



WAS NEWS

Monthly Newsletter of the Worthing Astronomical Society

Official website: www.was.org.uk

Affiliated websites: www.observatory99.freeserve.co.uk



Number 146

October 2001

ALMANAC

All times U.T. for B.S.T. add one hour.

Oct./ Nov.

LUNAR

October	Date	Time	rise	set
Full Moon	2nd	13.49	18.04	05.30
Last Quarter	10th	04.20	22.32	14.37
New moon	16th	19.23	05.32	17.25
First Quarter	24th	02.58	14.30	22.45
November				
Full Moon	1st	05.41	17.02	06.47
Last Quarter	8th	12.21	22.54	13.58
New moon	15th	06.40	07.15	16.33
First Quarter	22nd	23.21	13.26	22.44
Full Moon	30th	20.49	15.53	06.59

EARTH

October	Sunrise	Sunset
2nd	06.03	17.36
10th	06.16	17.18
17th	06.28	17.03
24th	06.40	16.49
November		
1st	06.54	16.33
8th	07.06	16.21
15th	07.18	16.11
22nd	07.30	16.02
30th	07.42	15.55

PLANETS (as at October 24th.)

Constellation	Rises	Sets	Mag.
Mercury Virgo	05.04	16.27	+0.1
Morning object at it's most favourable apparition this year			
Venus Virgo	04.44	16.22	-3.9
Brilliant morning object in East			
Mars Sagittarius	13.51	21.51	0.0
Visible in the Southwest			
Jupiter Gemini	20.50	13.03	-2.4
Visible low in the East			
Saturn Taurus	18.47	10.37	-0.1
Morning object in the East			
Uranus Capricornus	14.38	00.12	+5.8
Favourable			
Neptune Capricornus	13.57	22.48	+7.9
Favourable			
Pluto Ophiuchus	09.44	19.42	+13.9
Unfavourable			

PHENOMENA

Day	Hour	October
10th	01	Jupiter 1° S. of moon
14th	02	Mercury in inferior conjunction
15th	05	Venus 4° S. of moon
16th	11	Mercury 6° S. of moon
18th	02	Neptune at stationary point
23rd	00	Mercury at stationary point

23rd	20	Mars 0.1° N. of moon
29th	17	Mercury at greatest elongation W. 19°
30th	19	Venus 0.6° S. of Mercury
30th	23	Uranus at stationary point
November		
2nd	16	Jupiter at stationary point
3rd	07	Venus 0.7° S. of Mercury
3rd	22	Saturn 0.6° S. of moon
6th	08	Jupiter 2° S. of moon
14th	03	Venus 3° S. of moon
14th	09	Mercury 2° S. of moon
21st	21	Mars 2° N. of moon

Minima of Algol

Oct.	5th 02.24	7th 23.12	10th 20.00	25th 04.00	28th 00.54
			30th 21.42		
Nov	2nd 18.30	17th 02.36	19th 23.24	22nd 20.12	

Lunar Occultations

Times as at W.A.S. Observatory

Date	U.T.	Z.C.No	Mag	Phase
Oct.	h. m. s.			
10th	04.22.18	1100	8.2	reapp
10th	23.31.13	1215	6.8	reapp
11th	03.17.55	1240	8.8	reapp
14th	04.51.11	1622	8.2	reapp
21st	17.21.58	2610	6.9	diss
22nd	18.22.22	2771	5.6	diss
23rd	17.12.46	2907	6.2	diss
25th	17.49.21	3164	4.5	diss
25th	21.45.12	3175	4.7	diss
28th	22.52.46	3536	4.4	diss
29th	01.21.17	5	4.6	diss
29th	18.48.32	87	8.5	diss
29th	22.12.23	96	8.9	diss
Nov				
1st	22.50.43	454	5.6	reapp
3rd	21.08 *	Saturn	-0.3	diss
3rd	22.02 *	Saturn	-0.3	reapp
4th	00.15.26	735	8.9	reapp
4th	05.04.20	752	4.6	reapp
4th	05.51.28	755	6.2	reapp
4th	21.52.27	876	7.7	reapp
5th	21.50.50	1036	6.5	reapp
6th	00.27.18	1050	5.7	reapp
9th	04.08.45	1462	7.3	reapp
11th	03.10.22	1702	4.0	reapp
12th	04.38.46	1823	8.1	reapp
19th	18.22.44	2861	5.6	diss

This is only about 15% of the predictions for the W.A.S. observatory.

* = Approximate time only

Z.C. No. 3164 = epsilon Capricorni

Planetary Report

- Mercury** ~ Is at inferior conjunction on Oct. 14th then moves rapidly westwards attaining greatest western elongation (19°) on the 29th it's best apparition this year, it brightens from Mag. +0.9 to -0.7
- Venus** ~ Brilliant morning object in the east, stays close to Mercury for an unusually long three weeks around the end of October / beginning November.
- Mars** ~ Evening object in the south west, has a close encounter with the moon on the evening of the 23rd Oct. when it appears to graze the unilluminated upper limb.
- Jupiter** ~ Brilliant object in the east rising earlier each day
- Saturn** ~ Technically a morning object is visible in the evening, on Nov. 3rd 21.08 it's occulted by the moon
- Uranus** ~ Will soon be lost in the evening twilight
- & Neptune**

Editors Note

Hello again all, Hope you're all prepared for the transformations afoot this month – a new Chairman, a new Secretary etc, how can you handle all this change. It seems the only constant is your friendly regular A4 sized WAS News...except, what's this? A new A3 format, I don't believe it!!!! Let me know what you think.

TTFN

Rob

Notices

From the Chairman...

Brian Halls

In his novel and film of the same name, Arthur C Clarke made some predictions for the year 2001. It was the year we finally became aware that we were not alone in the universe.

Naturally, this was a science writer's work of fiction but there is an increased awareness and interest in scientific circles on the subject of extra-terrestrial life.

Web sites that receive the most hits on the Internet after those with adult content are the web pages dedicated to UFO's, flying saucers, crop-circles, alien abduction and the rest. There are equally a large number of newsgroups also dedicated to this subject. Britain's own UFO magazine periodical has just gone from being a bi-

monthly publication to being published monthly, such is the demand and interest about the subject.

Though many of the above subjects may be considered rather – 'exotic', the interest in finding life "out there" is on everyone's mind, in part perhaps to the on going success of 'realistic' science-fiction programmes like the X-Files, but also as the debate on old Viking Mars mission experiment results have been positively re-assessed, and the belief that liquid water (and therefore a potential ingredient for life) was existent on Mars is considered very much as a fact.



Brian Halls & Friend

Later this month, the Federation of Astronomical Societies will be holding their annual convention on Saturday 13th October, at the Rutherford Appleton Laboratory near Didcot in Oxfordshire. The convention will have as its theme, **Life in our Universe** - speaking on this subject will be Professor Richard Dawkins, Professor Joseph Silk, Dr Barrie Jones and Dr Alan Penny.

If you are interested in going contact our Auditor, Doc Sutton who will supply you with further information –or visit www.fedastro.org.uk for more information. Tickets are £5 in advance or £6 on the door.

Astro-Art / Photo Competition

In January, our Society will have its annual New Year Social, and one of the 'events' being planned is to hold an astro-photography-art competition. So, if you feel you would like a go at this start snapping or checking through some of your old photo albums, or begin scribbling away.

The types of photography/art would not only include true astronomical views, but could also include pictures of moonrises sunrises or moonsets sunsets – views of astronomical objects or personalities!

The competition is primarily for fun but I am sure the Committee will arrange a small prize for the lucky winner.

If there is any other kind of event you would like to see take place at the Social Evening, please let me know. As usual, help with food and (non-alcoholic) drink would be much appreciated. All the food for the last Social was supplied by just one volunteer, (who had decided at the last minute to bring along some food) so if we could all bring some thing it would help the evening go with a swing.

Until the next issue, clear skies.

Annual Fees

The annual membership fee is now due. Please make your cheques payable to Worthing Astronomical Society for the appropriate sum.

Ordinary Membership £14.00

Family Membership £21.00

Junior Membership £ 6.00

Student membership (as defined in the constitution) is free.

Society Computer Systems & Other Instruments

Graham Boots

Recently, members Bob Turner, David Chilard and Doc Sutton donated computer systems that are now available for long-term loan to members free of charge. The details are as follows:

Computer 1:

- 486 model, 66 MHz processor (speed)
- 1 Gb hard drive (397 Mb used, 620 Mb free)
- 8.0 Mb RAM (memory)
- Windows '95
- Colour monitor (14")
- Keyboard & mouse included
- No sound card installed and there are no speakers
- Scanner can be attached but is not included with this system however there is a step down transformer for a Scanner
- Advise can be given if Internet facility is required
- A step down transformer for a Printer is included
- Programs installed: Red Shift 2 but the CD is necessary to run this programme, Microsoft Office '97 comprising of eight programmes & Corel 5 (a drawing package)

This computer system is already out on loan to a member.

Computer 2:

- 486 model, 66 MHz processor (speed)
 - 162 Mb hard drive (68 Mb free)
 - 8.0 Mb RAM (memory)
 - Windows '95
 - 2 user manuals
 - Colour monitor (14")
 - Keyboard, mouse & joystick included
 - SoundBlaster sound card installed, with two speakers
 - Not Internet-capable
 - No printer included
 - Programs installed: Microsoft Works containing various programmes
 - Games (not currently installed): Chess, Bridge, Fighter Duel, Cycle Mania, Jack Nicklaus Golf
- This computer system is currently available for loan*

Computer 3:

- Pentium 1 model, 100+MHz processor (speed)
 - 1 giga byte hard drive (444 Mb free)
 - 16Mb RAM (memory)
 - Windows '98
 - Colour monitor 14"
 - Keyboard & Mouse
 - No Sound facility
 - No Scanner
 - No Printer
 - Programmes already loaded are Microsoft Office '97
 - Dr. Solomon's Wingate Virus Checker
- This system is currently available for only short-term loan (6 months), as it maybe required at the Observatory if we are to proceed with electronic video image stacking and processing.*

These systems date from around 1994. They are limited in their capability, speed and memory, and will probably crash if loaded with modern-day software. However, for a member with limited requirement, or as an additional system to perform a limited service to a main computer they are very worthwhile. Currently none of these three computer systems have an Internet (Web) facility.

Currently the society also has three 60mm refractors with a full range of eyepieces, a pair of glasses, an Illuminated Planisphere and an Astro Compass all available for loan to members.

I am now in the process of applying sticky labels to all society instruments and equipment which states that the item to which they are fixed are the property of the society and giving my own telephone number as the contact.

If you are interested in any of the above items please contact Graham Boots on 01903 505346 I express my gratitude and thanks to the donors.

Dates for your Diary

SAGAS Meeting – 20 October 2001

Peter Seiden

Please Note that as of 1940hrs Friday 5th October 2001, 81 of the 90 available seats at the next SAGAS Meeting have now been sold.

(Brighton, SDAS, HAG, received today). Cheques made out to 'South Downs Planetarium Trust' @ £2.50 a head, to me, Pete Seiden

As already detailed the venue is the South Downs Planetarium and Science Centre, Sir Patrick Moore Building, Kingsham Farm, Kingsham Road, Chichester, West Sussex.

As an additional attraction, it is expected that Sir Patrick Moore will be at the venue from approx 1pm onwards with copies of his latest book, *The Star of Bethlehem* (Hard Back £9.95) for signing. His publishers are also expected with wine and nibbles.

If there are any persons in wheelchairs only two spaces available for them. There are two parking bays outside the building for severely disabled to park vehicle (Need to know beforehand).

Directions to the Planetarium:

South Downs Planetarium and Science Centre Sir Patrick Moore Building, Kingsham Farm, Kingsham Road, Chichester, West Sussex.

BY ROAD

(a) Chichester by pass A27 (westbound) turn right, at Whyke Road roundabout (junction of Selsey Rd B 2145) into Whyke Road. Travel a short distance and take the first turning on the left, Kingsham Avenue, travel straight down this road, it narrows, and when it widens again it becomes Kingsham Road. Follow it when you come the second turning on the left, marked CHICHESTER HIGH SCHOOLS (This is just before the end of the road and the Police Station on the corner). Drive into the school entrance and you will see signs for the car park and the footpath to the Planetarium. Note : the walk from the car park to the building is about two/three minutes walk.

(b) Chichester by pass (A27) eastbound turn left at Stockbridge Roundabout (Junction of A286) and drive for a short distance & then turn right at the Richmond Arms pub, into Basin Road. Follow the road by the canal, & a sharp left turn, then turn right into Kingsham Road, which has the Police Station on the corner. Once in the road,

take the first turning on the right, marked CHICHESTER HIGH SCHOOLS and then drive in and follow signs to car park etc., as above.

BY RAIL/BUS

Out of Railway Station on north side (Main entrance/exit), cross road to bus station stay parallel with railway, walk along alleyway between bus station and railway. Cross level crossing by bus garage this is Basin Road ahead will be Police Station on corner of Kingsham Road. Stay in Basin Rd walk passed Police Station and you will find directly south of it, on the left, opposite GPO Sorting Office, a roadway and footpath with railings.

Walk along the footpath, a short distance, passed some houses and tennis courts on left and you will come upon a roadway, to the right. Follow that and the signs, which will lead you to the planetarium. Walking time from the station about 5/6 minutes.



Astrophotographic Evening

Alex Vincent

An astrophotographic evening will be held at Hill Barn Golf Course on Monday evening, October 15, 2001 between 2000hrs – 2200hrs (BST). Bring along a camera!

Objects hopefully to be photographed may include star fields, planets etc.

Astronomical Events:

Presented by Brian Halls

Oct 11 - Comet P/2001 Q5 (LINEAR-NEAT) Closest Approach To Earth (1.292 AU)
Oct 11 - Asteroid 247 Eukrate At Opposition (10.6 Magnitude)
Oct 12 - Comet C/2001 K5 (LINEAR) Perihelion (5.180 AU)
Oct 12-Asteroid 1998 ST27 Near-Earth Flyby (0.062 AU)
Oct 12 - Asteroid 4769 Castalia Near-Earth Flyby (0.342 AU)
Oct 12 - Asteroid 2000 CK33 Closest Approach To Earth (0.457 AU)
Oct 13 - Comet C/2001 Q6 (NEAT) Closest Approach To Earth (0.667 AU)
Oct 13-Asteroid 2001 EA16 Near-Earth Flyby (0.189 AU)
Oct 13 - Asteroid 1993 RA Closest Approach To Earth (0.500 AU)
Oct 14 - Asteroid 1999 TM12 Near-Earth Flyby (0.078 AU)
Oct 15 - Asteroid 2001 RB18 Near-Earth Flyby (0.094 AU)
Oct 15-Asteroid 2001 PD1 Near-Earth Flyby (0.262 AU)
Oct 16 - Asteroid 2001 KX67 Closest Approach To Earth (0.480 AU)
Oct 16 - Asteroid 1999 VG22 Closest Approach To Earth (0.797 AU)
Oct 17 - Asteroid 39 Laetitia At Opposition (9.4 Magnitude)
Oct 18-Asteroid 1999 HP11 Near-Earth Flyby (0.141 AU)
Oct 18-Asteroid 2001 SG262 Near-Earth Flyby (0.192 AU)
Oct 19 - Asteroid 1998 BX7 Closest Approach To Earth (0.512 AU)
Oct 20 - Asteroid 1994 TF2 Near-Earth Flyby (0.341 AU)
Oct 20 - Asteroid 1999 CF9 Closest Approach To Earth (1.182 AU)
Oct 20 - Asteroid 6564 Asher Closest Approach To Earth (1.199 AU)
Oct 21 - Orionid Meteor Shower Peak

Oct 21 - Asteroid 2001 SE170 Closest Approach To Earth (0.562 AU)
Oct 22 - Asteroid 12711 (1991 BB) Closest Approach To Earth (1.547 AU)
Oct 23 - Asteroid 2001 SL9 Near-Earth Flyby (0.277 AU)
Oct 23 - Asteroid 1998 HM3 Closest Approach To Earth (0.471 AU)
Oct 23 - Asteroid 1988 SM Closest Approach To Earth (0.602 AU)
Oct 24 - Asteroid 60 Echo At Opposition (10.4 Magnitude)
Oct 24 - Asteroid 361 Bononia Occults HIP 44087 (9.0 Magnitude Star)
Oct 24 - Asteroid 2001 RM Closest Approach To Earth (0.587 AU)
Oct 24 - 150th Anniversary (1851), William Lassell's Discovery of Uranus Moons Umbriel & Ariel
Oct 25 - Asteroid 2001 OE84 Near-Earth Flyby (0.252 AU)
Oct 25 - Asteroid 11405 (1999 CV3) Closest Approach To Earth (1.129 AU)
Oct 25 - 330th Anniversary (1671), Giovanni Cassini's Discovery of Iapetus
Oct 26 - Comet P/2001 R6 (LINEAR-Skiff) Perihelion (2.115 AU)
Oct 26 - Asteroid 3361 Orpheus Near-Earth Flyby (0.291 AU)
Oct 27 - Asteroid 2001 PE1 Near-Earth Flyby (0.279 AU)
Oct 28 - Daylight Saving - Set Clock Back 1 Hour
Oct 28 - Comet C/1999 U4 (Catalina-Skiff) Perihelion (4.915 AU)
Oct 28 - Asteroid 36 Atalante At Opposition (10.6 Magnitude)
Oct 29 - Mercury At Its Greatest Western Elongation (18 Degrees)
Oct 29 - 10th Anniversary (1991), Galileo Flyby of Asteroid Gaspra
Oct 30 - Asteroid 89 Julia At Opposition (9.6 Magnitude)
Oct 30 - Asteroid 1999 VM11 Closest Approach To Earth (0.307 AU)
Oct 31 - Asteroid 2001 RA18 Near-Earth Flyby (0.216 AU)
Oct 31 - Asteroid 5131 (1990 BG) Closest Approach To Earth (1.409 AU)
November 2001
Nov 01-Asteroid 1998 TU3 Near-Earth Flyby (0.257 AU)
Nov 01-Asteroid 1993 VB Closest Approach To Earth (0.403 AU)
Nov 03 - Taurids Meteor Shower Peak
Nov 03 - Moon Occults Saturn
Nov 03 - Asteroid 23 Thalia At Opposition (10.1 Magnitude)
Nov 04 - Mercury Passes 0.6 Degrees From Venus

Comet 19P-Borrelly

Alex Vincent

Date	Ra		Dec		Mag.
	hr	Min	Deg	arc-Min	
08.10.01	08	45.8	+23	53.9	8.8
13.10.01	09	02.8	+24	50.8	8.9
18.10.01	09	19.8	+25	45.3	9.0
23.10.01	09	36.5	+26	37.7	9.1
28.10.01	09	53.1	+27	28.5	9.2
02.11.01	09	09.3	+28	18.1	9.3
07.11.01	10	25.2	+29	06.9	9.5
12.11.01	10	40.6	+29	55.6	9.6

The above coordinates are for Epoch 2000.0.
The Comet goes through Cancer to Leo During This Period

Reports

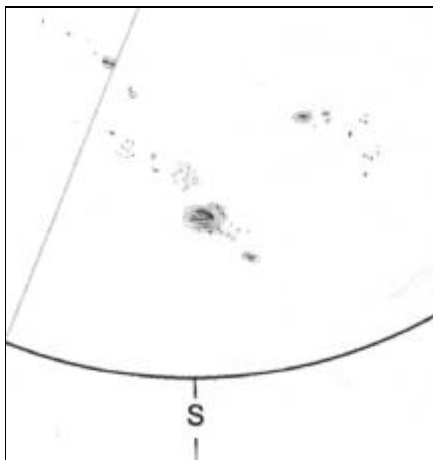
Solar Section Report ~ September 2001

By Section Director, Brian Halls

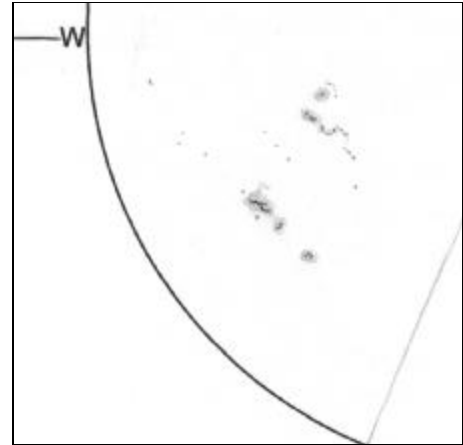
The Sun was again very active during the last month.

The large sunspot groups visible at the close of August were still on the solar disk during much of the first week of September. One active area, - 9601 (N13° L=217° size/class 780/Fkc), was observed as a naked-eye object by Nick on the 4th when the group was very much central on the disk. It remained a large and active region even when it disappeared over the west limb on the 10th.

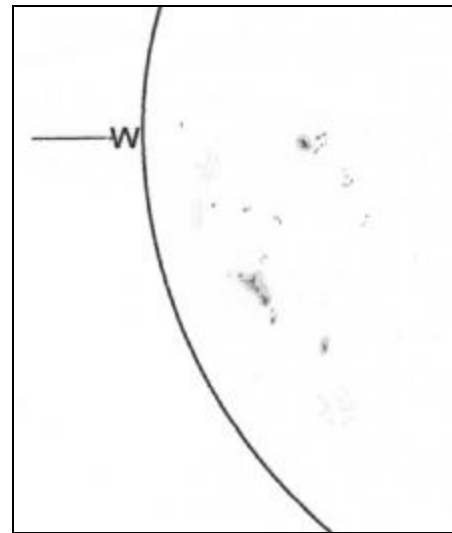
Large active groups were also visible in the southern solar hemisphere – regions 9610 (S13° L= 094° size/class 540/Eki) and 9611 (N10° L=180° size/class 370/Dko). Over a period of several days, these two groups made interesting telescopic objects as they worked their way across the solar disk – see drawings.



September 9th



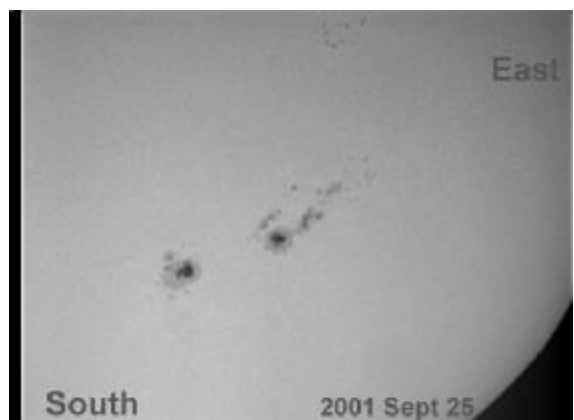
September 14th



September 15th

The Space Environment Centre at Boulder sent out an alert on the 11th – advising those who could, to keep a watch on a large magnetically complex group – 9608, as there was a suspicion that this group could produce a white light flare (a flare observable in an ordinary telescope).

Large and active groups were very much the norm for the month – picture of large group observed on 25th



Picture Courtesy of Mike Beales ~ BAA solar section web page

The Sun remains a very busy object to observe.

Members of WAS observed the Sun on 25 days during the month. Reports were received from Graham Boots, Nick Quinn and the Director.

Provisional Mean Daily Frequency of Active Area = 8.64
R= 138.59

September Meeting Reviewed

H. Jampton

The Chairman, Brian Halls began the meeting by reminding those present that the October meeting was the AGM meeting, and that all the posts were open for election. He also announced that a winter and spring programme of speakers was now available.

There were several apologies for absence - Nick Quinn, Linda Croft, David Storey and Linda Robertson were all in the United States - Nick and Linda Croft in California, while Dave and Linda Robertson were in Nevada. Dave and Linda who had got engaged some months before were in Las Vegas getting married - Brian hoped that those present would join him in wishing them both, every happiness for the future. The tragedy of the terrorist attacks in New York and Washington the previous day, were making travel plans for many tens of thousands of people difficult and again the Chairman wished our members a speedy and trouble free return home.

Michael Marshall the treasurer announced that the end of year financial report was available but he would mention more about it at the AGM.

The topic for the evening was the total solar eclipse that occurred in southern Africa in June.

In the absence of the programmed speaker, Bob Turner who had a prior speaking engagement, Brian gave the talk using Bob's notes, on the subject of the mechanism of eclipses.

Eclipses were not a wholly Earth-Moon-Sun event. Eclipses of other bodies in the solar system occur, though not to the glorious effect that we see here on Earth. We on Earth are blessed by the fact that the Sun and Moon both appear very much the same angular diameter when seen from the Earth. The reason for this is that though the Sun is 400 times larger in diameter than the Moon but it is also 400 times further away.

A number of other factors have to be taken into account. Neither the orbit of the Earth around the Sun, nor the orbit

of the Moon around the Earth is perfectly circular so a solar eclipse can differ in the totality time and the size of the track as the eclipse crosses the surface of our planet. Indeed, there are times when the angular diameter of the Sun is larger than that of the Moon and there is no total eclipse but another type of eclipse - an annular, where the body of the Sun appears as a ring (hence the Latin derived word 'annular') surrounding the completely darkened Moon. Eclipses can only occur when the orbit of the Moon crosses a 'node', which is the point of the Moons orbit around the Earth, which crosses the ecliptic. This varies each month and is the reason we never have a solar eclipse at every full moon and a lunar eclipse at every full moon. The nodes are not just arbitrary points in space - these nodes and the position of the Moon coincide at the same time every 18 years 10 days (or 18 years 11 days depending how many leap years have occurred during that period). This is the Saros period and solar eclipses are counted as being part of a series of eclipses that are a part of this 18-year period. Eclipse at the start of a Saros cycle occur at polar regions and gradually work themselves towards the equator, before once more drifting to the poles again - a Saros cycle can take many hundreds of years to complete.

The next talk was from the Librarian, Vanessa Wegner who, with her partner had travelled to Zambia to observe the solar eclipse. Vanessa began by thanking Graham Boots for spending a whole afternoon teaching her how to use the camera she had only just purchased for this event.

They had travelled to southern Africa and with some South African friends had visited Botswana, Zambia and Zimbabwe. For the eclipse they had chosen to go to Fringella outside Lusaka, the Zambian capital. It was here also that the BBC, NASA and South African TV had chosen to observe and broadcast the event. To get there, there was a drive and a 1-hour trek up a hill. But it was worth it - the view was superb. Vanessa was using her new camera - a Canon EOS 300, working with a 500mm telephoto lens, using Kodachrome ISO 100 slide film. For her first attempt, the pictures that Vanessa showed were very good - with a view of the Bailly's beads at second contact, prominences, the corona (the structure of which was very detailed) and, the diamond ring at third contact.

Only one thing she regretted - she had observed the eclipse through the camera view finder and had not taken time out to look at the eclipse with her eyes (something that Graham had warned her about) but she was now hooked on watching eclipses and would be willing to go to Antarctica to see her next one.

The next speaker was Brian who had gone to northern Zimbabwe to observe this eclipse with the Explorer's tour company. Much of the travelling had been done by coach

- nearly 3000 km were travelled starting in Johannesburg and finishing at Victoria Falls. After describing the trip from South Africa to Harare, he went on to describe the eclipse site at the Muamba School near the Ruya River at Rutinga. His tripod had been broken during transit and he had to use duck tape and shoelaces to tie his camera and 300mm telephoto to the tripod. Despite the ramshackle construction, he had been able to photograph the prominences and inner corona before the camera, telephoto lens and x3 converter swung away from the tripod and could not be used further. He observed the remainder of the eclipse with a pair of binoculars. He had also been able to do some other observations that he had not been able to do during the 1999 eclipse in the English Channel. He had photographed the drop in light during a sequence of photographs and been able to observe the effects of the eclipse on wildlife.



Virtual Kingdom Hotel

On the way back to Harare and the hotel, the eclipse watchers had stopped of to look at the milky way in Centaurus including the Coal Sack, observed the zodiacal light, seen Mars much higher in the sky than we do in Britain, and as Brian reminded everyone; those who had travelled to southern Africa had seen all four seasons in the space of a few days.

After the break, Graham gave the observatory report and, had advised that there were some telescopes available for loan, plus two computers that had been donated to the Society - these were both 486 machines and were capable of being used for word processing and other functions that did not require fast processing speeds. The meeting thanked both donors David Chillard and Bob Turner. Graham also went on and said that observer's nights had been quite well attended.

Brian for the solar section reported that the Sun had been conspicuously very active over the last few weeks and only the previous day there had been an alert sent out from the Space Environment Center (SEC) advising that the naked eye sunspot groups visible on the Sun at the moment were capable of producing a rare white-light flare and, those that were able to look out for such an event were recommended to do so.

WAS Ad

WAS Wear

Brian Halls

The Society is able to provide members with polo shirts and jumpers with the Society logo. They are made from quality material and well made.

Both types are in dark blue, with silver/white-embroidered logo. The prices are:

Polo shirt - £11.95

Sweat shirt (jumper) £13.95

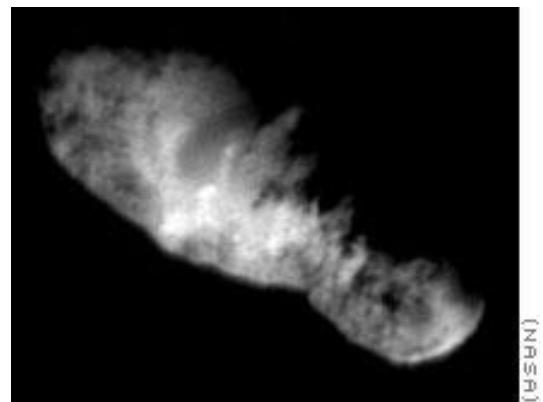
Please advise quantity of each type and size (S, M, L, XL) Makes cheques payable to Worthing Astronomical Society and send them to the Treasurer – address on back page.

WAS News News

Picture of comet close encounter released

Reuters

PASADENA, California (Reuters) -- In a risky fly-by, NASA's aging Deep Space 1 spacecraft navigated close enough to "see, feel and smell" the rocky nucleus of a comet, giving scientists their best look ever at icy dust and gas thought to be as old as the solar system itself.



This image taken by Deep Space 1 shows the rocky nucleus of comet Borrelly

"Deep Space 1 plunged into the heart of comet Borrelly and has lived to tell every detail of its spine-tingling adventure,"

Marc Rayman, project manager of Deep Space 1 at the Jet Propulsion Laboratory in Pasadena, California, told reporters at a press conference on Tuesday.

"The images are even better than the impressive images of comet Halley taken by Europe's Giotto spacecraft in 1986."

The space probe passed within 1,400 miles (2,200 km) of the 6-mile- (10 km-) long Borrelly -- which scientists said is shaped like a massive, cratered bowling pin fashioned out of icy charcoal.

Scientists said they hoped data from the fly-by would aid future comet exploration. They said it is possible that comets could serve as a source of water and rocket fuel to aid any future colonization of the inner solar system.

"It's mind-boggling and stupendous," said Laurence Soderblom, the leader of Deep Space 1's imaging team, and a geologist with the U.S. Geological Survey in Flagstaff, Arizona.

"These pictures have told us that comet nuclei are far more complex than we ever imagined. They have rugged terrain, smooth rolling plains, deep fractures and very, very dark material."

Scientists said although future analysis is required, Borrelly is thought to be a different type than Halley and made up of different materials. They said they believe this is because Borrelly may have come from a different region of the early solar system, which is said to have formed some 3.8 billion years ago.

In addition to sending back black and white photos of the topography of the comet's inner core, the spacecraft was also able to measure the gases and infrared waves around the comet, and how those gases interacted with the solar wind.

Scientists said that it appears that solar wind flows asymmetrically around Borrelly's surrounding particle cloud, rather than symmetrically, as it does with other comets they have examined. The reason for this apparent anomaly, however, remains a mystery that requires further study, they said.

What's on the Box?

Friday 12th October

BBC TWO

01.05-01.35 ~ Final Frontier

The latest in the world of astronomy and space exploration. Featuring a look at the state of Europe's rocket industry, plus October's events in the night sky.

Sunday 14th October

**BBC
KNOWLEDGE**

08.50-09.00, 11.50-12.00, 14.50-15.00 & 17.50-18.00

~Moments of Genius

(Big Bangs / Fly me to the Moon) Dr Donald Marshall, a Bangor University Chemist talks about Konstanin Tsiolkovsky, a Russian scientist working at the start of the 20th century who came up with the idea of the multi-stage spacecraft.

Monday 15th October

BBC ONE

00.30-00.50 ~ The Sky at Night

(Evolving Universe) Patrick Moore looks at the latest theories on inflation, dark energy and the accelerating Universe.

Wednesday 17th October

BBC RADIO 4

18.30-19.00 ~ The Hitch-Hiker's Guide to the Galaxy
Douglas Adam's epic adventure in time and space.

**BBC
KNOWLEDGE**

19.50-20.00 ~ Moments of Genius

(Discoveries from a Muddy Field) Brian Cox explores the history and technology of the Lovell Radio telescope at Jodrell Bank.

20.00-20.30 ~ Journeys in Time and Space

(Searching the Heavens) Chris Riley looks at the successor to the Hubble Space Telescope and finds out how ion engines and Solar sails will propel us into interstellar space.

Wednesday 24th October

BBC RADIO 4

18.30-19.00 ~ The Hitch-Hiker's Guide to the Galaxy
Douglas Adam's epic adventure in time and space.

Diary

October 10 – A.G.M – and *The Maunder Minimum Mystery* by Brian Halls

October 20 ~ SAGAS Meeting – Planetarium, Chichester. Pre-booked only.

November 14 – *Comets Past and Present* by Alan Drummond (Crawley Astronomical Society)

December 12 - *Origins of Astronomical Knowledge* by Norman Walker

January 9 – *Society New Year Social*

February 13 – *The Moon* by Peter Gill (Eastbourne Astronomical Society)

March 13 - *The Aurora* by Neil Bone (South Downs Astronomical Society, Astronomy Now)

All Meetings (**bold**) are held on the second Wednesday of every month unless otherwise stated, at Heene Church Rooms, Worthing at 7.30 p.m. Meetings include the latest astronomical work, reports and, photographs by members. For further information please call 01903 521205, on the Internet at www.was.org.uk or Email: worthing_astronomical_society@hotmail.com

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Note to Contributors

Contributions & Correspondence for the **November** issue of WAS NEWS should be with the Editor by **November 1st**. All material for inclusion should be sent to the Editor.

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