2
National Science Week	4
Visits to the Observatory	5
Astronomical Adventures	6
Zodiac Wordsearch	7
Polar Caps on Mars	8
Astronomy References	9

Centre inserts

Programme for 2001
Star chart
Moon phases
Sunset and sunrise times

Annual Business Meeting

Minutes of the Meeting held at the Observatory Tuesday, 6th February 2001

Present: David Le Conte, Geoff Falla, Lawrence Guilbert, Daniel Huddle, Roger Chandler, Jessica Harris, Peter Langford, Frank Dowding, Debby Quertier, Andy Short, Julie Coquelin and Cathy White.

Jessica Harris was elected chairman of the meeting and there were no matters arising from the Minutes of the last Business Meeting.

1. Election of Officers
Officers were re-elected to their existing positions with Cathy and Julie being newly elected as Librarians. Daniel Cave was to be confirmed as Imaging Officer.

2. Treasurer's Report
The Treasurer reported healthy funds at the start of 2001. It was agreed to keep the subs at their present level but to possibly review them next year. We aim to break even on the magazine costs.

3. Star Naming
We'd received a letter concerning a petition to try to stop this practice. We've had a few enquiries about finding these 'stars' for people and we agreed that this was something that we did not wish to get involved with or waste any time on. The Royal Astronomy Society press release will be displayed prominently on our notice board.

4. Fund Raising
We decided we would make our sign charging £1 for visitors a little more obvious – we had not always been collecting the monies. We talked about fund raising in general and about having a stand at the Harbour Carnival again and Floral Guernsey and the Shows. It was agreed to spend up to £150 on goods to sell.
It was suggested that we enter the man-powered flight contest at the Harbour Carnival. (At this point some members turned white with shock).

5. Viewing Programme
The options for this year's viewing programme were discussed and it was suggested that we include an evening of looking at TV/Videos.

6. National Science Week
National Science Week runs from 16-25th March this year. We agreed to hold an open evening at the Observatory on Tuesday the 20th, although there would be no moon, there still was plenty to see. Publicity will be arranged for this. Our Messier Marathon is planned this year for Saturday 24th into the 25th, which will round off National Science Week.

7. Sciba
With the involvement of the BAA, astronomy is taken to the public, informal talks in pubs and the like. It was agreed that this was a good idea but needed more thought. Various venues were discussed. School visits were discussed and the help we are able to give with the curriculum. It was generally felt that we should go out to the people more rather than visits to the Observatory all the time.
Observing was discussed again and we agreed that we should have a proper programme to follow rather than the sometimes haphazard viewing we've tended to do in the past. Joining one of the specialist Sections of the BAA was talked about and members were asked to give thought to which section we should become involved with.

8. Trees
The trees are starting to become a problem on the southern boundary. An approach will be made to the owner once we've ascertained who they are. It would be a shame to lose our southern view.

9.Observatory Land Management
It was agreed to keep the area tidy and cut the sloes back. The grassed area was to be kept level and a reasonable 'screen' of hedges to keep the Observatory protected. Additional lights were to be put in the car park and the removal of the existing light, which is too bright. Frank Dowding would arrange for the work to be done. We talked about flattening/levelling the car park and who was responsible for this and the windows, which needed work. We decided to check on our lease who was responsible for what. The main door also needs attention.

10. Telescope Maintenance
The winch on the Meade building needs checking. The C14 should be looked at and put to use, there is problem with the fork which needs sorting out. Once this is fixed the C14 can be set up on a tripod. The Meade is performing well but the balancing needs watching. The finderscope on the Meade tends to get knocked when the cover is removed/replaced and it was suggested we put a frame around it. We may not need to use the cover in the summer months. David Le Conte has prepared an instruction manual for the Meade. The Takahashi needs further alignment. With members moving off the Island it was noted that we do not have as much telescope expertise as we used to have.

11. Building Extension
This was discussed as we do need more space. The main cost would be the materials. Andy Short was willing to sketch plans. Ideas were needed and this is something we can discuss later. The lining on the runners on the roof need attention and can be looked at in the summer.

There was no further business and the meeting closed at 10.35pm.

Debby Quertier

National Science Week

***Debby Quertier** reports on the Section's Open Evening and Recent News*

The Observatory was opened to the public as planned on Tuesday 20th March to coincide with National Science Week. We had obtained some good publicity with a piece in the press and interviews on both Radio Guernsey and Island FM. Unfortunately the weather worsened that day and by evening there was no chance of seeing anything. However a few people did come along and we were able to at least show them the telescopes and answer various questions so it wasn't a complete disaster.

Did you know you could buy your loved one a plot of land on Mars or Venus for a Valentine gift?

I have spoken quite a bit this year on Radio Guernsey. I have been on the magazine programme twice recently. The first was timed for Valentine's Day, when the topic was the people who are selling plots of land on Mars and Venus. Both Dan Courtney and I had found internet sites about these 'sales' and we had a light-hearted chat about it. Did you know you could buy your loved one a plot of land on Mars or Venus for a Valentine gift? And it will only cost you £20! The drawback is that if life is found on Mars or Venus and the little green man doesn't want you there, then he can kick you off - after all he was there first. I think you would be better spending your £20 on a nice bottle of champagne. The second time on the magazine programme was to plug our open evening and talk about astronomy in general. I have had some good feedback from people who have heard the various programmes/items and there is certainly a fair bit of interest in astronomy in the Island. I have also spoken about Mir's demise and Pluto's planetary status.

yet again the Messier Marathon was abandoned

Our Messier Marathon was planned for Saturday the 24th March. The night would have been perfect as it was the day before New Moon. We had found last year that the Moon, however small, made a huge difference to what we could see. You start the marathon in the western part of the sky when it is not completely dark, so even a small sliver of Moon is a nuisance. Saturday the 24th was the best night of 2001 to try the marathon but yet again it had to be cancelled due to bad weather. We rescheduled to try again on the 31st March and, despite the day being nice and clear, by night-time the clouds had gathered and yet again the Messier Marathon was abandoned. There are no further suitable nights left this year as the Moon grows fuller on the remaining available days - so it's try again next year folks!

As mentioned in the minutes of our Business Meeting, we are thinking about joining one of the Specialist Sections of the BAA and also having a better thought out viewing programme. Anyone who has any suggestions or has things they'd love to see in a telescope please let us know. One highlight last year was seeing Pluto for the first time. Mars will become visible in early June and be quite favourable then. The Lyrids meteor shower will peak on the 22nd/23rd April when there may 15 or so per hour.

Any suggestions will be most welcome.

Debby Quertier

Visits to the Observatory

Tuesday 13th February

We were visited by St Saviours Girl Guides with their leader Anne Dorey and her helpers, the weather was perfect and we enjoyed a star-filled sky. We started the evening by showing the girls around the sky and pointing out various prominent constellations and interesting objects. As there were about forty girls they were then split into two groups. One group were taken into the meeting room and given a talk while the other went into the Observatory and were shown the telescope in action. Then the two groups swapped over. The evening ended by general observing through both the 16" Meade and the 11" Celestron. Both Saturn and Jupiter were on show that night, which by the comments from the girls when down very well when seen through one or other of the telescopes.

Friday 9th March

The second lot of visitors were not quite so lucky with the weather. They were the 2nd Guernsey Scout Group with their leader Bobby Jennings and helpers. Unfortunately, the weather was so bad we could not do any observing at all. Nevertheless, despite the rain and cold, the boys did not seem too disappointed. The Scouts were about 35 in number and varied in ages from about 11 up to 15. Once again they were shown the telescopes and given a talk. We had a question and answer session after each talk, and the questions asked by the boys were well thought out. Aliens, wormholes and space travel were the most popular subjects for questions. I am sure a good time was had by all, and when it was time to leave many boys asked if they could come back on a clear night.

Jessica Harris

Astronomical Adventures

*Recently-joined member **Susan Chamberlain** describes the experience that turned her on to astronomy*

You never know how your summer holiday will turn out do you? In July 1996 I found myself on a plane to Arizona looking forward to some stargazing. Not having looked through a telescope before, I remembered back to days standing out in the Sahara desert gazing up at a full 180° dazzling display of twinkling jewels.

On arrival at a remote ranch near Flagstaff I was introduced to Bob Woolley, my guide for the following week on what turned out to be an astounding astronomical and geological adventure. The days were hot and dusty, travelling back 290 million years to imagine sands entering the Sedona area which then formed the Esplanade Sandstone. Bob gave a dynamic account of how an irregular shaped nickel-iron fragment from the core of an asteroid, that itself was smashed to splinters by an even earlier collision in the asteroid belt millions of years ago, entered our atmosphere at about 10 miles per second. This meteorite impacted the ground at an impressive site we now call Meteor Crater.

Night-time afforded a refreshingly cool environment to once again gaze out into the cosmos. Bob had driven thousands of miles to find a suitable dark site. Here he had installed his 36 inch reflector telescope, complete with 15 foot step-ladder. The scene was set for some excellent seeing conditions.

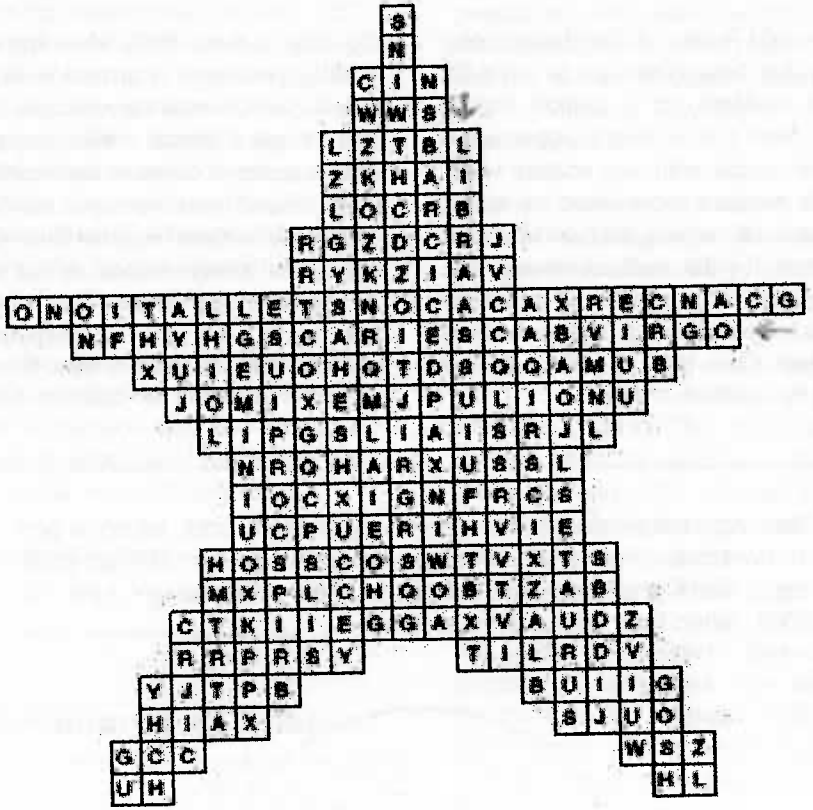
My turn came to ascend the ladder. Bob asked me how many galaxies I could see. Nervously I reported that I had counted 12 so far. "Keep counting" came the reply. I counted 20 galaxies before descending the ladder almost disbelieving what I had just seen. That was my introduction to deep sky observing! When you think that in the constellation Coma Berenices there is an immense collection of 10,000 galaxies known as the great Coma Cluster, it is a humbling experience. M87 is a giant elliptical galaxy in the Virgo Cluster 50 million light years away with other galaxies in the cluster moving around at up to 1,500 km per second. Awesome!

Needless to say this experience whetted my appetite for stargazing. Living in Guernsey I am delighted to have joined the Astronomy Section of La Société Guernesiaise. The warm welcome of existing members means I am once again able to look out into our universe and learn a little more of our jewelled neighbours.

You can read more about Bob Woolley's Astronomical Adventures in the March 2001 issue of Astronomy, or visit *www.AstronomicalAdventures.com,* or think about going there yourself!

Susan Chamberlain

ZODIAC WORDSEARCH



Can you find 20 words related to the zodiac?
Words can be horizontal, vertical diagonal or backwards.

See page 11 for solution

Puzzle by David Le Conte

Polar Caps on Mars

***Frank Dowding** investigates why one Martian polar cap is water and the other carbon dioxide*

A rather odd feature of the Martian polar caps is that the northern cap is water ice and the southern cap is carbon dioxide ice. At least that is how it appears. To be more precise both caps contain water ice. The northern cap is water ice with a thin layer of carbon dioxide which is only there for the northern winter. The southern cap is a mixture of water ice and carbon dioxide ice all year round with again a thin layer of carbon dioxide during the southern winter.

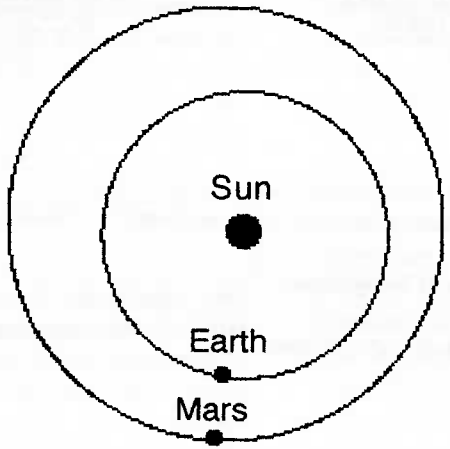
So why is this? Well, Mars has a tilt, just like the Earth, of around 24 degrees, which gives it seasonal changes. It also has a slight elliptical orbit which means it is sometimes closer to the Sun than at other times. Mars travels at its slowest when it is furthest from the Sun. At that time it is always winter in the south. When closest to the Sun, it is winter in the north, but for a comparatively shorter time, as Mars is then travelling faster. The result is that the Martian southern polar cap is colder for longer than the northern cap.

It is during the colder southern winter, when the temperature is around -150°C, that a process called clathrate occurs, in which water ice crystals physically contain carbon dioxide. This state changes little during the warmer months. Just like the northern cap the southern cap loses its thin layer of carbon dioxide during the warmer season, but it retains the carbon dioxide trapped in the water ice crystals.

So, Mars has carbon dioxide ice at the southern polar cap because it is colder than the northern cap. Had the northern cap been equally cold for as long then it too would have carbon dioxide.

Frank Dowding

The chart below shows the eccentricity of Mars' orbit, which is part of the explanation for the difference between the two Martian polar caps. Mars and Earth are shown in their positions on June 13, 2001, when they will be at opposition.



Astronomy and Space - References for further reading

compiled by Geoff Falla

Life from Space? - The Martian Meteorite. Examination of the meteorite from Mars ALH 84001, and the theory of Panspermia - that life may have been brought to Earth by meteorites or by cometary material. *The Planetary Report, November/December 2000*

SETI @ Home. The project sponsored by the Planetary Society to search for extraterrestrial intelligence. Currently involving over 2 million people, and using data from the Arecibo radio telescope, the project plans to add a facility in the Southern Hemisphere. *The Planetary Report, November/ December 2000*

The Structure of Spiral Galaxies. Using infrared observations to penetrate the dusty material in galaxies, revealing the hidden structure within. *Sky and Telescope, January 2001*

Double Stars. The observation of double stars is often a satisfying challenge, and little affected by light pollution. A selection of some bright and colourful doubles. *Sky and Telescope, January 2001*

Magnetic Monster Stars. The existence of 'magnetars' first discovered in 1979, with magnetic fields over 1,000 times more powerful than more normal neutron stars. *Astronomy Now, January 2001*

Asteroids. A set of articles. The early discoveries in the main asteroid belt between Mars and Jupiter. Close encounter - Eros and its study by the NEAR Shoemaker spacecraft, and The Outer Limits - the Kuiper Belt of icy asteroid-like objects beyond the orbit of Neptune. *Astronomy Now, January 2001*

The International Space Station. The development of the I.S.S. now being assembled in orbit, having received its first crew in November 2000. *Astronomy and Space, January 2001*

Cosmic Rays. High energy particles produced in stars, the use of cloud chambers to study the effects of particle collisions now replaced by the use of particle accelerators, and the current search for the source of the highest energy cosmic rays. *Astronomy, January 2001*

Military Magic - The spin-off for Astronomy. Technology developed for military use now used for astronomy, including the German V2 rockets leading to the beginnings of space research, radar now used in radio astronomy, and the introduction of adaptive optics. *Astronomy, January 2001*

Mars - Evidence of Lake Beds. New photographic evidence for sedimentary layering on Mars. *Astronomy and Space, February 2001*

Solar Science. Current knowledge of the Sun. Solar eclipse science has allowed study of the corona, leading to a better understanding of the Sun's energy, the solar wind, and information that can be applied to the study of other stars. *Sky and Telescope, February 2001*

Mars Express Project. Details of the European Space Agency project to send a spacecraft to Mars in 2003, including a lander 'Beagle 2' devised by Professor Colin Pillinger, Open University Professor of Planetary Sciences. *Astronomy and Space, Feb. 2001; The Planetary Report , March 2001*

Comets and Asteroids. The distinction between comets and asteroids has become less clear, with some sharing similar behaviour. *The Planetary Report March 2001*

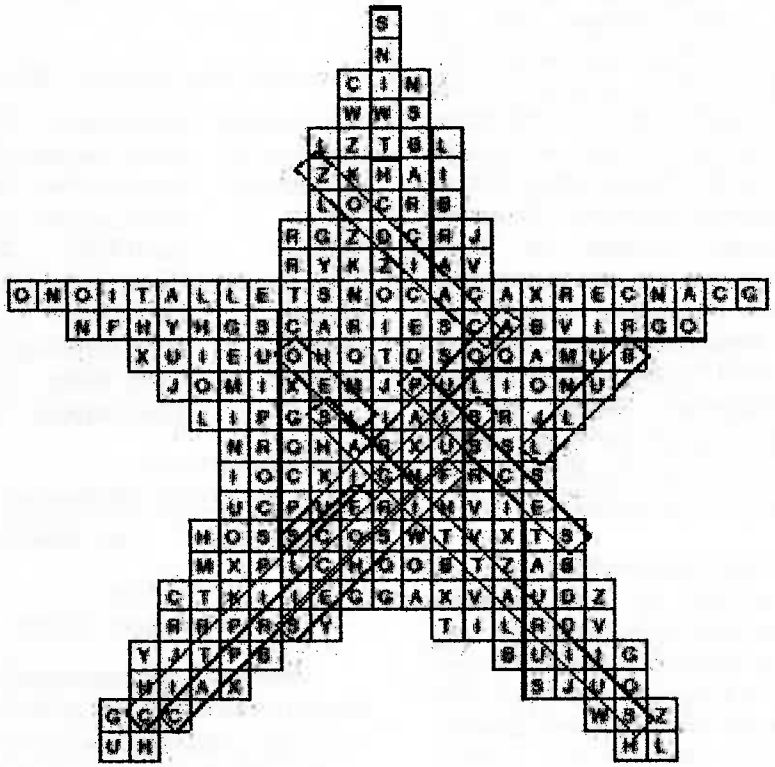
Black Holes - A cosmological challenge. Recent observations have revealed that a black hole may exist at the centre of every galaxy. How they formed, and correlations already discovered could require a major revision of cosmological theory. *Astronomy, February 2001*

Hidden Dimensions. Physicists are starting to accept the idea that there are hidden spatial dimensions. The evidence for parallel universes or 'hyperspace' may be confirmed by particle accelerator experiments. *Astronomy Now, March 2001*

Space Telescope - The Next Generation. Astronomers are planning a new space telescope. What may be found by looking even further back towards the beginning of the universe. *Astronomy, March 2001*

Geoff Falla

SOLUTION TO ZODIAC WORDSEARCH



ZODIAC
ECLIPTIC
CONSTELLATION
ARIES
TAURUS
GEMINI
CANCER
LEO
VIRGO
LIBRA
SCORPIUS
SAGITTARIUS
CAPRICORNUS
AQUARIUS
PISCES
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TWINS
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