



WAS NEWS

Monthly Newsletter of the Worthing Astronomical Society

Official website: www.was.org.uk

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



Number 150

February 2001

ALMANAC

All times U.T.
Feb / March

		LUNAR			
February	Date	Time	rise	set	
Last Quarter	4th	13.33	00.28	10.44	
New moon	12th	07.41	07.58	17.09	
First Quarter	20th	12.02	10.16	01.09	
Full Moon	27th	09.17	17.44	07.25	
March					
Last Quarter	6th	01.24	** **	09.09	
New moon	14th	02.02	06.58	18.23	
First Quarter	22nd	02.28	10.03	02.28	
Full Moon	28th	18.25	18.06	06.08	

15th	10	Venus 4° N. of moon
18th	03	Mars 4°N. of moon
20th	10	Saturn 0.4° S. of moon
20th	15	Pluto at stationary point
22nd	12	Jupiter 1° S. of moon

Minima of Algol

		Feb.	14th 00.00	16th 20.48
March	3rd 04.54	6th 01.42	8th 22.30	11th 19.24

Lunar Occultations

Times as at W.A.S. Observatory

Date	U.T.	S.A.O.No	Mag	Phase
Feb.	h. m. s.			
15th	18.56.54	128739	7.6	diss
16th	18.57.51	109684	8.4	diss
17th	18.55.02	110164	8.5	diss
17th	19.17.22	110165	8.7	diss
18th	19.13.52	93027	8.6	diss
20th	22.00.05	93873	8.1	diss
20th	22.41.56	93887	8.5	diss
21st	22.12.03	77057	6.1	diss
22nd	00.02.52	77097	5.1	diss
22nd	18.07.54	77971	6.8	diss
22nd	18.52.38	78005	8.2	diss
22nd	19.13.12	78010	8.1	diss
22nd	20.26.11	78067	8.8	diss
22nd	21.51.45	78119	8.4	diss
22nd	22.31.47	78122	8.0	diss
22nd	23.32.59	78176	6.2	diss
23rd	00.27.34	78210	6.6	diss
23rd	20.46.42	79162	5.7	diss
23rd	20.51.49	79176	8.9	diss
23rd	21.24.20	79190	8.6	diss
23rd	21.29.48	79196	8.9	diss
23rd	21.34.33	79194	8.6	diss
23rd	21.56.58	79214	8.2	diss
23rd	22.33.15	79236	8.4	diss
March				
1st	22.57.22	139229	7.5	reapp
2nd	00.27.30	139252	8.9	reapp
2nd	00.33.23	139253	9.0	reapp
2nd	00.34.54	139255	9.3	reapp
2nd	00.52.57	139259	9.0	reapp
5th	03.13.30	159682	2.9	reapp
5th	03.13.30	159683	5.0	reapp

This is only about 20% of the predictions for the W.A.S. observatory. Please note the change to **Smithsonian Astrophysical Observatory** star catalogue = S.A.O. I hope this will be of more use to members.

EARTH

February	Sunrise	Sunset
4th	07.34	16.55
12th	07.20	17.10
20th	07.05	17.24
27th	06.50	17.37
March		
6th	06.35	17.49
14th	06.17	18.03
22nd	05.59	18.16
28th	05.45	18.27

PLANETS

(as at February 27th.)

	Constellation	Rises	Sets	Mag.
Mercury	Capricornus	06.04	15.07	0.0
Unfavourable				
Venus	Aquarius	07.20	18.33	-3.9
Visible in the West south west just after sunset				
Mars	Aries	08.19	22.19	+1.3
Visible in the Southwest				
Jupiter	Gemini	11.45	04.12	-2.5
Visible in southern skies				
Saturn	Taurus	10.10	01.54	0.0
Visible in southern skies				
Uranus	Capricornus	06.32	16.20	+5.9
Unfavourable				
Neptune	Capricornus	05.51	14.52	+8.0
Unfavourable				
Pluto	Ophiuchus	01.46	11.41	+13.8
Early morning object				

PHENOMENA

Day	Hour	February
13th	17	Uranus in conjunction
17th	04	Mars 5° N. of moon
21st	00	Saturn 0.2° S. of moon
21st	16	Mercury at greatest elongation W. 27°
23rd	02	Jupiter 0.9° S. of moon
		March
1st	15	Jupiter at stationary point
12th	03	Mercury 3° N. of moon

Editors Note

Good Day one and all, as we settle into 2002 check out the Diary for updated information on the first half of this years events, some great lectures coming up, I'm sure you'll agree.

Also prepare for the WAS Library Offensive, tasked with boldly liberating overdue library books.

That's it for this month.

Rob

Reports

The Planets February 2002

Glen Thomas

Mercury is a difficult morning object, favourable only in the southern hemisphere, but may still be seen after the middle of the month if you have a clear eastern horizon. Maximum elongation from the Sun is on the 21st.

Venus is close to the Sun and unsuited for observation this month.

Mars continues to recede but remains relatively high in the sky early in the evening. The planet is now noticeably gibbous, with one limb looking less sharp than the other.

Jupiter is high in the sky sooner in the evening giving those with telescopes a chance to show off this magnificent object to the uninitiated. The Moon occults Jupiter at 2:55 on the morning of the 23rd. It reappears at 3:39, but by then Jupiter is only at an altitude of 5½ degrees and will be difficult to observe.

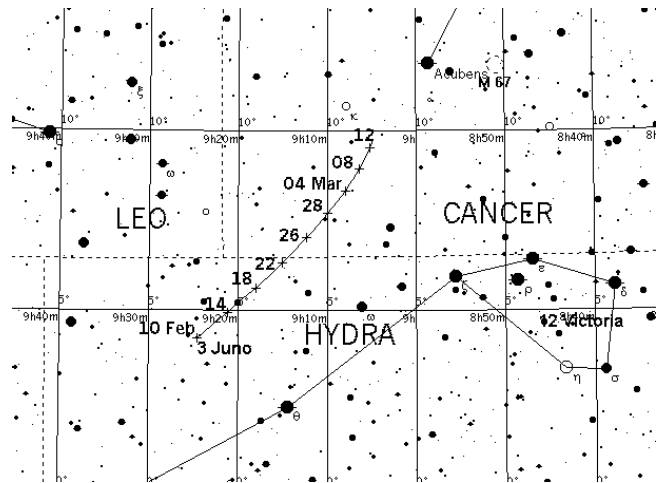
Saturn is also high in the sky and is showing off her rings to great advantage, extending above and below the poles. Saturn's largest moon, **Titan**, will be about four Saturn diameters south on 17 Feb and 5 Mar and north on 25 Feb.

Uranus reaches conjunction on the 13th with **Neptune** nearby, making both these giant planets unobservable this month.

Pluto is a morning object in Ophiuchus, but does not get very high in the sky before the dawn twilight arrives. Wait until easier conditions around opposition in the summer.

3 Juno reaches opposition on the 11th and may be seen with binoculars as it passes through Hydra and Cancer

this month. On the night of 27/28 Feb it passes within 20' NE of the 10th magnitude galaxy NGC 2775. Juno is the brightest object in the same low power telescope field as the galaxy. Moving at 1 deg per day Juno will show movement between the start and finish of an observing session. (See the finder chart. Positions shown for 10pm each evening.)



9 Metis is a more difficult asteroid at magnitude 8.6, passing more slowly ½ deg to the SW of tau Geminorum around 15 - 25 Feb.

Solar Section Report - January 2002

Section Director, Brian Halls

The Sun remains an interesting object to observe in the daytime sky. Sunspot activity continues – assortments of groups were seen on the Sun during the month.

The first week saw a large number of groups of different types – A class spots being the smallest and simplest; while D, E and F class groups are larger and more complex.

Activity in these spots was more or less equally distributed between the northern and solar hemispheres. Sunspot region 9767 (S22° L=017° Fki-class) was the largest group of spots on the Sun during the first week – it reached F-class on January 4 and spread over 17° of solar longitude and remained like this over the next several days. It began to decay just prior to its disappearance over the western solar limb on January 11.

This region was not the only large active area of its type on the Sun though; region 9773 (N15° L=324°) evolved from an E to F class group. It was magnetically very active as were two other sunspot groups also visible at the same time - 9775 (S05° L= 311°) and 9778 (S16° L=260°) during much of the second week of the month.

There was a slight down turn in sunspot activity during the third week – activity also tended to be much more concentrated in the southern solar hemisphere. This however changed as the northern hemisphere became more active – though the quality of sunspots was less – many D and H class groups taking the stage.

Region 9787 (S07° L=130°) was one of the largest evolving groups on the Sun at this time however, it was considered a ‘quiet’ region, changing very little in size during much of its progress across the solar disk until it disappeared over the western limb on January 30.

During the last week of the month there were two groups sufficiently large enough to be naked-eye groups – region 9800 (N07° L= 047°) being the largest, complex and magnetically active and, 9802 (S17° L=021°) smaller than 9800 but equally magnetically active.

Members of the Society observed the Sun on a total of 15 days in January. Reports were received from Graham Boots, Nick Quinn and, the director.

MDF= 8.96

Sunspot Number – R= 123.73

Notices

Christmas Quiz for WAS NEWS - Answers

Name these astronomers or space scientist’s and the books in which they appear:

1. The headstrong woman astronomer received radio instructions from the vicinity of the star Vega, to construct a device to traverse space. Answer: Eleanor Arroway, *CONTACT* by Carl Sagan
2. This scientist was confronted with what he at first thought was a ghost of an astronaut who had disappeared on a space mission 10 years previously – but he was not a ghost – however he had an important message for the scientist and mankind. *Hayward Floyd, 2010* by Arthur C Clarke
3. Some considered this space scientist crazy, but he built a rocket to intercept a planet coming into the solar system; his two unwitting companions went into space with him and came face to face with a mad Emperor. *Hans Zarkov, FLASH GORDON* by Alex Raymond

4. “The chances against anything man-like on Mars are a million to one” were the words of this Victorian astronomer. Sadly, the inhabitants of Woking were to find out how incorrect he was. *Ogilvy, WAR OF THE WORLDS* by H G Wells

Library Book Amnesty



Are YOU a secret WAS library book holder?
 Have YOU forgotten to return something overdue?
 Are YOU now too embarrassed to do so?
 Search those cupboards, scour those bookshelves
Library book amnesty starts March 13th for one month only.

Watch this space next month for embarrassing revelations - The Name & Shame Offensive!

What’s on the Box

Monday 18th February 2002

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02:30 - 03:25 ~ Destination Mars
 Documentary series about the history of exploration of Mars, including an account of how scientists are building their own version of Mars on Earth so they can prepare the first explorers. This second programme looks at the potential problems of long-duration space flight, and how to keep astronauts physically and mentally fit in order for them to survive the unfamiliar environment of the Red Planet

WAS News News

Impressive new images released of Saturn and Io

European Southern Observatory News Report

With its new NAOS-CONICA Adaptive Optics facility, the ESO Very Large Telescope (VLT) at the Paranal Observatory has recently obtained impressive views of the giant planet Saturn and Io, the volcanic moon of Jupiter.

They show the two objects with great clarity, unprecedented for a ground-based telescope. The photos were made during the ongoing commissioning of this major VLT instrument, while it is being optimised and prepared for regular observations that will start later this year.

"First light" for the new NAOS-CONICA Adaptive Optics facility on the 8.2-m VLT YEPUN telescope at the Paranal Observatory was achieved in November 2001. A second phase of the "commissioning" of the new facility began on January 22, 2002, now involving specialized observing modes and with the aim of trimming it to maximum performance before it is made available to the astronomers later this year.

During this demanding and delicate work, more test images have been made of various astronomical objects. Some of these show selected solar system bodies, for which the excellent image sharpness achievable with this new instrument is of special significance. In fact, the VLT photos of the giant planet Saturn and Io, the innermost of Jupiter's four large moons, are among the sharpest ever obtained from the ground.

The NAOS adaptive optics corrector was built, under an ESO contract, by the Office National d'Etudes et de Recherches Aérospatiales (ONERA), Laboratoire d'Astrophysique de Grenoble (LAOG) and the DESPA and DASGAL laboratories of the Observatoire de Paris in France, in collaboration with ESO. The CONICA infrared camera was built, under an ESO contract, by the Max-Planck-Institut für Astronomie (MPIA) (Heidelberg) and the Max-Planck Institut für Extraterrestrische Physik (MPE) (Garching) in Germany, in collaboration with ESO.

The NAOS/CONICA image of Saturn, the second-largest planet in the solar system, was obtained at a time when Saturn was close to summer solstice in the southern hemisphere. At this moment, the tilt of the rings was about as large as it can be, allowing the best possible view of the planet's South Pole. That area was on Saturn's night side in 1982 and could therefore not be photographed during the Voyager encounter.



The giant planet Saturn, as observed with the VLT NAOS-CONICA Adaptive Optics instrument on December 8, 2001; the distance was 1209 million km. It is a composite of exposures in two near-infrared wavebands (H and K) and displays well the intricate, banded structure of the planetary atmosphere and the rings. Note also the dark spot at the south pole at the bottom of the image. One of the moons, Tethys, is visible as a small point of light below the planet. It was used to guide the telescope and to perform the adaptive optics "refocusing" for this observation. Photo: European Southern Observatory

The dark spot close to the South Pole is a remarkable structure that measures approximately 300 km across. It was only recently observed in visible light from the ground with a telescope at the Pic du Midi Observatory in the Pyrenees (France) - this is the first infrared image to show it.

The bright spot close to the equator is the remnant of a giant storm in Saturn's extended atmosphere that has lasted more than 5 years.

The present photo provides what is possibly the sharpest view of the ring system ever achieved from a ground-based observatory. Many structures are visible, the most obvious being the main ring sections, the inner C-region (here comparatively dark), the middle B-region (here relatively bright) and the outer A-region, and also the obvious dark "divisions", including the well-known, broad Cassini division between the A- and B-regions, as well as the Encke division close to the external edge of the A-region and the Colombo division in the C-region. Moreover, many narrow rings can be seen at this high image resolution, in particular within the C-region - they may be compared with those seen by the Voyager spacecraft during the flybys.

This image demonstrates the capability of NAOS-CONICA to observe also extended objects with excellent spatial resolution. It is a composite of four short-exposure images taken through the near-infrared H (wavelength 1.6 μm) and K (2.2 μm) filters.

Diary

February 23 - SAGAS Meeting, Stockbridge Hall, Stockbridge Road, Chichester. 14.00. Croydon AS in chair. Talk, *Eyes on the Universe* by John Murrell.

February 23 - BAA Comet Section Meeting 11.00 followed by BAA Ordinary Meeting at 14.30. Speakers, Dr David Whitehouse *Biography Of the Moon* and Melvyn Taylor *Variable Stars*. Scientific Societies' Lecture Theatre, 23 Savile Row.

March 13 *The Aurora*, by Neil Bone (South Downs AS, Astronomy Now) 19.30, Heene Church Rooms, Heene Road, Worthing.

April 2-4 *Third Annual British Rocketry Oral History Project (BHOHP)* Conference, Charterhouse School. (More details at BROHP@aol.com)

April 10 *The Planet Vulcan*, by Dr David Brand. 19.30, Heene Church Rooms, Heene Road, Worthing.

May 8 *White Dwarfs*, by Konrad Malin-Smith FRAS (Croydon AS), 19.30, Heene Church Rooms, Heene Road, Worthing.

July 13 Summer SAGAS Meeting, Portsmouth Naval Base, Hampshire. *More details to follow.*

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 **March** issue of WAS NEWS should be with the Editor by **March 1st**, all material for inclusion should be sent to the Editor.

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