

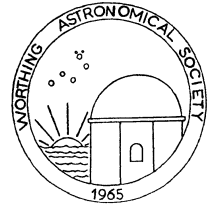


WAS NEWS

Monthly Newsletter of the Worthing Astronomical Society

Official website: www.was.org.uk

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



Number 172

February 2004

ALMANAC

All times U.T.

February / March

		LUNAR			
February	Date	Time	Rise	Set	
	6 th	08.47	16.52	08.14	
	13 th	13.40	01.01	10.02	
	20 th	09.18	07.44	17.23	
	28 th	03.24	09.47	02.12	
March					
	6 th	23.14	17.12	06.54	
	13 th	21.01	01.44	09.02	
	20 th	22.41	06.20	17.42	
	28 th	23.48	08.56	02.11	

1 st	11
4 th	02
4 th	05
6 th	18
7 th	17
22 nd	08

March	
	Saturn 5°S of moon
	Mercury in superior conjunction
	Jupiter at opposition
	Jupiter 3°S of moon
	Saturn at stationary point
	Mercury 3°N of moon

Minima of Algol

February	15 th	03.54	18 th	00.48	20 th	21.36	23 rd	18.24
March	6 th	05.42	9 th	02.30	11 th	23.18	14 th	20.12

EARTH

February	Sunrise	Sunset
6 th	07.32	16.58
13 th	07.19	17.11
20 th	07.06	17.23
28 th	06.49	17.38
March		
6 th	06.34	17.50
13 th	06.18	18.20
20 th	06.02	18.14
28 th	05.44	18.27

PLANETS

(As at February 28th.)

	Constellation	Rises	Sets	Mag.
Mercury	Aquarius	06.57	17.10	-1.4
Unfavourable				
Venus	Pisces	08.03	21.48	-4.2
Brilliant in the south west				
Mars	Aries	08.49	23.59	+1.1
Visible in the south west				
Jupiter	Leo	17.55	07.17	-2.5
Visible most of the night				
Saturn	Gemini	11.50	04.08	-0.2
Visible in the south west				
Uranus	Aquarius	06.45	17.00	+5.9
Unfavourable				
Neptune	Capricornus	06.00	15.13	+8.0
Unfavourable				
Pluto	Serpens cauda	02.10	11.49	+13.9
Unfavourable				

PHENOMENA

Day	Hour	February
19 th	14	Mercury 3°N of moon
22 nd	02	Uranus in conjunction
23 rd	22	Venus 3°N of moon
26 th	02	Mars 0.8°N of moon

Lunar Occultation's					
Times as at W.A.S. Observatory					
Date	U.T.	S.A.O.No	Mag.	Phase	
February	h. m. s.				
y					
15 th	06.19.05	185033	6.2	Reapp	
24 th	17.57.20	110110	4.5	Diss	
24 th	20.02.03	110146	8.5	Diss	
25 th	19.51.10	93003	8.9	Diss	
25 th	20.04.08	93010	8.7	Diss	
26 th	19.04.22	93399	8.8	Diss	
27 th	21.41.24	76510	8.6	Diss	
27 th	21.47.17	76507	8.7	Diss	
27 th	22.09.42	76513	8.8	Diss	
27 th	22.57.11	76526	8.6	Diss	
27 th	23.55.47	76539	7.4	Diss	
29 th	21.15.28	77759	8.4	Diss	
March					
1 st	00.34.59	77900	6.9	Diss	
1 st	20.04.31	78784	7.5	Diss	
1 st	23.06.23	78853	7.5	Diss	
2 nd	19.29.33	79650	5.4	Diss	
5 th	23.14.00	99150	7.1	Diss	
8 th	21.09.35	139022	6.1	Diss	

This is only about 15% of the predictions for the W.A.S. Observatory, full list available on E mail.

Dave Wells

Editors Note

Is it just me or does the recent speech by a certain country's President reaffirming the aim to put Man (or Woman) on Mars sound suspiciously like one made by a certain country's President's Father over a decade ago?

What we need is another Cold War, that'll get things moving!

Apologies for that little bit of politics, but after seeing those magnificent pictures sent back from the Red Planet it frustrates considerable to think that Man (or Woman) on Mars is still at least 20 years in the future.

Anyway to much more important issues – I would draw your attention to the 'Notices section of the Newsletter – for changes are afoot.

Rob

Dates for your Diary

Celebrated Total Lunar Eclipse

Alex Vincent

The night of February 29 / March 1 2004 marks the 500th anniversary of a total lunar eclipse which has a place in history. Christopher Columbus made good use of the total lunar eclipse which occurred on the night of February 29 / March 1 1504. A few days beforehand, during his stay in Jamaica, the local inhabitants refused to give him food and said to them "If you do not grant my requirements, I shall make the moon change colour and lose its light in a few days time".

The natives worshipped the moon and when it did change colour and lost its light, the natives were so alarmed that they provided food and other supplies that were needed. The effect on the Jamaicans would have been much greater had the moon disappeared completely during totality.

Reports

Solar Section Report - January, 2004

Section Director, Brian Halls

The Sun is now well into the latter phase of the sunspot cycle. The daily number of sunspots and sunspot groups declines. Over the last several months we have seen very large naked eye sunspot groups crossing the face of the Sun and these large active areas still appear.

During the first week of January the average number of spots did not amount to more than three a day, however one of the groups (0536 S10⁰ L=074⁰) was sufficiently large to reach naked eye visibility (maximum size 980 on the 6th). It was magnetically complex and was flare active.

This group was, for much of the time, a lone southern region, with active groups appearing in the northern solar hemisphere. Many of these were short lived. Activity on several days in the second week being limited to just two groups – the large southern group which was now slowly decaying in size – and a C class group (0537 N05⁰ L=009⁰) which developed into a larger and magnetically complex D class group.

By the start of the third week, the number of groups began to increase to an average of 4 groups evenly distributed between both hemispheres. It remained this state of affairs until the close of the month.

On the 27th and 28th no spots were recorded, however by the end of the month, activity was once more increasing.

Observations were made on 14 days and were recorded by Graham Boots and the Director.

MDF = 3.07 (R= 41.5)

The Planets in February 2004

Glen Thomas - Planetary Section Director

Mercury passes through solar conjunction early next month and is not visible during February. If you were disappointed with the view in January then you can look forward to the very favourable apparition in the latter half of March.

Venus is already a glorious sight in the south-west in the evening, but it has not yet reached maximum eastern elongation (angular distance from the Sun). Being so high in the sky, above the turbulence in the air, Venus appears rather more steady than usual, making observation easier.

Mars continues to recede, the tiny disc shrinking and dimming further even as it still sits high in the evening sky.

Jupiter is close to its Mar 04 opposition so it is visible through most of the night. Even though it is more than 4 times further from us than the Sun, the giant planet still presents a 44" disc in the constellation of Leo..

Saturn is twice as far away as Jupiter, but with its ring system open wide Saturn slightly tips the angular size scales in its favour at 45" x 20". It is high in the sky all evening and a marvelous sight.

Uranus, Neptune and Pluto are not visible.

Notices

To all members of the Worthing Astronomical Society

The Observatory

Graham L. Boots - Curator of the Observatory

By the end of this current session I will have been curator of the observatory for 34 years and will have reached the age of 60. I now feel the time has come to make my exit while I am still able, helping to establish the observatory at a new home where it will continue to serve those with an interest in astronomy. I will, therefore, retire from my position within the Worthing Astronomical Society as Curator of the Observatory on the 31st October 2004.

In an ideal world I would like to see the observatory stay in the ownership of the Society and be operated from a local site by members. We have an excellent observatory building, which is now 10 years old, and the current 30 cm. Newtonian was completed 20 years ago this year by member, the late Charles Stiff. It remains an excellent optical telescope for visual astronomy but does now leave something to be desired electrically and mechanically. It does not belong to the really modern class of computerized detectors. As well as the telescope there is a great deal of support equipment plus the stock of small telescopes and electrical systems that are loaned out to members.

At the observatory there are a few very special historical and some very special modern astronomical books, several slide collections, and fine photographic display boards showing members photographs and a few extremely interesting and unusual astronomical items that belong to the Society. Over the years I have been given these items simply to look after and make available for exhibitions and loan to members. Again a good home is required for these items.

If we cannot find the resources within the Society to operate and look after this facility then perhaps it should be offered to a local senior school, providing it can be shielded from the obvious and real risk of vandalism. Another alternative is that it be offered to a member society of the South Area Group of Astronomical Societies (SAGAS), which has existing ground at their own observatory site. Such societies are Hampshire, Croydon and Isle of Wight and I expect there are others who could be approached. Whatever is finally done with the observatory will have to be a committee decision of our Society.

During my time there have been some really exciting and rewarding times. The great aurora of 1989, the naked eye comets Hale-Bopp and Hyakutake, the impact of comet Shoemaker-Levy 9 upon Jupiter, and the aftermath we all could see. The total eclipse of the Sun that I saw from

Bulgaria in August 1999 and the total eclipse of the Moon in January 2001 were magnificent events. Then there was the splendid and colourful Geminid meteor display of December 1996 and the August displays of the Perseids. On observer's evenings passes of Mir, International Space Station, space shuttle and fantastically bright showings of Iridium satellites always added to the enjoyment. I remember the evening of 29th April 2002 when I was able to show 14 members and visitors all 5 naked eye planets together in the western quadrant. Another special event was the transit of Mercury on the 7th May 2003 when over 20 members and friends came to the observatory. In October 2003 there were 3 naked eye sun spot groups all at the same time. I have shared by time with so many, enjoying tremendous views of coloured double stars, planetary detail, spectacular nebulae-rich star clusters and faint but intriguing galaxies. Between us we have timed dozens of lunar occultations. We have used the tools of photography and electronic imaging to really good effect.

It is important that we try and retain our observatory somewhere; it has been a credit to us all for so long.

For my part I will continue to serve the Society as Stellar and Deep Sky section director and embark upon my own observing interests.

Over the last 35 years I think thousands of people have come to the observatory. They have gained a better knowledge of the science of astronomy giving them a deeper appreciation of the wonders of the night sky. Albeit in a small way, we have provided data for the benefit of the advancement of our science. In our time members and I, have through this hobby, contributed a little to the understanding of creation.

Observatory Change

Graham Boots - Curator of the Observatory

In recent times observer's evenings have been held whether conditions have been clear or cloudy. As the observatory activity is being scaled down I wish to revert to observer's evenings on just clear evenings. If in doubt as to whether the evening is on or off please telephone 01903 505346.

What's on the Box

Thursday 12th February 2004



02.05-02.30 ~ **Discovery**

Stars in Their Eyes - Rajesh Merchandani investigates some of the ancient systems of astronomy: Sumerian,

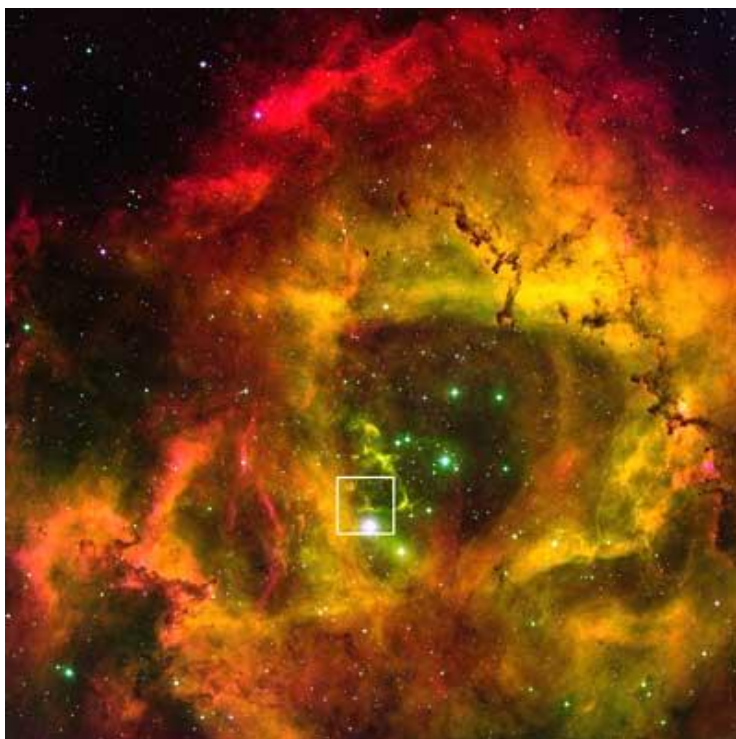
Egyptian, Indian and Chinese, and meets the astronomers who study these systems.

WAS News News

Fitful young star sputters to maturity in Rosette Nebula

National Optical Astronomy Observatory News Release

A duo of Chinese and American astronomers have discovered a young star in the fierce environs of the Rosette Nebula that is ejecting a complex jet of material riddled with knots and bow shocks.



A newly reprocessed image of the Rosette Nebula (NGC 2237). In this image, a box has been drawn around the zoomed in area containing the jet Rosette HH1, and represented in the images below. Credit: T. Rector/University of Alaska Anchorage, WIYN and NOAO / AURA/NSF

Stripped of its normally opaque surroundings by the intense ultraviolet radiation produced by nearby massive stars, this young stellar object is likely one of the last of its generation in this region of space. Its tenuous state of existence exposes the limitations that young stars--and perhaps even sub-stellar objects such as brown dwarfs and large planets--face in attempting to form in such a violent environment.

"Most young stars are embedded in very dense molecular clouds, which makes our view of the early stages of star formation normally impossible with optical telescopes," says Travis Rector of the University of Alaska Anchorage, co-author of a paper on the young stellar object (YSO) in the December 2003 issue of *Astrophysical Journal Letters*. "This is one of only a few cases where a protostar is visible, making it a valuable discovery that will be studied in detail."

Optical images of the jet taken at the WIYN 0.9-meter telescope at the National Science Foundation's Kitt Peak National Observatory in Arizona show a highly-collimated jet, now known as Rosette HH1, stretching for more than 8,000 astronomical units (1 AU = 150 million kilometers). It contains a prominent knot and hints of others, which can be interpreted as "bullets" of material being ejected from the rapidly rotating YSO at hypersonic velocities on the order of 2,500 kilometers per second. Bow shocks on the other side of the YSO suggest the existence of a degenerated counterjet extending in the opposite direction.



In this zoomed image of the jet, an arrow has been drawn to indicate the Young Stellar Object, Rosette HH1. Credit: T. Rector/University of Alaska Anchorage, WIYN and NOAO / AURA/NSF

These interpretations of the jet were bolstered by optical spectroscopy of the jet system taken by co-author Jin Zeng Li of the Chinese Academy of Sciences in Beijing using the 2.16-meter telescope of the National Astronomical Observatories of China.

"If it is indeed a counterjet, it may be the only existing observational evidence of how bipolar jets evolve into monopoles, or at least highly asymmetric jets," according to Jin Zeng Li. "This suggests that this infant star has been starved of material as its accretion disk is evaporated, leaving a very low-mass star. In some cases, this process might result in an isolated brown dwarf or planetary mass object, offering a potential evolutionary solution for such lone objects that have been spotted in the Orion Nebula and other nearby hotspots in the Milky Way."

Located an estimated 1,500 light-years from Earth in the constellation Monoceros, the Rosette Nebula is a spectacular region of ionized hydrogen excavated by the strong stellar

winds from hot O- and B-type stars in the center of the young open cluster NGC 2244. It is a region of on-going star formation with an age of about three million years.

Opportunity cruising to exposed bedrock

By Spaceflight Now

Driving up the inclined wall of the small crater the craft landed in, the Mars rover Opportunity was expected to arrive at the outer edge of bedrock outcropping early Saturday to begin its geologic work.

"Opportunity is continuing to turn the crank and move forward with its set of activities," mission manager Matt Wallace reported Friday.

Earlier this week, the Opportunity rover used its suite of instruments to examine a patch of soil in front of the rover. This is the spot where the craft drove to after rolling of its lander base last weekend.

"We've had a good number of productive days over the last few days. We completed exercising the instrument arm and the Mossbauer Spectrometer, APXS (Alpha Particle X-Ray Spectrometer) and MI (Microscopic Imager) at the site where we egressed to.

"Yesterday, we completed a drive of about three-and-a-half meters. The drive was composed of several arc turns to the left, followed by an arc turn to the right, a turn in place and then a small drive forward, all of which were designed to give us some additional confidence in the characterization of the mobility system and its performance at Meridiani in this crater.



This picture from the rear hazard-identification camera on Opportunity looks back at the tracks the rover has made. Credit: NASA/JPL

"Today, we sequenced a drive to approach the right-hand side of the outcrop, a target that is named Snout. The drive was about a 1.6-meter drive. We executed the drive (but) we came up a little bit short on Snout. And so we will complete that approach tomorrow."



A view from Opportunity's forward camera shows the outcrop. Credit: NASA/JPL

As the rover climbs the crater wall, it is pitched nose-up by almost 13 degrees, he said.

Before finishing the drive Saturday, Opportunity's arm will be deployed to take microscopic images of the soil of the current position before moving on.

"We'll drop the arm down towards the soil and take several more of these spectacular Microscopic Imager pictures of the soil so we can continue to catalogue the soil inside this crater. Then we will restow the arm and drive forward."

After reaching Snout, the rover's science devices will be employed Sunday to examine the exposed bedrock.

"From there, it's looking like the scientists are asking us to start an arc along the bottom of the outcrop area, stopping at several choice viewing locations and taking some additional pictures and potentially dropping the arm down and getting additional microscopic images as we go.

"So that's where we've been and that's where we're going.

"The spacecraft continues to operate nominally. She's healthy and happy and continuing to do the job she was appointed to do."

Diary

February 11 2004 *Solar Neutrinos* - Dr. Robert C. Smith University of Sussex

10th March 2004 **Transit of Venus, Robin Gorman – Hampshire Astronomical Group**

14th April 2004 **Isidis Planitia – Beagle 2 Landing Site on Mars Dee Levers Memorial Lecture. Dr David Rothery – Open University Dept. of Earth Sciences.**

12th May 2004 **Member's Contributions. Various short talks and slides / video display. Members show and describe their current activities.**

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: glen.thomas@bigfoot.com

Executive Committee

Chairman: Glen Thomas

20 Wayside Avenue
Durrington
BN13 3JU
Tel: 01903 261723
Email: glen.thomas@bigfoot.com

Vice-Chairman: Bob Turner

21 Beechwood Ave
Worthing
West Sussex
BN13 2HR
Tel: 01903 692522
Email: rfturner@compuserve.com

Business Secretary: Christa Sutton

8 Tower Road
Lancing
BN15 9HT
Tel: 01903 523764
Email: christa.sutton@ntlworld.com

Meeting Secretary: Graham Boots

101 Ardingly Drive,
Worthing,
West Sussex
BN12 4TW.
Tel / Fax: 01903 505346
Email: grahamboots@observatory99.freeserve.co.uk
Web Site: www.observatory99.freeserve.co.uk

Membership Secretary: Post Vacant

Treasurer: Michael Marshall

84 Bramley Road,
Worthing,
West Sussex.
BN14 9DT
Tel: 01903 823576

Curator of the Observatory: Graham Boots

101 Ardingly Drive,
Worthing,
West Sussex
BN12 4TW.
Tel / Fax: 01903 505346
Email: grahamboots@observatory99.freeserve.co.uk
Web Site: www.observatory99.freeserve.co.uk

Note to Contributors

Contributions & Correspondence for the **March** issue of WAS NEWS should be with the Editor by **March 1st**. 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

a b c d e f g h i j k l m O n o p q r s t u v w x y z

