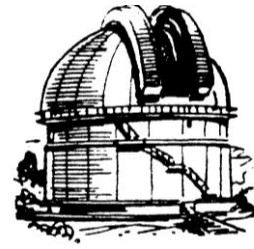

Journal

of the



Nottingham Astronomical Society

February 2002

Inside this issue

- Sky Notes for February 2002
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Thursday 7 February

Doors open 7.30pm

Astrophotography – A Personal Adventure

is the title of the evening's talk, and we are pleased to welcome our guest speaker

Mark Thomas

Secretary of

Ilkeston & District Astronomical Society

Next meetings...

At our meeting on 7th March at Djanogly CTC we welcome back Professor Michael Merrifield, who will speak on the topic of "**Astronomy at the University of Nottingham**". Before then, we have an informal meeting on 21st February at the home of Stuart Atkin. Full details are in "Diary Dates" inside this issue of the Journal.

The Society's Annual Dinner

Don't forget that the Society's annual dinner takes place on **Tuesday 19th March**. (meet 6.00 for 6.30pm meal) at New College Nottingham (formerly Clarendon College). The cost is £10.50 and a sample menu is available from David Lukehurst.

SKY - NOTES FOR FEBRUARY

Brian Griffin
Director of Observing



SOLAR & PLANETARY DATA

Object Visibility	Date	R.A. h m	Dec ° '	mag	dia "	Elong. / Constellation /
Sun	Feb 5	21 14	-16 02			
	15	21 54	-12 48			
	25	22 32	- 9 14			
Mercury	Feb					Poorly placed as a morning object
Venus	Feb					Poorly placed as an evening object
Mars	Feb 5	00 46	+ 4 49	+1.1	5.3	evening sky , SW, Pisces
	25	01 39	+10 29	+1.2	4.9	evening sky , SW, Pisces
Jupiter	Feb 5	06 29	+23 22	-2.6	45x42	evening sky , S , Gemini
	25	06 25	+23 26	-2.4	43x40	evening sky , S , Gemini
Saturn	Feb 5	04 26	+20 01	0.0	17.5	evening sky , S , Taurus
	26	04 27	+20 08	+0.1	16.9	evening sky , S , Taurus
Uranus	Feb					Too close to the Sun for observation
Neptune	Feb					Too close to the Sun for observation

LUNAR DATA

<u>Phases</u>	February	Last Qtr : 4d 14h	New : 12d 08h
		First Qtr : 20d 12h	Full : 27d 09h
<u>Apsides</u>	February	Apogee : 14d	Perigee : 27d

OCCULTATION OF JUPITER

On the morning of February 23 (Saturday) the Moon will occult the planet Jupiter.
(Remember to mark your diary for Friday). Details are given below:

Disappearance: Between 02h 50m 20s and 02h 51m 40s Azimuth: 291°, Altitude: 14°
Reappearance: Between 03h 36m 35s and 03h 37m 50s Azimuth: 302°, Altitude: 6°

The phase of the Moon is about 3 days after First Quarter.

Note: Jupiter takes just over one minute to disappear behind the Moon and about the same time to reappear again.

Unfortunately the event takes place at a very low altitude, and will require an unobstructed NW horizon for viewing.

RISING AND SETTING TIMES (UT)

January 31/February 1

Sun set	16h 40m
Neptune sets	16 40
Venus sets	17 00
Uranus sets	17 55
Mars sets	22 15
Saturn sets	03 40
Jupiter sets	06 10
Mercury rises	07 00
Neptune rises	07 35
Sun rise	07h 50m

February 28/March 1

Sun set	17h 35m
Venus sets	18 40
Mars sets	22 20
Saturn sets	01 40
Jupiter sets	04 10
Neptune rises	05 40
Mercury rises	06 05
Uranus rises	06 20
Sun rise	06h 50m

Dark Sky Scene

Christine Wells

Since I took over as Dark Skies Officer, I have done a little national research using the Internet, and have made contact with Bob Mizon who is the CfDS coordinator. He has sent me useful information and updates and made suggestions which the Society could follow. As a result I am ordering the bi-annual newsletter for the society, to enable us to keep abreast of latest developments and opportunities. I have also agreed to be a “correspondent” on their website contacts list, as someone who can give or receive information, although not as an active “local officer”.

To remind you, legally there is little redress for intrusive and injurious lighting, and there is still not a system of proper regulation of lighting. This means that we are all acting under goodwill, although some recent rulings by judges, whilst not necessarily setting legal precedents, offer hope that offensive light may soon be regarded as a nuisance in law. Until then it is a steady drip process to persuade and not to coerce. Hope is offered by the slow but sure change in the attitude of the Department of the Environment, Food and Rural Affairs, which is the controlling body. A recent lighting industry meeting attended by CfDS succeeded in raising the profile to government representatives of excessive lighting as an environmental problem.

So what can we do locally? There is a big recent problem with security lighting, and also with increased inner city lighting provision. This has all to do with a perception that crime can be displaced, or reduced by powerful illumination. Whether this is a reality or not remains to be proven by statistics and research. Some say that the best friend of the modern burglar is the sideways pointing 500 watt “security” light, emitting a dazzling glare, behind which he can work unseen. Some crime prevention officers assure us that petty criminals prefer to work in daylight and crowds, where they are relatively inconspicuous. However large sums are currently being spent on improved lighting in inner city areas of Nottingham, to address the concerns of the residents about the antisocial activities which are taking place daily.

The CfDS while campaigning for the right of all to be able to view the universe, has never advocated switching off anybody’s lights, but rather “the right amount, directed where needed”, and this is the message which needs to come across to local authorities. It is a fact that streetlights waste about £53 million every year, quite apart from private lighting. These then are some of the measures that the Society can take to contribute to the Campaign:-

- Promote and publicize the above attitudes whenever possible
- Note examples of lighting “above the horizontal” or otherwise intrusive. These examples can be notified to me, although I am unlikely to be able to act in individual cases
- Tell friends and neighbours about light pollution. I have asked for some explanatory leaflets.
- Involve the local press in particularly bad instances.
- Support the CfDS with donations, however small, as they do work on behalf of all of us.

At the present time I am not in a position to report on the practices and attitudes of our local authorities, although I am aware that my predecessor Greg made many representations on behalf of Astronomers. I promise to keep you informed as far as I am able. Meanwhile – Make a noise, and be persistent!

DIARY DATES, by Carl Brennan

FUTURE MEETINGS OF THE NOTTINGHAM ASTRONOMICAL SOCIETY

2002

February 7th Djanogly C.T.C.

Doors open from 7.30pm

ASTROPHOTOGRAPHY – A PERSONAL ADVENTURE

Talk by Mark Thomas, Secretary of
Ilkeston & District Astronomical Society

February 11th (MONDAY)

Committee Meeting,

usual venue 7.30pm

February 21st

Informal Meeting

At the home of Stuart Atkin
356 Loughborough Road,
West Bridgford
7.30pm until 9.00pm

March 7th Djanogly C.T.C.

Doors open from 7.30pm

ASTRONOMY AT THE UNIVERSITY OF NOTTINGHAM: FROM TEN INCHES TO TEN METRES, AND EVERYTHING IN BETWEEN

Professor Michael R. Merrifield
BA (Oxon), AM, PhD (Harvard)

March 19th (TUESDAY)

ANNUAL SOCIETY DINNER

Meet 6.00 for 6.30pm meal at

New College Nottingham

(what used to be Clarendon).

Price £10.50 – sample menu with

El Presidente, other details from

Peter Davison

September 5th Djanogly C.T.C.

Doors open from 7.30pm

THE HUMANIZATION OF SPACE

Talk by Dr. Michael Martin-Smith, author
and member of Hull Astronomical Society

OTHER EVENTS

8th & 9th February (Friday & Saturday)

AstroFest takes place at the usual venue
of Kensington Town Hall.

23rd February

Open Evening Sherwood Observatory,
Coxmoor Road, Sutton-in-Ashfield, Notts.
Open from 7.30pm, (£1.50 Adults, £1.00
Juniors) **Wear warm clothing!**

23rd March

Open Evening Sherwood Observatory,
Coxmoor Road, Sutton-in-Ashfield, Notts.
Open from 7.30pm, (£1.50 Adults, £1.00
Juniors) **Wear warm clothing!**

**11th May Ilkeston & District Astronomical
Society** Celebrates its' 10th Anniversary with a one
day convention. To be held at Heanor Welfare
Centre, Wilmot Street, Heanor. Advance tickets
are £5.00. Make cheques out to "Ilkeston and
District Astronomical Society", and send them to
Harry Bingham, 38 Broadway, Heanor,
Derbyshire, DE75 7GW.

Nottingham Astronomical Society

The Secretary compiles these Diary Dates.

Contributions are always welcome (please include
source acknowledgement). Nottingham
Astronomical Society, and/or the Secretary accept
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or Members.

SPACECRAFT NEWS (19/01/02)

Mars Odyssey

January 11, 2002

Flight controllers for NASA's Mars Odyssey spacecraft sent commands overnight to raise the spacecraft up out of the atmosphere and conclude the aerobraking phase of the mission.

At 12:18 a.m. Pacific time Jan. 11, Odyssey fired its small thrusters for 244 seconds, changing its speed by 20 metres per second (45 miles per hour) and raising its orbit by 85 kilometres (53 miles). The closest point in Odyssey's orbit, called the periapsis, is now 201 kilometres (125 miles) above the surface of Mars. The farthest point in the orbit, called the apoapsis, is at an altitude of 500 kilometres (311 miles). During the next few weeks, flight controllers will refine the orbit until the spacecraft reaches its final mapping altitude, a 400-kilometre (249-mile) circular orbit.

During the next month there will be a reconfiguring of the spacecraft orbit to begin the science mapping mission. This part of the mission is expected to begin in late February.

During the aerobraking phase, Odyssey skimmed through the upper reaches of the martian atmosphere 332 times. By using the atmosphere of Mars to slow down the spacecraft in its orbit rather than firing its engine or thrusters, Odyssey was able to save more than 200 kilograms (440 pounds) of propellant. This reduction in spacecraft weight enabled the mission to be launched on a Delta II 7925 launch vehicle, rather than a larger, more expensive launcher.

Galileo

17 January, 2002

The Galileo flight team at JPL aimed the orbiter to skim just 100 kilometres (62 miles) above Io's multicoloured surface at 14:09 Universal Time (6:09 a.m. Pacific Standard Time) on Jan. 17. The reason for going so close was to put Galileo on a ballistic trajectory for impact into Jupiter in September 2003.

Galileo has operated in orbit more than three times longer than its originally planned mission. The resilient spacecraft has survived about three and a half times as much exposure to radiation from Jupiter's radiation belts as it was designed to withstand. In its 33 loops around Jupiter, it has flown near Io six times previously and near the other three of Jupiter's planet-sized moons - Europa, Ganymede and Callisto - a total of 27 times.

18 January, 2002

The spacecraft put itself in to a safe mode about 28 minutes before the closest approach to Io and cancelled the science sequence. The flight team worked throughout the day and evening to re-establish nominal spacecraft operations. Unfortunately, all planned data for recording within hours of closest approach to Io were lost because of the spacecraft problem.

Galileo has now receded to 552,300 km (343,000 miles) from Jupiter and is increasing that distance by 12 kilometres every second. At its closest approach point, the spacecraft was 324,800 km (201,800 miles) above Jupiter's cloud tops.

The propellant supply needed for steering the spacecraft and keeping its antenna pointed toward Earth is now nearly exhausted. To avoid even a slim chance that Galileo could crash into Europa after its mission ends, NASA has decided to send it to a controlled demise in the crushing pressure of Jupiter's dense atmosphere.

Before its final plunge, Galileo will make the first close flyby of Amalthea, a small, inner moon of Jupiter, in November 2002.

(After this close flyby of Io it was the intention to switch off the imaging camera. However, the Sky and Telescope web site suggests that images will be taken during the close flyby of Amalthea in November, 2002. Perhaps NASA have had a change of heart on this matter. A large proportion of the Io encounters have resulted in the spacecraft going in to safe mode and losing data. Therefore it may be that NASA have decided that there is nothing to lose by keeping the imager switched on and hoping for the best. - BG)

Extracts from JPL/NASA web sites.

Brian Griffin

Best of the Web

Graham Shepherd of Mansfield & Sutton AS has passed on a couple of sites.

Recent newspapers carried this story, perhaps members would like some facts? Graham writes "The NEA 2001 YB5 discovered with NEAT on 26 December 2001 sped within ~2 lunar distances of the Earth on 7 January 2002. Read/see more images at:

<http://neat.jpl.nasa.gov/>

The NAS' heritage includes strong links with Calver optics. NAS members may well be interested, therefore, in the following site. Chris Lords' observatory has a working example. Read about it on:

<http://www.bravebrookobservatory.org>

This site will be of special interest to telescope makers, and some older members of the society who know some of the history of our own 8 1/2 reflector.

Small advertisements

David Lukehurst

Astronomical Telescope Maker

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Newtonians

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12-inch f/6 truss-tube Dobsonian
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Ronchi testing eyepieces (50 or 100 lpi)
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For details & price list:

Tel: 0115 9602266

e-mail: gildor@ntlworld.com

"Small Ads" in the NAS Journal

The Journal can accept small advertisements, as long as they relate in some way to astronomy or space science.

NAS Members' advertisements of up to 50 words are accepted free of charge.

Advertisements of a commercial nature are accepted at a cost of £1 per issue or £10 for the year (11 issues).

All advertisements are accepted at the discretion of the Journal Editor.

Please send your advertisement to the Journal Editor.

Cheques in payment for commercial advertisements should be made payable to "Nottingham Astronomical Society" and sent to the Treasurer.

The Widescreen Centre

18, LADY BAY ROAD ,Nottingham, NG2 5BJ

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Nottingham Astronomical Society

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APPLICATION FOR MEMBERSHIP

If you would like to join the Nottingham Astronomical Society, please complete and tear off this slip.

Make your cheque/postal order payable to: **THE NOTTINGHAM ASTRONOMICAL SOCIETY**

Then send the slip and payment to Carl Brennan, Hon. Secretary, Nottingham Astronomical Society, 40 Swindon Close, The Vale, Giltbrook, Nottingham NG16 2WD.

Alternatively you may hand the slip and payment to the Secretary or Treasurer at one of the Society's regular meetings.

Your name _____

Full address _____

Postcode _____

I wish to join the Nottingham Astronomical Society and enclose the membership fee for
(please tick appropriate box)

- Full Adult £22
- Junior (17 years or under) £11
- Concession (full time student, UB40, Senior Citizen) £11

Nottingham Astronomical Society

Affiliated to the British Astronomical Association
Member of the Federation of Astronomical Societies
Member of the Society for Popular Astronomy
Supporters of the Campaign for Dark Skies
Registered Charity No: 1066645

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Meetings

Formal monthly meetings, with speakers, are held on the first Thursday of each month (except August) at

Djanogly City Technology College

Sherwood Rise, Nottingham NG7

Doors open	7.30pm
Meetings Start	7.45pm
Meetings end	10.00pm

Non-members are very welcome at our meetings and there is no charge for the first meeting. We make a small charge of £2.50 adults, £1.25 juniors to non-members after their first attendance. Invited guests are admitted free of charge.

Annual Subscriptions, 2001-02

Full Adult:	£22
Junior (17 years or under)	£11
Concessions	£11

(Full time student, UB40, Senior Citizens)

Subscriptions become due at the October AGM. Half-price subscription is charged if joining after 1st April. Please make cheques payable to:
Nottingham Astronomical Society.

Saturday Night Observing Sessions

These are dependent on suitable sky conditions. Please phone either:

Brian Griffin 0115 929 8364, or

Robin Gray 0115 965 6340

approximately one hour before sunset on Saturday evenings, to check if the observing site will be open. (Sunset times are in **Sky Notes**.)

If you would like further information about the Nottingham Astronomical Society, or would like to become a member, please

- contact the Honorary Secretary, Carl Brennan, at the address given above or
- speak to any NAS committee member at one of the regular monthly meetings.

A membership application form appears inside this issue of the Journal.
