



WAS NEWS

Monthly Newsletter of the Worthing Astronomical Society

Official website: www.was.org.uk/

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



Number 160

January 2003

ALMANAC

All times U.T.

January./ February.

LUNAR

January	Date	Time	rise	set
New moon	2nd	20.23	08.09	15.19
First Quarter	10th	13.15	11.39	** **
Full Moon	18th	10.48	16.09	08.31
Last Quarter	25th	08.33	00.27	11.03
February				
New moon	1st	10.48	08.19	16.34
First Quarter	9th	11.11	10.27	00.56
Full Moon	16th	23.51	16.26	07.35
Last Quarter	23rd	16.46	01.05	09.51

EARTH

January	Sunrise	Sunset
2nd	08.06	16.03
10th	08.03	16.13
18th	07.57	16.25
25th	07.47	16.40
February		
1st	07.39	16.49
9th	07.26	17.04
16th	07.13	17.16
23rd	06.59	17.29

PLANETS (as at January 25th.)

Constellation	Rises	Sets	Mag.
Mercury Sagittarius	06.23	14.54	0.3
Possible morning sighting			
Venus Ophiuchus	04.38	13.15	-4.3
Magnificent morning object visible in the South east			
Mars Scorpius	03.45	12.12	1.3
Morning object visible in the South east			
Jupiter Cancer	17.16	08.27	-2.6
Morning object visible in the South			
Saturn Taurus	13.10	05.18	-0.3
Visible most of the night			
Uranus Aquarius	08.47	18.41	5.9
Unfavourable			
Neptune Capricornus	08.04	17.08	8.0
Unfavourable			
Pluto Ophiuchus	04.07	13.53	13.9
Unfavourable			

PHENOMENA

Day	Hour	January
11th	02	Venus at greatest elongation W. 47°
11th	20	Mercury in inferior conjunction
15th	19	Saturn 3° S. of moon
19th	17	Jupiter 4° S. of moon
23rd	01	Mercury at stationary point
27th	15	Mars 0.4° N. of moon
28th	18	Venus 4° N. of moon

31st	00	Neptune in conjunction
February		
2nd	09	Jupiter at opposition
4th	01	Mercury at greatest elongation W. 25°
12th	02	Saturn 3° S. of moon
15th	20	Jupiter 4° S. of moon
17th	22	Uranus in conjunction
22nd	08	Saturn at stationary point

Minima of Algol

January	9th 17.42	21st 05.00	24th 01.48
	26th 22.36	29th 19.24	
February	10th 06.42	13th 03.30	16th 00.24
	18th 21.12		

Lunar Occultations Times as at W.A.S. Observatory

Date	U.T.	S.A.O.No	Mag	Phase
Jan	h. m. s.			
9th	18.21.58	128938	9.0	diss
9th	20.02.24	128962	8.4	diss
11th	22.09.57	92875	8.6	diss
12th	21.03.51	93238	8.5	diss
17th	02.51.57	78682	3.1	diss
21st	00.09.56	99150	7.1	reapp
21st	02.12.15	99172	5.7	reapp
21st	23.44.14	118813	6.6	reapp
22nd	02.14.17	118859	6.8	reapp
24th	04.49.58	139230	8.5	reapp
27th	05.55.37	183972	5.8	reapp
Feb.				
5th	19.51.09	128806	6.7	diss
6th	21.50.13	109793	5.2	diss
7th	18.34.00	110240	9.0	diss
7th	18.53.25	110238	8.2	diss
9th	21.10.47	93474	8.3	diss
9th	21.32.06	93473	7.2	diss
9th	21.44.03	93480	8.7	diss
9th	22.41.26	93494	6.3	diss
10th	20.05.14	76548	5.3	diss
10th	20.08.23	76550	8.7	diss
10th	20.09.50	76546	8.2	diss
10th	21.27.18	76565	7.0	diss
10th	21.38.46	76564	6.8	diss
10th	22.37.24	76581	8.6	diss
11th	00.07.53	76609	7.5	diss
11th	01.01.58	76618	5.7	diss
11th	23.21.23	77082	6.8	diss
12th	20.24.23	78002	8.0	diss
12th	21.08.57	78035	8.1	diss
13th	00.22.15	78146	7.5	diss
14th	01.23.42	79199	6.0	diss
20th	05.13.26	139072	6.7	reapp

This is only about 13% of the predictions for the WAS. observatory.

Dave Wells

Editors Note

Happy New Year one and all, I hope that you all had a restful and enjoyable Christmas, and are all now ready and fighting fit for the year ahead. So without further ado – read on!!

Rob

Dates for your Diary

Comets

Alex Vincent

Comet 2002 X5 Kudo-Fujikawa.

Date	R.A.		Dec.		Mag.
	h	m	°	'	
Jan 10 th	19	06.1	+15	30	4.6
Jan 13 th	19	22.3	+10	50	4.1
Jan 16 th	19	37.8	+06	00	3.5
Jan 19 th	19	51.7	+00	55	2.7
Jan 22 nd	10	05.3	-04	33	1.7

This comet is predicted to reach magnitude 0 in the spring, but will only be a few degrees from the sun. During January the comet goes through Hercules and Aquila. It is visible in both the evening and morning skies.

Comet 2002 V1 NEAT.

Date	R.A.		Dec.		Mag.
	h	m	°	'	
Jan 9 th	00	25.5	+11	22	9.4
Jan 13 th	00	09.3	+10	42	9.1
Jan 17 th	23	54.1	+10	02	8.8
Jan 21 st	23	40.0	+09	23	8.5
Jan 25 th	23	26.4	+08	41	8.0

This comet is in Pisces. The above co-ordinates are for Epoch 2000.0.

Reports

The Planets in January 2003

Section Director Glen Thomas

Mercury moves past an inferior solar conjunction on the 11th into a slightly favourable morning apparition. Although the tiny planet's orbit currently takes it above the plane of the ecliptic (the path the Sun takes across the sky) it does not get very high in the dawn twilight. Look for it around the **26th**, about 5° above the SE horizon around the start of civil twilight (about 7:00 am, when the sky starts its predawn brightening - see table).

Mercury, 2003 January/February

Jan	time	alt	az
17	0719	2.5°	125.0
20	0716	4.3°	128.7
22	0714	5.1°	130.5
24	0712	5.5°	131.7
26	0710	5.6°	132.5
28	0709	5.5°	132.9
31	0704	5.1°	132.8
Feb			
02	0701	4.7°	132.4
05	0657	4.0°	131.4

Venus is still high in the SE sky before dawn, with **Mars** close by to its right. The two planets start around 5° apart, stretching to 16° by the month's end. While Venus has reversed its westward motion away from the Sun to start its slow march to an August solar conjunction, Mars continues westwards to an exciting August opposition, the closest since 1924. It is a small planet but it is growing in apparent size as it nears, from 3.8" to 4.2" during the month.

Jupiter is more than ten times the angular size of mercury and is a dramatic after 22:00 when it will have risen above 30° altitude. Look out for the double shadow transit of **Io** and **Europa** starting about 20:45 on the 10th. The Great Red Spot will also be visible then, approaching the western limb.

Saturn is high in the sky all evening. Look for one of the most mysterious objects in the solar system, the frigid cloud covered moon **Titan**. Larger than Mercury, recent infrared observations have tracked clouds rising on summer thermals. Find Titan 4 diameters W of Jupiter on the **14th** and **30th**, and E on **22nd Jan** and **7th Feb**.

Uranus, Neptune and Pluto are all too close to the Sun to be observed.

The bright asteroid **20 Massalia** is high in the sky, moving slowly 1.5° to 2° S of 94 τ Tauri throughout the month. At magnitude 9.2, the motion should be visible from one night to the next.

Solar Section Report - December 2002

Section Director, Brian Halls

The Sun rising late and setting early, along with the seasonal weather makes solar observing during the latter part of the year (and for that matter the early part of the year too) a task that the amateur astronomer might not always be able to overcome.

In the early days of the British Astronomical Association (BAA), solar observing was considered to be a 'genteel' pursuit for the lady astronomer. I do not believe there was a sexist motive behind this – middle class women did not expect to work and therefore were available during the day to observe the Sun while their husband was away running the Empire or business. Now days, this is not the case of course, nearly all of us have to work, though many people do work from home in this electronic age, so I am amazed that members of the society are able to observe the Sun on the number of days that they do.

For anyone lucky enough to look at sunspot activity, the beginning of December followed the pattern of previous months. During much of the first week, there were a reasonable number of sunspot groups of the C and D class type; three active areas evolved into E class groups, (sunspots areas that are spread along 10^0 of longitude), but unlike some of the groups we have seen over the last several months, these never reached naked-eye visibility.

The pattern of moderate sunspot groups continued into the second week of the month. It was only by mid-month when a sunspot group (region 100226 S28⁰ L=127⁰ area/class 720 Fki) began to evolve while on the visible disk. It did however dissipate quite rapidly over a few days before disappearing over the west limb on 24th.

Over the holiday period, the number of sunspots visible declined until by the end of the month, only three moderate active area were visible.

Is this the end of the prolonged peak of solar activity we have observed over the last year? We should be expecting a decline in activity as sunspot maximum passes and we take the long slow slope to sunspot minimum but, with the Sun, we never quite know what will happen.

I hope to keep you posted during the coming year.

Minutes of Monthly Meeting on Wednesday, 11th December 2002

David Chilard, Assistant Secretary

Society business: The meeting began late as the lecturer had been delayed in traffic. Brian gave some notices during the wait, including the news that Astronomy Calendars and the *Astronomy Now* yearbook were available.

“North American Star Parties”: The evening's lecture was provided by Owen Britten, on a phenomenon virtually unknown in this country, but common in the USA and growing in Canada. Star parties are events where people gather in remote areas for extensive

astronomical studies free from light pollution and, it is at least hoped, the extremes of weather!

Further Society business: Brian also previewed the annual Winter Solstice Meeting on the 21st of December at the North Star pub, the Geminid meteor shower due for the night of the 13th (possibly 25 per hour), and reported on the solar eclipse in South Africa and Australia, which occurred low on the horizon and was thus magnified. Graham also gave a summary of events at the Observatory, revealing that the previous six Friday Viewing Nights had been clouded out, though the telescope Video Imaging System was now in place with imaging process available; the annual report was in the December issue of *WAS News*. Finally, Brian warned all of the Social to be held on the 8th of January.

The Meeting was well turned-out and well received by all present.

Notices

From the Chairman

Brian Halls

May I take this opportunity to wish all our members and readers a Happy New Year filled (hopefully) with a lot of clear skies!

The month and year begins with an old and new comet. The 'old' comet is comet Brewington, the 'new' comet is blessed with the name Kudo-Fujikawa.

Early on the morning of December 14th, Japanese amateur Tetuo Kudo was searching the skies with his giant 20 x 120 binoculars. While scanning the constellation Hercules, he spotted something new -- a fuzzy 9th-magnitude glow moving slowly east-southeast. Follow-up observations by Ken-ichi Kadota (Saitama, Japan) confirmed the object and revealed a short tail about 1/3 degree in length, pointing away from the Sun.

Brian G. Marsden of the Minor Planet Center in Cambridge, Massachusetts, indicates that this comet is headed for perihelion in late January, when it will pass well inside the orbit of Mercury and may brighten considerably.

As I write this (1st January – I know, sad isn't it) it is expected to reach mag 6.6 by mid month and is visible in the east before the dawn.

Comet Brewington is making its first return to the inner solar system since its first discovery in 1992; it is faint and fuzzy and will not quite be as bright as the previously mentioned comet. Comet Brewington moves closer to its

moment of perihelion on February 19th, its angular distance from the Sun steadily shrinks. However, Northern Hemisphere observers should be able to follow the comet through Aquarius and Pisces, where it will perhaps peak at 10th magnitude in February.

Mysterious Object

Ken Wakefield.

I hope you can help me, this morning (19th December 2002) at 06.28 hrs I saw an object burning up in the Western sky above Southampton Hampshire. It was not a shooting star as I have seen a number of those. This lasted for approx 4-5 seconds and was visibly burning up, it then seemed to stop burning and continued on its way for a second or so just as a red speck. The burning phase was very large indeed, if you hold your arm outstretched and put your forefinger and thumb a quarter of an inch apart that's how big it was in the morning sky. As I said it was in the Western sky but probably going north to south if you know what I mean. If you take the sky from horizon to horizon it travelled about a quarter of it and was at the top of the view.

I haven't made myself very clear have I? But that's the only way I could describe it to you. If you have any idea please let me know, I would be very grateful.

Received via email, any ideas? Please advise me – Ed.

WAS Ad

For Sale

Brian Halls

Tasco 100mm reflector, tripod, equatorial mount, accessories; user book; used only once.

Further details via the Acting Secretary (01903 521205 or worthing_astronomical_society@hotmail.com)

What's on the Box

Saturday 11th January 2003



12.10-12.30 ~ **The Sky at Night**

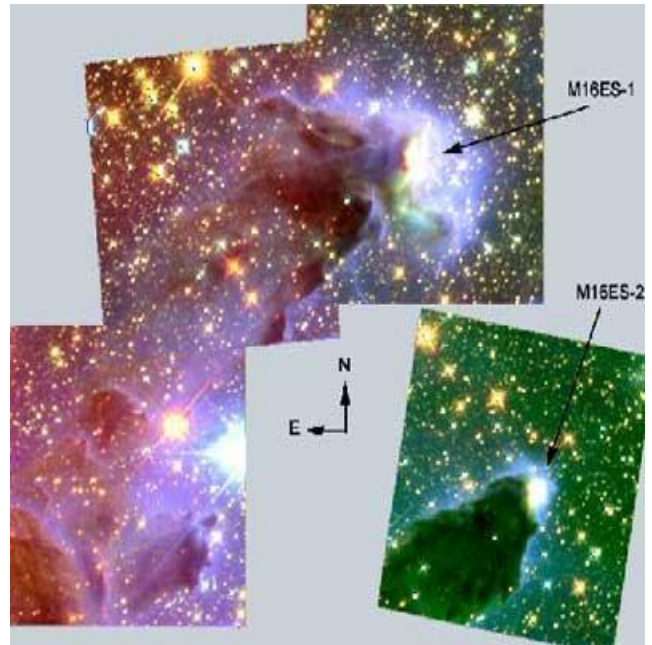
(Hot Stuff) Patrick Moore discusses the star nearest to the Earth, the Sun. There is also a report from Australia about the recent eclipse

If any members would like to know of any astronomical related programmes appearing on other TV or radio channels other than those normally listed, please let me know – Ed

WAS News News

Image previews Hubble's restored infrared vision

University of Arizona News Release



The University of Arizona-built 'infrared eyes' of the Hubble Space Telescope will be reopened to the universe in the NASA's next shuttle mission. A new infrared image of the "Pillars of Creation" is a glimpse of what is to come.

Scientists revealed the new infrared images taken with the UA-built infrared camera on the Hubble Space Telescope (HST) during a Feb. 15 NASA-televised news briefing on the upcoming shuttle mission to the telescope.

The images were taken by UA astronomy Professor Rodger I. Thompson, Arizona State University Professor Jeff Hester, and former UA planetary scientist Brad Smith. They show a very different view of the famous "Pillars of Creation" optical image that Hester took with the HST optical camera in 1995.

Seven astronauts will board Columbia Feb. 28 for an 11-day mission to upgrade and enhance the 2.4-meter Hubble.

UA scientists are intensely interested because the goal of one of five planned spacewalks is to revitalize NICMOS, the infrared camera and spectrometer built by UA scientists for the HST. The crew is to install an experimental cooling system and an associated radiator for NICMOS.

The new NICMOS image of the Eagle Nebula, taken before the camera's coolant was expended in 1999, demonstrates the importance of restoring the Hubble's "infrared eyes," said Thompson, who is principal investigator on NICMOS.

M16, NGC 6611, the Eagle Nebula, is a well studied region of star formation and the source of a widely recognized Hubble Space Telescope image. High spatial resolution infrared observations with the Near Infrared Camera and Multi-Object Spectrometer (NICMOS) on HST reveal the detailed morphology of two embedded star formation regions that are heavily obscured at optical wavelengths. It is striking that only limited portions of the visually obscured areas are opaque at 2.2 microns. although the optical images imply substantial columns of material, the infrared images show only isolated clumps of dense gas and dust.

Rather than being an active factory of star production, only a few regions are capable of sustaining current star formation. Most of the volume in the columns may be molecular gas and dust, protected by capstones of dense dust.

Two active regions of star formation are located at the tips of the optical northern and central large 'elephant trunk' features shown in the WFPC2 images. They are embedded in two capstones of infrared opaque material that contains and trails behind the sources. Although the presence of these sources was evident in previous observations at the same and longer wavelengths, the NICMOS images provide a high-resolution picture of their morphology. Two bright stars appear at the tip of the southern column and may be the result of recent star formation at the top of that column. These observations suggest that the epoch of star formation in M16 may be near its endpoint.

Team plots a faster path to Pluto for robotic probe

Johns Hopkins University News Release

New Horizons mission planners have developed a new strategy that could trim nearly a year off their original schedule to send a spacecraft to the solar system's outermost planet.

Now in preliminary development for NASA, New Horizons would be the first mission to explore Pluto and its moon, Charon, as well as the ancient Kuiper Belt of rocky, icy objects beyond the planets. If approved and funded later this year, New Horizons would launch in January 2006, swing around Jupiter for scientific studies and a gravity boost in 2007, and reach Pluto as early as 2015.



An artist's concept of the New Horizons spacecraft. The craft's miniature cameras, radio science experiment, ultraviolet and infrared spectrometers and space plasma experiments will characterize the global geology and geomorphology of Pluto and Charon, map their surface compositions and temperatures, and examine Pluto's atmosphere in detail. The spacecraft's most prominent design feature is an 8-foot dish antenna, through which it will communicate with Earth from as far as 4.7 billion miles away. Photo: Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute (JHUAPL/SwRI)

"As we continued to study the mission, and optimized our launch window, we realized that we could get the spacecraft to Pluto sooner," says New Horizons Mission Director Robert W. Farquhar, of The Johns Hopkins University Applied Physics Laboratory in Laurel, Md., which manages the mission and will build and operate the spacecraft. "In our best estimates we can cover the 3 billion miles from Earth to Pluto faster than we once thought, while keeping all the mission's goals intact."

New Horizons project leaders say a faster trip benefits the mission in many ways.

"This a great opportunity to improve our scientific return while reducing mission risks and costs," says New Horizons Principal Investigator S. Alan Stern, of the Southwest Research Institute in Boulder, Colo. "We'll get a better look at Pluto itself, since more of the surface will be sunlit and the atmosphere will be another year away from freezing onto the planet's surface. We'll have more fuel for the journey into the Kuiper Belt after exploring Pluto-Charon, and the shorter cruise time reduces some of the costs associated with flight operations."

New Horizons will characterize the global geology and geomorphology of Pluto and Charon, map their surface compositions and temperatures, and study Pluto's complex atmosphere in detail. The spacecraft will then visit up to three Kuiper Belt objects beyond Pluto.

Diary

January 8	<i>Society New Year Social</i>
February 12	<i>Astronomical Imaging from La Palma - Nik Szymanek & Ian King</i>
March 12	<i>Indoor Astronomy (observatory-remote operating) - Dr. Lilian Hobbs Southampton AS</i>
April 9	<i>TBA</i>
May 14	<i>TBA</i>
June 11	<i>The Planet Mars - Jerry Workman Bsc., F.R.A.S.</i>
July 9	<i>White Dwarf Stars - Konrad Maylin-Smith Croydan AS</i>

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
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Note to Contributors

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

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