



WAS NEWS

Monthly Newsletter of the Worthing Astronomical Society

www.was.org.uk



Number 197

May 2006

ALMANAC

All times U.T. for BST add one hour

May/June LUNAR

<u>May</u>	Date	Time	Rise	Set
First Quarter	5 th	05.13	10.46	02.11
Full Moon	13 th	06.51	20.43	03.43
Last Quarter	20 th	09.21	01.31	11.06
New moon	27 th	05.26	03.20	21.15
<u>June</u>				
First Quarter	3 rd	23.06	10.56	00.43
Full Moon	11 th	18.03	21.00	02.38
Last Quarter	18 th	14.08	00.05	11.48
New moon	25 th	16.05	02.39	21.07

EARTH

<u>May</u>	Sunrise	Sunset
5 th	04.25	19.30
13 th	04.12	19.42
20 th	04.02	19.53
27 th	03.54	20.02
<u>June</u>		
3 rd	03.48	20.10
11 th	03.43	20.17
18 th	03.42	20.20
25 th	03.44	20.22

PLANETS (As at May 27th)

Constellation	Rises	Sets	Mag.
<u>Mercury</u> Taurus	04.22	21.05	-1.2
Unfavourable			
<u>Venus</u> Pisces	02.41	16.15	-4.0
Morning object in the south east			
<u>Mars</u> Gemini	07.28	23.39	+1.7
Evening object in the south west			
<u>Jupiter</u> Libra	17.25	03.13	-2.5
Morning object visible most of night			
<u>Saturn</u> Cancer	08.34	00.07	+0.4
Evening object in the south west			
<u>Uranus</u> Aquarius	01.18	12.17	+5.9
Unfavourable			
<u>Neptune</u> Capricornus	00.26	09.58	+7.9
Unfavourable			
<u>Pluto</u> Serpens cauda	20.40	06.09	+13.9
Have you seen it yet?			

PHENOMENA

Day	Hour	May
12 th	13	Jupiter 5°N. of moon
18 th	20	Mercury in superior conjunction
22 nd	13	Neptune at stationary point
24 ^h	06	Venus 4° S. of moon
28 th	02	Mercury 3° S. of moon
31 st	05	Mars 3° S. of moon
31 st	23	Saturn 3° S. of moon
<u>June</u>		
8 th	16	Jupiter 4° N. of moon
16 th	17	Pluto at opposition
18 th	06	Saturn 0°.6 S. of Mars
19 th	08	Uranus at stationary point
20 th	20	Mercury at greatest elongation E. 25°

Minima of Algol

May	Unfavourable
June	Unfavourable

Lunar Occultation's

Times as at Old W.A.S. Observatory

Date	U.T.	S.A.O. No	Mag	Phase
<u>May</u>				
10 th	21.43.50	157869	6.8	Diss
29 th	20.42.37	78740	8.4	Diss
29 th	21.20.43	78770	6.6	Diss
31 st	20.41.43	80284	8.2	Diss
<u>June</u>				
1 st	21.23.50	98575	8.2	Diss
1 st	22.45.22	98600	7.5	Diss
2 nd	20.31.47	98991	6.4	Diss
3 rd	21.15.26	118575	8.1	Diss
3 rd	23.27.08	118605	8.3	Diss
6 th	00.10.42	138762	8.3	Diss
15 th	00.12.29	189549	6.3	Reapp
16 th	00.26.20	164524	7.0	Reapp
29 th	21.04.07	98854	7.5	Diss

The list above is a selection of the more easily observed evening events, about 31 % of the list available, there are lots more in the wee small hours for the insomniacs amongst us

Dave Wells

Editors Note

G'day!

September 2006 is almost with us!

So? I hear you ask, well dear members that will be the month of the 200th edition of WASNews!!!!!!!!!!!!!!!

So sharpen those pencils, rev up that brain box and submit! Anything will do - an amusing anecdote about how your dog ate your copy of Astronomy Now, the time your telescope's mount collapsed and trapped you in the garden all night or when you were caught 'aligning' the sighterscope opposite your neighbours bedroom window.

You all have it in you (WASfact: only 7% of the membership has submitted an article in the last 6 years)

Don't be nervous - imagine if you had to give a lecture! Now that's scary.....

Rob

Reports

Total Solar Eclipse.

Alex Vincent



On March 29 2006 there was a total solar eclipse across Libya and Turkey. Some WAS members went to Libya, while others and myself went to Turkey. I stayed at the Xanthe Resort Hotel at Side, which is situated near the sea and to the north are mountains with snow on their tops. The hotel was good and the food was excellent. On the night before the eclipse, Ian Morrison of Jodrell Bank gave a lecture and eclipse specs were given to everyone.

On the day of the eclipse, it was 21 degrees and clear. We set up our telescopes, cameras etc in the grounds of the hotel. First contact was 12.38 (local time) and lunch was at 12.30. Some of us took our food and drink with us from the hotel. As totality approached, the sky darkened a bit and Venus was visible. During totality the Diamond

Ring Effect was splendid as was the corona and Bailey's Beads. Totality was most awe-inspiring.

Also during totality, the horizon looked like a sunset for 360 degrees and Venus shone in the west looking as if it was in the evening sky after sunset. I took a number of photographs of both partial and total phases and as totality was ending, there was a reddening on the Sun's south-west limb, which were Bailey's Beads and then the Diamond Ring came. It was a good experience and worth the trip.

Solar Section Report - April, 2006

Section director, Brian Halls

As I commented at the end of my previous report (WASNEWS – April 2006), the size and quality of sunspot active area was showing signs of increase at the end of March and into the beginning of April.

A large southern group - AR0865 (S11⁰ Lo112⁰) had rotated onto the disk late in March (and was the prominent area that many people observed during the solar eclipse on the 29th) and was magnetically and visually, very active during the first week of April. This group reflected how active the Sun can be during this latter phase of the decline of sunspot minimum.

The Sun remained well spotted for the remainder of the month - the 23rd saw the reappearance of 0865, which was now catalogued as AR0875.

Of interest too, is that sunspot activity was inclined to the southern solar hemisphere for April – no northern sunspot active area being visible until a short lived group appeared on the 18th.

Reports were received for 14 days; Graham Boots (12 days) and the Director (6 days).

MDF = 2.42 (R = 31.6)

Explanation of terms used in this report:

MDF = Mean Daily Frequency; the average number of sunspot **active area** (active area are determined to be sunspots/groups that lay at least 10⁰ in latitude and longitude from their nearest neighbour). This is the method used by the BAA for many years to measure solar activity. The relative sunspot number, **R** is now also used as a index of sunspot activity.

AR = Active Region; can be defined as being similar to an active area, except that it might also include an area

devoid of sunspots - such as plages or other phenomena visible in other wavelengths of light visible on the solar disk. The number following AR is a catalogue number of each object derived by the **Space Environment Center**, in Boulder. They may also appear in other reports and literature as **NOAA AR** where NOAA is the National Oceanic and Atmospheric Administration section of the US Department of Commerce that includes the running of the Space Environment Center.

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Notices

Astronomical Publications

Graham Boots

The society annually subscribes to the following four organizations and receives their publications which are circulated free to members. Please let me know if you would like to go on any of the circulations lists letting me know which journals you would like. My telephone number is 01903 505346. They are *Astronomy Now*, *Sky & Telescope*, *Society of Popular Astronomy* including news letters and journal of the British Astronomical Association.

Articles

Astro Anniversaries – 2

Brian Halls

May 11: 1984 – From Mars, Earth transits the Sun. No one there to see it! Arthur C Clarke uses this event as a plot for a short story, “*Transit of Earth*”.

May 12: 1965 – Soviet probe, Luna 5 crashes into the Moon.

May 13: 1861: The Great Comet of 1861, discovered by John Tebbut in Australia.

May 14: 1973 – Skylab space station launched into orbit atop the last launch of a Saturn V

May 15: 1836 - Francis Bailey observes the phenomena that bares his name – Bailey's Beads, during an annular eclipse in Scotland; 1958 - Soviet Union launches Sputnik 3; 1960 – Soviet Union launches Sputnik 4.

May 16: 1969 – Soviet Venera 5, lands on Venus, while Venera 6 arrives a day later.

May 18: 1910 – Earth uneventfully passes through the tail of Halley's Comet – confounding those who claimed the world would end; 1969 – Apollo 10 launched to

Moon, to test lunar module within 8 miles of the lunar surface on the 22nd.

May 19: 1991 – Helen Sharman becomes first Briton into space, launched with two cosmonauts for a visit to the Mir space station.

May 24: 1543 – Copernicus publishes his death bed treatise, *On The Revolutions of the Heavenly Spheres*, a book that promulgated the theory that the Sun was at the centre of the solar system, and not the Earth.

May 28: 585 BC – a solar eclipse occurs, the appearance of which during a battle ends a war between the Lydian's and the Median's.

May 30: 1934 – birth day of Alexsei Leonov, Soviet era cosmonaut and first man to spacewalk outside his spacecraft.

June 2: 1966 – Surveyor 1 robot spacecraft, successfully soft lands on Moon (Oceanus Procellarum); 2003 – first ESA mission to planet Mars (Mars Express) launched.

June 4: 1754 – birth of Franz Xavier, Baron Von Zach, hunter of minor planets; 1769 – a transit of Venus followed 5 hours later by a solar eclipse occurs.

June 8: 2004 – First transit of Venus of the millennium.

June 12: 2004 – a chondrite type meteorite, strikes a house in New Zealand, causing serious damage but no injuries.

Messier Objects - Continued

Janet Young

The Messier Objects are so called because they were a list of fuzzy objects in the night sky compiled by Charles Messier (1730-1817) a French comet hunter. While hunting for comets he kept finding these faint and fuzzy objects, so decided to compile a catalogue of them to avoid them being mistaken for comets. He listed them as M or Messier followed by a number. Charles Messier did discover several comets, but it is for the Messier catalogue he is best remembered.

M50

Constellation: Monoceros

RA 07h 00m

Dec -8.16

Distance: 3,000 light years

Type: Galactic Cluster

NGC 2323

Galactic cluster, possibly first discovered by Cassini in 1711. Stars range from 12th-16th magnitude.

M51
Constellation: Canes Venatici
RA 13hrs 27m
Dec +47.2
Distance: 15 million light years
Type: Spiral Galaxy
NGC 5194

One of the most well known spirals in the sky. Famous for the drawings made by Lord Rosse with the 72 Inch Birr Telescope.

M52
Constellation: Cassiopeia
RA 23h 22m
Dec +61.20
Distance: 7,000 light years
Type: Galactic Cluster
NGC 7654

Rich open cluster with stars approximately of 15th magnitude.

M53
Constellation: Coma Berenices
RA 13hrs.10m
Dec +18.26
Messier Objects

M50
Constellation: Monoceros
RA 07h 00m
Dec -8.16
Distance: 3,000 light years
Type: Galactic Cluster
NGC 2323

Galactic cluster, possibly first discovered by Cassini in 1711. Stars range from 12th-16th magnitude.

M51
Constellation: Canes Venatici
RA 13hrs 27m
Dec +47.2
Distance: 15 million light years
Type: Spiral Galaxy
NGC 5194

One of the most well known spirals in the sky. Famous for the drawings made by Lord Rosse with the 72 Inch Birr Telescope.

M52
Constellation: Cassiopeia
RA 23h 22m
Dec +61.20
Distance: 7,000 light years
Type: Galactic Cluster
NGC 7654

Rich open cluster with stars approximately of 15th magnitude.

M53
Constellation: Coma Berenices
RA 13hrs.10m
Dec +18.26
Distance: 60,000 light years
Type: Globular Cluster
NGC 5024

Well viewed in small objectives.

WAS Ad

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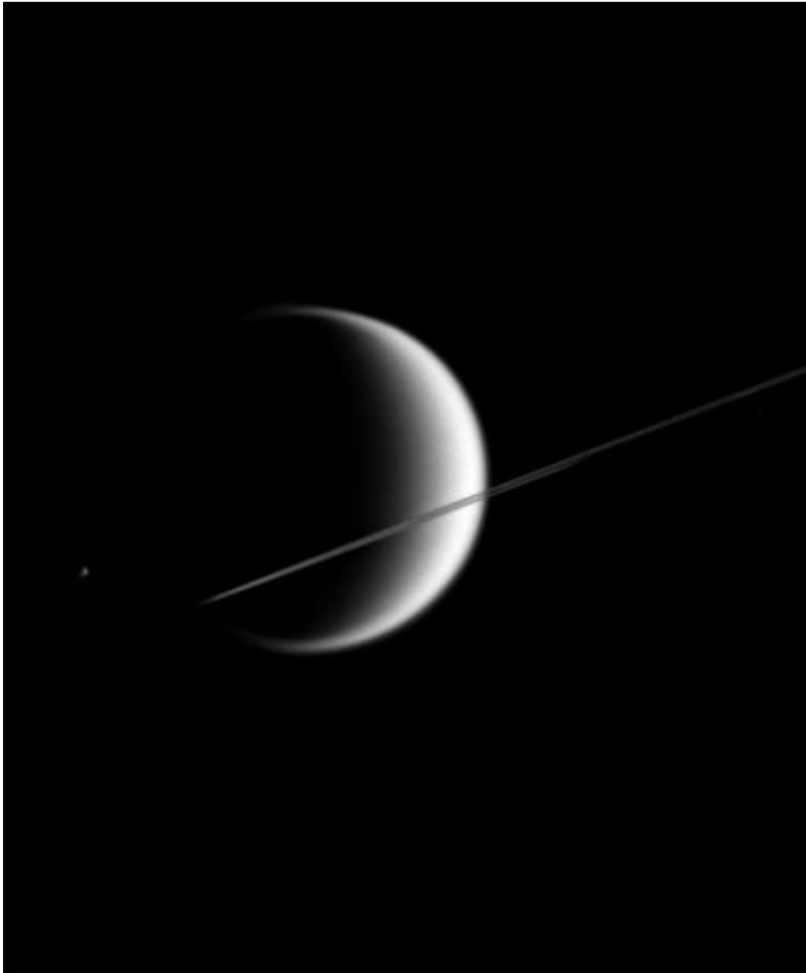
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What's on the Box

Nothing at all this month, but if you'd like TV listings for Astronomical related events for other channels aside from the 'Terrestrial' ones please let me know – Ed.

Crescent Titan with rings

Cassini Photo Release



Credit: NASA/JPL/Space Science Institute. Download larger image version here

This poetic scene shows the giant, smog-enshrouded moon Titan behind Saturn's nearly edge-on rings. Much smaller Epimetheus (116 kilometers, or 72 miles across) is just visible to the left of Titan (5,150 kilometers, or 3,200 miles across).

The image was taken in visible light with the Cassini spacecraft narrow-angle camera at a distance of approximately 4.1 million kilometers (2.5 million miles) from Titan. The image scale is 25 kilometers (16 miles) per pixel on Titan. The brightness of Epimetheus was enhanced for visibility.

Hubble snaps baby pictures of Jupiter's "Red Spot Jr."

Space Telescope Science Institute News Release



Credit: NASA, ESA, I. de Pater, and M. Wong (UC Berkeley) Download larger image version here

NASA's Hubble Space Telescope is giving astronomers their most detailed view yet of a second red spot emerging on Jupiter. For the first time in history, astronomers have witnessed the birth of a new red spot on the giant planet, which is located half a billion miles away. The storm is roughly one-half the diameter of its bigger and legendary cousin, the Great Red Spot. Researchers suggest that the new spot may be related to a possible major climate change in Jupiter's atmosphere.

Dubbed by some astronomers as "Red Spot Jr.," the new spot has been followed by amateur and professional astronomers for the past few months. But Hubble's new images provide a level of detail comparable to that achieved by NASA's Voyager 1 and 2 spacecraft as they flew by Jupiter a quarter-century ago.

Before it mysteriously changed to the same color as the Great Red Spot, the smaller spot was known as the White Oval BA. It formed after three white oval-shaped storms merged during 1998 to 2000. At least one or two of the progenitor white ovals can be traced back to 90 years ago, but they may have been present earlier. A third spot appeared in 1939. (The Great Red Spot has been visible for the past 400 years, ever since earthbound observers had telescopes to see it).

When viewed at near-infrared wavelengths (specifically 892 nanometers -- a methane gas absorption band) Red Spot Jr. is about as prominent in Jupiter's cloudy atmosphere as the Great Red Spot. This may mean that the storm rises miles above the top of the main cloud deck on Jupiter just as its larger cousin is thought to do. Some astronomers think the red hue could be produced as the spots dredge up material from deeper in Jupiter's atmosphere, which is then chemically altered by the Sun's ultraviolet light

Search for dark galaxies

Royal Astronomical Society News Release

First results from the Arecibo Galaxy Environment Survey (AGES) suggest the discovery of a new dark galaxy. The AGES survey, which started in January 2006, is the most sensitive, large-scale survey of neutral hydrogen to date. Neutral hydrogen is found in most galaxies and it is a key tool in the search for dark galaxies as it can be detected even when there are no stars or other radiation sources to "shine a light" on matter.

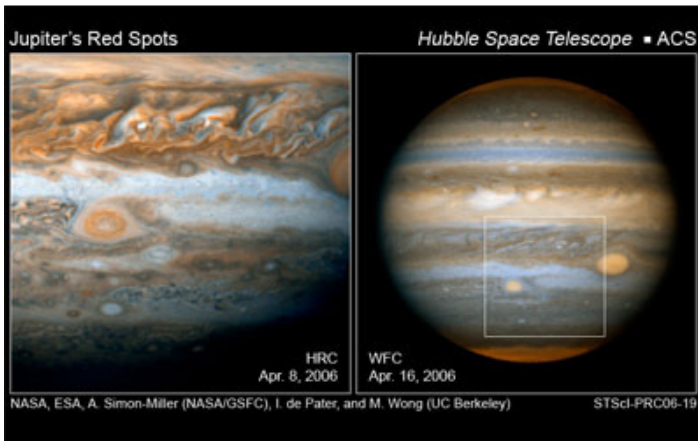
The new candidate dark galaxy is located near NGC1156, an apparently isolated, irregularly-shaped galaxy found at the edge of the Aries constellation. The first observations in the AGES programme identified a number of new galaxies. One newly discovered source is approximately 153 million light-years from Earth and appears to be 200,000 light-years across. There is no obvious optical counterpart to the massive object.

Robbie Auld, who presented the results at the RAS National Astronomy Meeting in Leicester said, "The new source showed up clearly in the AGES survey as it contains huge amounts of hydrogen gas but it was missed in all previous searches as it doesn't appear to contain many bright stars. The interactions between hydrogen atoms in cosmic gas clouds are enough to stimulate light emission at the neutral hydrogen "fingerprint" wavelength of 21cm. In the first stage of the AGES campaign, we have used the Arecibo radio telescope to search at this wavelength, looking for galaxies that have remained hidden from astronomers in the past. We now need to follow up observations at other wavelengths and work out exactly how many stars this new galaxy may or may not contain."

The AGES programme, which will last for four years, is led by Cardiff University's Dr Jonathan Davies. In addition to the Arecibo radio telescope, AGES will use a network of ground-based and space-based telescopes to observe the sky in many different wavelengths. Among those used will be the UK Infrared Telescope in Hawaii, the GALEX ultraviolet space telescope, the Hubble Space Telescope.

The techniques used in AGES have already been used on a small scale and have led to the discovery of VIRGOHI21, the first galaxy to be detected with gas, large amounts of the mysterious dark matter but no visible stars. By discovering more objects like VIRGOHI21 scientist hope to answer one of the greatest cosmological questions: if, as theoreticians predict, matter in the Universe is mainly dark then where does it all reside? The AGES team hopes that the survey will reveal exactly how much matter is hidden in dark galaxies and determine whether current theories are correct.

AGES is a sub-group of the Extragalactic Arecibo L-Band Feed Array (EALFA) consortium. The group aim to make use of the newly installed ALFA on the Arecibo Telescope to conduct medium-sensitivity observations of specific regions of interest on the sky, focussing on galaxy groups and individual galaxies.



Credit: NASA, ESA, A. Simon-Miller (NASA/GSFC), and I. de Pater (University of California Berkeley) Download larger image [here](#)

Researchers think the Hubble images may provide evidence that Jupiter is in the midst of a global climate change that will alter its average temperature at some latitudes by as much as 10 degrees Fahrenheit. The transfer of heat from the equator to the planet's south pole is predicted to nearly shut off at 34 degrees southern latitude, the latitude where the second red spot is forming. The effects of the shut-off were predicted by Philip Marcus of the University of California, Berkeley (UCB) to become apparent approximately seven years after the White Oval collisions in 1998 to 2000.

Two teams of astronomers were given discretionary time on Hubble to observe the new red spot.

[Left] -- This image, acquired April 8, 2006 with Hubble's Advanced Camera for Surveys (high-resolution channel), shows that the second red spot has a small amount of pale clouds in the center. A strong convective event, which is likely a thunderstorm, is visible as a bright white cloud north of the oval, in the turbulent clouds that precede the Great Red Spot. As the oval continues its eastward drift and the Great Red Spot moves westward, they should pass each other in early July. This contrast-enhanced image was taken in blue and red light. The group that performed this observation was led by Amy Simon-Miller (NASA Goddard Space Flight Center), Glenn Orton (Jet Propulsion Laboratory) and Nancy Chanover (New Mexico State University).

[Right] -- Hubble's Advanced Camera for Surveys (wide field channel) took this image of the entire disk of Jupiter on April 16. The second red spot appears at southern latitudes, below the center of Jupiter's disk. The new spot is approximately the size of Earth's diameter. The image was taken in visible light and at near-infrared wavelengths, and does not represent Jupiter's true colors. The red color traces high-altitude haze blankets: the equatorial zone, the Great Red Spot, the second red spot, and the polar hoods.

Diary

10th May	Our Vital Moon - Robin Gorman
14th June	Peculiar Stars & Lick Observatory Visit in California - Dr Mike Dworetzky F.R.A.S., University College London
12th July	Venus Express - Andrew Coates
13th September	Sir Arthur Stanley Eddington -Mark Hurn
11th October	AGM & Members Contributions
8th November	Campaign for Dark Skies – Update - Bob Mizon
13th December	TBA

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 find us on the Internet at www.was.org.uk or email: chairman@was.org.uk

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

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