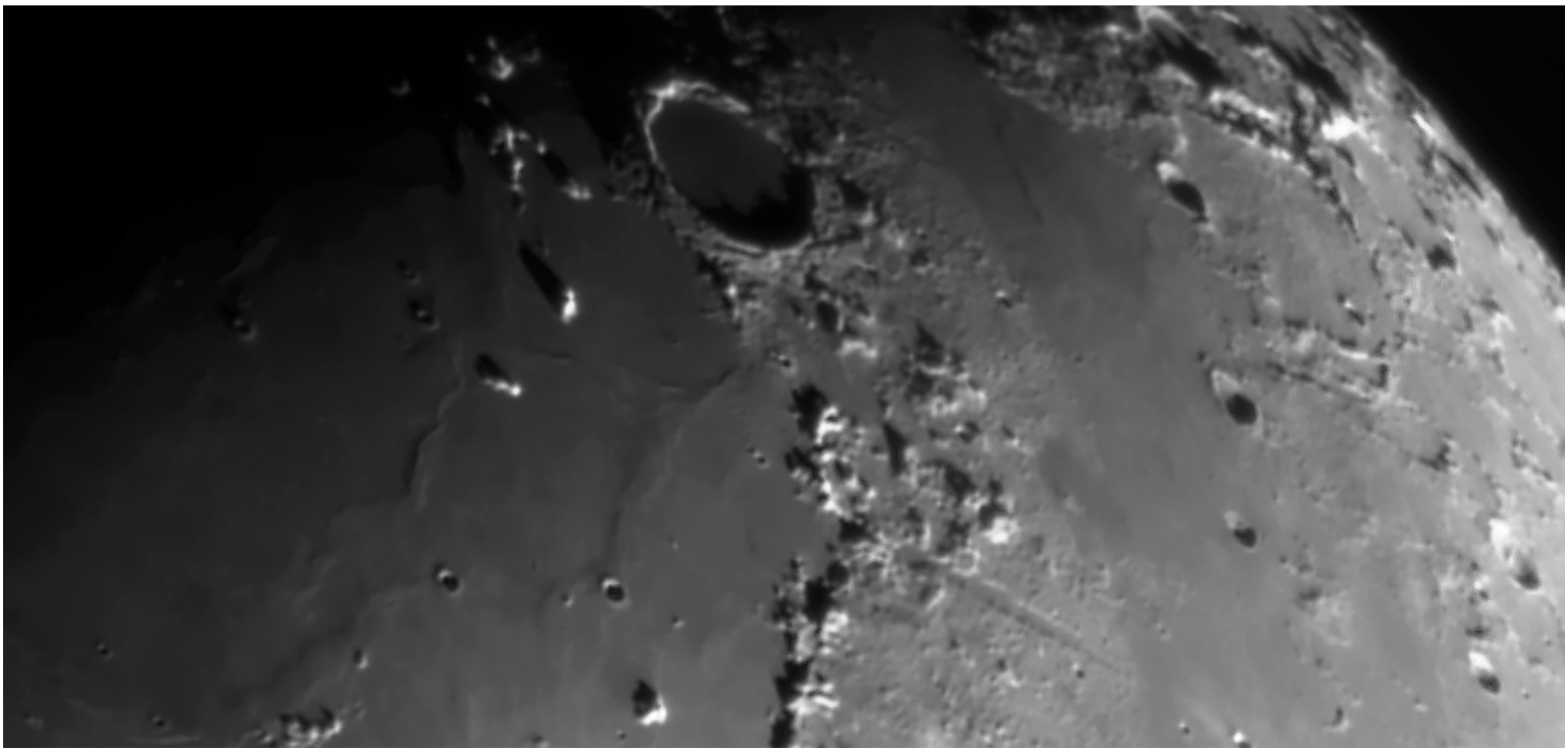
WAS NEWS

Monthly Newsletter of the **W**orthing **A**stronomical **S**ociety
www.was.org.uk

Number 216

February 2008



Plato Mosaic

Trevor Little

Taken on the16th January. Comprising of 3 frames stitched in Photoshop. Equipment used - C11 at F/10 50% reduction in size.

ALMANAC

All times U.T.

February/March

LUNAR

February	Date	Time	Rise	Set
New moon	7th	03.44	08.01	18.53
Perigee	14th	00.56	370,256km	
First Quarter	14th	03.33	09.40	02.03
Full Moon	21st	03.30	18.05	07.09
Apogee	28th	01.25	404,403km	
Last Quarter	29th	02.18	02.41	09.23
March				
New moon	7th	17.14	06.20	17.52
Perigee	10th	21.31	366,323km	
First Quarter	14th	10.46	09.11	02.33
Full Moon	21st	18.40	18.19	05.39
Apogee	26th	20.07	405,058km	
Last Quarter	29th	21.47	02.22	08.57

EARTH

February	Sunrise	Sunset
7th	07.30	17.00
14th	07.17	17.12
21st	07.04	17.25
29th	06.47	17.39
March		
7th	06.32	17.52
14th	06.16	18.04
21st	06.00	18.16
29th	05.42	18.29

PLANETS

(As at February 29th)

	Constellation	Rises	Sets	Mag.
Mercury	Capricornus	05.53	15.08	+0.2
Unsuitably placed				
Venus	Capricornus	06.01	15.12	-3.9
Morning object in the south-east				
Mars	Taurus	10.47	03.57	+0.2
Fading quickly				
Jupiter	Sagittarius	04.33	12.37	-2.0
Morning object in the south-east				
Saturn	Leo	16.53	06.59	+0.2
Visible most of the night				
Uranus	Aquarius	07.08	18.21	+5.9
Unsuitably placed				
Neptune	Capricornus	06.17	15.57	+8.0
Unsuitably placed				
Pluto	Sagittarius	02.57	12.05	+14.0
Morning object				

PHENOMENA

Day	Hour	February
19th	03	Mercury at stationary point
21st	03	Total eclipse of moon
21st	10	Saturn 3°N. of moon
24th	10	Saturn at opposition
26th	18	Venus 1° S. of Mercury

March		
3rd	02	Jupiter 4°N. of moon
3rd	11	Mercury at greatest elongation W.27°
5th	14	Mercury 0°.2N. of moon
5th	19	Venus 0°.2N. of moon
8th	20	Uranus in conjunction
15th	03	Mars 2°S. of moon
19th	14	Saturn 2°N. of moon
24th	13	Venus 1°n. of Mercury
30th	18	Jupiter 3°n. of moon

Minima of Algol

February 22nd 06.00 25th 02.48 27th 23.42

March 1st 20.30 16th 04.36 19th 01.24 21st 22.12 24th 19.06

Lunar Occultation's

Times as at NEW W.A.S. Observatory site

Date	U.T.	S.A.O. No	Mag	Phase
February	**h. m. s.**			
22nd	21.27.00	138298	4.3	Reapp
24th	01.45.23	138801	8.1	Reapp
29th	04.41.52	184481	2.8	Diss
29th	05.49.20	184481	2.8	Reapp
March				
9th	18.54.41	109530	8.2	Diss
11th	18.31.18	75558	7.4	Diss
11th	19.39.53	75574	8.5	Diss
12th	19.00.17	76206	6.8	Diss
12th	20.37.23	76272	6.9	Diss
12th	20.56.01	76286	6.8	Diss
12th	22.04.48	76319	8.4	Diss
13th	20.51.34	76841	8.6	Diss
13th	22.56.48	76880	6.6	Diss
14th	19.04.27	77724	7.3	Diss
14th	19.40.49	77753	8.6	Diss
14th	20.39.51	77798	8.5	Diss
14th	20.39.59	77840	7.6	Diss
14th	21.07.13	77819	6.8	Diss
14th	21.49.50	77837	6.1	Diss
15th	19.01.01	78929	6.1	Diss
15th	19.26.56	78947	6.3	Diss
15th	20.58.35	78998	8.1	Diss
15th	21.56.24	79026	8.6	Diss
16th	22.00.13	79895	9.0	Diss
17th	22.05.40	98265	6.6	Diss
18th	20.46.01	98765	8.8	Diss
19th	21.23.19	118389	7.9	Diss

The list above is a selection of the more easily observed evening events, (about 25 % of the list available,) there are more in the wee small hours for the insomniacs amongst us

Dave Wells

Editors Note

Well, if you thought your life was dull worry no longer. With the smorgasbord of excursions on offer in the pages of WASNews you can be assured of a fun packed and intellectually simulating couple of months.

All that coupled with the normal high standard of articles and reviews makes this possible the second best issue this year!!

Rob

Dates for your Diary

Crescent Moon Club

Graham Boots & Glen Thomas

Please put the following dates in your diary if you would like to see very young crescent Moons.

For the crescent Moons that take place in the evening we meet in the car park at the top of High Salvington that Honeysuckle Lane leads into. This site has a very unobstructed western horizon.

Suitable dates are Saturday the 8th March and Wednesday the 4th June, from sunset onwards. Both cases have Moons less than 25h old. Additionally, Wednesday the July 2nd has very old Moon, just 22h short of New during the small hours. The Moon rises on this date about 2.17 UT.

Details	Sunset	Moonset	Phase	Age at Sunset
Dusk 8 March	17.55	19.19	1.5%	24.40h
Dusk 4 June	20.09	21.44	1.8%	24.45h
Dawn 2 July	03.53	02.27	1.4%	-22.26h

Let us hope for clear skies.

Thanks goes to Glen Thomas for selecting the above dates.

Further details available from either Glen of Graham

Clanfield Observatory Complex Outing

Graham Boots

On Saturday afternoon 23rd February next I am organising an outing to the Clanfield Observatory complex. This is the home of the Hampshire Astronomical Group. They have five observatories, the largest being a 24" Newtonian reflector. Hydrogen Alpha solar observing will be available during the afternoon. Light refreshments will be included. The distance from Worthing is 38 miles and the traveling time is 51 minutes. The post code is PO8 0QR plus 500 metres further up the hill on the right. The start of the guided tour will be 2.00pm and members and friends can leave when they wish as I am asking you to use your own cars and operate car sharing. If the sky is clear you may wish to stay for evening observing and a fish and chip supper can be ordered which will be delivered to the complex.

Tickets and road maps are available from Graham Boots Tel., 01903 505346 at £3 each which will be donated to the Hampshire Astronomical Group funds less £1 for our own society.

Isle of Wight Star Party ~ 6th – 10th March, 2008

Come and Enjoy Some of the Darkest Skies in the South The setting is a holiday centre on the south coast of the Isle of Wight, with breathtaking, almost 180 degree, southerly views across the Channel. The provisional program includes trade stands, astrojumble, raffle, speakers and a visit to The Needles New Battery (Ex-Rocket testing site).

Day Rate (if not staying on site) £3 per person per day.
Small tent with one person £8 per night.
Large tent with up to two people £16 per night.
Caravan with up to two people £16 per night.
Electric Hook-up - £2.50 extra per night
For all tents and caravans Extra adults £6 per night, Children £2.50 per night
2/3/4 bed Chalet £18 per person per night. (If you can't fill a chalet, you may have to share it with other Star Party delegates)

Special Ferry fares with Wightlink: Car and up to 6 people - £45.00.
Car and caravan (up to 13m) and up to 6 people £75.00.

For more details please visit the website www.iowstarparty.org, or email info@iowstarparty.org

Meet Sir Patrick Moore At His Home

Graham Boots

For those members who have not yet had the opportunity to meet Patrick I am organising another visit. This will be for up to twelve members to arrive at 8.00 pm on Saturday the 15th March next. I suggest leaving Worthing around 7.00 pm. It takes about 40 minutes and is 26 miles from Worthing. For those of you with satellite navigation systems the post code is PO20 9AB. I encourage members to operate car sharing.

I will show you the 15" Newtonian in his largest observatory and if clear the opportunity to look at celestial objects though it. There is no charge but as well as your company he appreciates medium white wine, not French or German. We will meet him in his fascinating study, see his dining room where there are many celestial globes. We will see his lounge where stands his very first telescope and xylophone.

There is a nearby toilet on the ground floor. Although Patrick will not expect you to leave too early I suggest drifting away around 10.00 to 10.30 pm. It is okay to call him just Patrick.

If you wish to go please let me know. Graham Boots 01903 505346 and I will give you details on how to get to his home in Selsey.

Thanks goes to Trevor Little for approaching Patrick about these visits and this led to the use of the 15" by our members. Thank you very much Trevor on behalf of WAS.

Reports

Solar Section Report – January 2008

Brian Halls - Solar Section Director

Sunspot activity remained low this month - many days being spotless.

The highlight of the month however was the appearance of the first sunspot group (AR 0981) of the new sunspot cycle on the 4th at N30 ^{0} L246 ^{0} comprising a number of small and faint spots. Brian States observed this group only on the 4th when it comprised four small spots. This group lasted only a few days before disappearing around the 7th.

Following the pattern at the start of other cycles, it can be assumed that the northern solar hemisphere will remain fairly inactive - sunspots of the old cycle possibly even occurring close to the solar equator. However sunspot activity in the north has almost been devoid during the last 18 months, so it is just possible that high latitude sunspots will slowly become more plentiful.

Otherwise, sunspot activity was confined to the southern equatorial areas. We can perhaps assume again that as the northern sunspots become more plentiful, southern spots will decrease until we have a similar situation as that in the north over the last year and a half.

Solar reports were received from, Graham Boots, Brian States and the Director.

R = 1.6 (Ri = 3.4)

MDF = 0.16

Notices

Telephone Alert List

Brian Halls

The Telephone Alert List is being updated, so anyone who wishes to be 'phoned when something of interest is happening in the sky - aurora, appearance of new comet, nova etc.- please let Brian Halls know, so your name can be added to the list.

All that is needed is a contact number (land line and/or mobile), and a time for the latest call you would like - unless you don't mind what time of night or wee hours of the morning you like to be alerted.

Phone Brian on 521205 to add your name and number or email solar_section@was.org.uk

Our Web Site

Graham Boots

Ryan Thomas our web master is current revamping the WAS web site. The new site will be in a totally different league to what we have now. I would ask members to support Ryan by sending him your images and any other contributions you feel appropriate.

E-mail Address - r.thomas@ntlworld.com

WAS Ad

Sussex Astronomy Centre

For all your astronomy needs
Meade, Celestron, SkyWatcher, Tal Telescopes
Large range of accessories, software, books etc
16 Mulberry Lane
Goring by sea
Worthing, West Sussex.
Telephone 01903-247317
Email worthingastronomy@tiscali.co.uk
Web Site. www.sussex-astronomy-centre.co.uk
Ask for Paul Farmer (Club Member)

What's on the Box

Sunday 27 February 2008

BBC FOUR

17.30 – 18.35: **The Hubble Telescope**
Documentary about the work of the world's most famous space telescope.

WASNews News

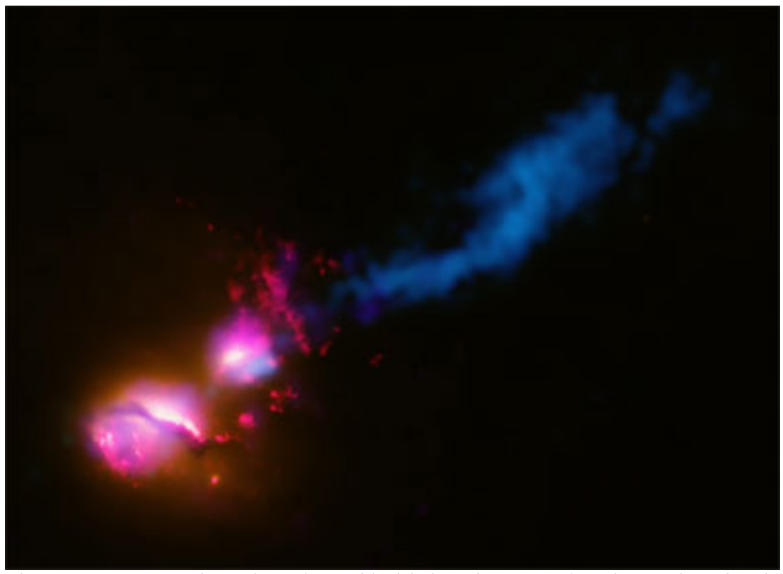
'Death Star' galaxy black hole fires at neighbour

NASA News Release

WASHINGTON - A powerful jet from a super massive black hole is blasting a nearby galaxy, according to new findings from NASA observatories. This never-before witnessed galactic violence may have a profound effect on planets in the jet's path and trigger a burst of star formation in its destructive wake.

Known as 3C321, the system contains two galaxies in orbit around each other. Data from NASA's Chandra X-ray Observatory show both galaxies contain super massive black holes at their centers, but the larger galaxy has a jet emanating from the vicinity of its black hole. The smaller galaxy apparently has swung into the path of this jet.

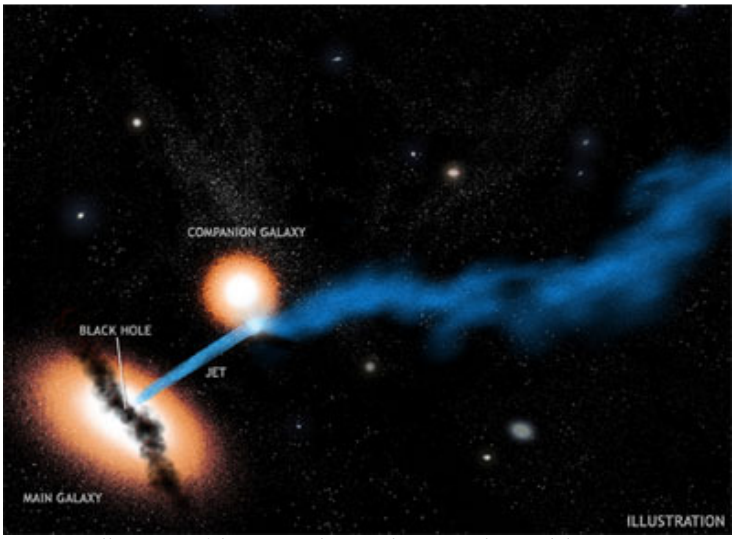
This "death star" galaxy was discovered through the combined efforts of both space and ground-based telescopes. NASA's Chandra X-ray Observatory, Hubble Space Telescope, and Spitzer Space Telescope were part of the effort. The Very Large Array telescope, Socorro, N.M., and the Multi-Element Radio Linked Interferometer Network (MERLIN) telescopes in the United Kingdom also were needed for the finding.



This composite image shows the jet from a black hole at the center of a galaxy striking the edge of another galaxy, the first time such an interaction has been found. X-rays from Chandra (colored purple), optical and ultraviolet (UV) data from Hubble (red and orange), and radio emission from the Very Large Array (VLA) and MERLIN (blue) show how the jet from the main galaxy on the lower left is striking its companion galaxy to the upper right. Credit: X-ray: NASA/CXC/CfA/D.Evans et al.; Optical/UV: NASA/STScI; Radio: NSF/VLA/CfA/D.Evans et al., STFC/JBO/MERLIN

"We've seen many jets produced by black holes, but this is the first time we've seen one punch into another galaxy like we're seeing here," said Dan Evans, a scientist at the Harvard-Smithsonian Center for Astrophysics and leader of the study. "This jet could be causing all sorts of problems for the smaller galaxy it is pummeling."

Jets from super massive black holes produce high amounts of radiation, especially high-energy X-rays and gamma-rays, which can be lethal in large quantities. The combined effects of this radiation and particles traveling at almost the speed of light could severely damage the atmospheres of planets lying in the path of the jet. For example, protective layers of ozone in the upper atmosphere of planets could be destroyed.



An artist's illustration of the system, showing the main galaxy and the companion galaxy. A jet of particles generated by a supermassive black hole at the center of the main galaxy is striking the companion galaxy. The jet is disrupted and deflected by this impact. The key features of this system are labeled in the final view. Credit: NASA/CXC/M. Weiss

Jets produced by super massive black holes transport enormous amounts of energy far from black holes and enable them to affect matter on scales vastly larger than the size of the black hole. Learning more about jets is a key goal for astrophysical research.

"We see jets all over the universe, but we're still struggling to understand some of their basic properties," said co-investigator Martin Hardcastle of the University of Hertfordshire in the United Kingdom. "This system of 3C321 gives us a chance to learn how they're affected when they slam into something like a galaxy and what they do after that."

The effect of the jet on the companion galaxy is likely to be substantial, because the galaxies in 3C321 are extremely close at a distance of only about 20,000 light years apart. They lie approximately the same distance as Earth is from the center of the Milky Way galaxy.

A bright spot in the Very Large Array and MERLIN images shows where the jet has struck the side of the galaxy, dissipating some of the jet's energy. The collision disrupted and deflected the jet.

Another unique aspect of the discovery in 3C321 is how relatively short-lived this event is on a cosmic time scale. Features seen in the Very Large Array and Chandra images indicate that the jet began impacting the galaxy about one million years ago, a small fraction of the system's lifetime. This means such an alignment is quite rare in the nearby universe, making 3C321 an important opportunity to study such a phenomenon.

It is possible the event is not all bad news for the galaxy being struck by the jet. The massive influx of energy and radiation from the jet could induce the formation of large numbers of stars and planets after its initial wake of destruction is complete.

The results from Evans and his colleagues will appear in The Astrophysical Journal. NASA's Marshall Space Flight Center, Huntsville, Ala., manages the Chandra program for the agency's Science Mission Directorate. The Smithsonian Astrophysical Observatory controls science and flight operations from the Chandra X-ray Center in Cambridge, Mass.

NASA sends spacecraft on mission to comet Hartley 2

NASA/JPL News Release

NASA has approved the retargeting of the Epoxi mission for a flyby of comet Hartley 2 on Oct. 11, 2010. Hartley 2 was chosen as Epoxi's destination after the initial target, comet Boethin, could not be found. Scientists theorize comet Boethin may have broken up into pieces too small for detection.

The Epoxi mission melds two compelling science investigations -- the Extrasolar Planet Observation and Characterization and the Deep Impact Extended Investigation. Both investigations will be performed using the Deep Impact spacecraft.

In addition to investigating comet Hartley 2, the spacecraft will point the larger of its two telescopes at nearby previously discovered extrasolar planetary systems in late January 2008. It will study the physical properties of giant planets and search for rings, moons and planets as small as three Earth masses. It also will look at Earth as though it were an extrasolar planet to provide data that could become the standard for characterizing these types of planets.

"The search for exosolar planetary systems is one of the most intriguing explorations of our time," said Drake Deming, Epoxi deputy principal investigator at NASA's Goddard Space Flight Center, Greenbelt, Md. "With Epoxi we have the potential to discover new worlds and even analyze the light they emit to perhaps discover what atmospheres they possess."

The mission's closest approach to the small half-mile-wide comet will be about nearly a thousand kilometers (620 miles). The spacecraft will employ the same suite of two science instruments the Deep Impact spacecraft used during its prime mission to guide an impactor into comet Tempel 1 in July 2005.

If Epoxi's observations of Hartley 2 show it is similar to one of the other comets that have been observed, this new class of comets will be defined for the first time. If the comet displays different characteristics, it would deepen the mystery of cometary diversity.

"When comet Boethin could not be located, we went to our backup, which is every bit as interesting but about two years farther down the road," said Tom Duxbury, Epoxi project manager at NASA's Jet Propulsion Laboratory in Pasadena, Calif.

Mission controllers at JPL began directing Epoxi towards Hartley 2 on Nov. 1. They commanded the spacecraft to perform a three-minute rocket burn that changed the spacecraft's velocity. Epoxi's new trajectory sets the stage for three Earth flybys, the first on Dec. 31, 2007. This places the spacecraft into an orbital "holding pattern" until it's time for the optimal encounter of comet Hartley 2 in 2010.

"Hartley 2 is scientifically just as interesting as comet Boethin because both have relatively small, active

nuclei," said Michael A'Hearn, principal investigator for Epoxi at the University of Maryland, College Park.

Epoxi's low mission cost of $40 million is achieved by taking advantage of the existing Deep Impact spacecraft.

Diary

18 February 2008 Astro Photography - Making Every Photon Count - Steve Richards

17 March 2008 Stars: Origin and Evolution – Dr Serena Viti Department of Physics and Astronomy University College London

21 April 2008 Member's Evening - Results of their work and short talks reflecting their own special interests in various branches of astronomy

19 May 2008 TBA

16 June2008 TBA

21July 2008 Pulsars - Everything you wanted to know but were afraid to ask - John Murrell Hampshire Astronomical Group

16 June 2008 Remote Observing - Lilian Hobbs Southampton Astronomical Society

18 August 2008 Summer Recess

15 September 2008 Dwarf Novae - Alan Smith Christ Hospital School

20 October 2008 TBA

17 November 2008 Galaxy Zoo Professor Robert Nichol Portsmouth University

*All meeting **(bold)** are held on the 3rd Monday of every month (except August when we normally have a bar-b-que at a member's home) at Emmanuel United Reform Church Hall on the corner of Heene Road and St., Michael's Road, Worthing beginning 7.30 p.m. Meetings include the latest astronomical work, reports and images by members. For further details contact us by Internet at www.was.org.uk or email chairman@was.org.uk*

President

Graham L. Boots

Tel / Fax: 01903 505346
Email: gboots@sky.com

Executive Committee

Chairman: Paul Farmer

Tel: 01903 247317 (daytime)
Email: worthingastronomy@tiscali.co.uk

Vice-Chairman: Alan Ollive

Tel: 01903 01903 262693 & 07786632788 (Mobile)
Email: a.ollive@ntlworld.com

Business Secretary: Brian Halls

Tel: 01903 521205
Email: solar_section@was.org.uk

Meeting Secretary: Graham Boots

Tel / Fax: 01903 505346
Email: gboots@sky.com

Membership Secretary: Peter Atkinson

Tel: 01903 690943
Email: pdatkinson@tesco.net

Treasurer: Vacant

Note to Contributors

Contributions & Correspondence for the **March** issue of WAS NEWS should be with the Editor by the **end of the first full week of that month**. All material for inclusion should be sent to the Editor.

Rob Davis
61 Stirling Court Road,
Burgess Hill
West Sussex
RH15 0PS
Tel: (01444) 239205
Email: wasnews@tiscali.co.uk or wasnews@was.org.uk