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# Journal

of the

## Nottingham Astronomical Society

November 2001

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*Thursday 1 November 2001,  
doors open from 7.30pm*

## The latest from Sherwood Observatory

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

**Mr. Graham Shepherd**  
Secretary of  
Mansfield & Sutton Astronomical Society

### **A packed Journal!**

Some of the usual formatting is missing from the Journal this month. There are so many items to publish, I had to find ways of reducing the file size to avoid a lengthy download when the Journal is e-mailed! My thanks to the contributors for making this issue one of the biggest and best yet.

### **The Journal by e-mail**

Distribution of the Journal by e-mail is becoming increasingly popular, and many NAS members now receive their Journal every month by this method.

NAS Secretary Carl Brennan keeps the Society's e-mail distribution list. If you have e-mail and a printer with which to print-out your copy, and you would like to join the e-mailing list, please send your e-mail address to [carl.stella@virgin.net](mailto:carl.stella@virgin.net) When writing to Carl, please make it clear that you wish to receive the NAS Journal by e-mail.

***The Editor***

# SKY - NOTES FOR NOVEMBER

Brian Griffin  
Director of Observing

## SOLAR & PLANETARY DATA

Object Visibility	Date	R.A.		Dec		mag	dia "	Elong. / Constellation /
		h	m	°	'			
Sun	Nov 2	14	29	-14	42			
	12	15	09	-17	39			
	22	15	50	-20	06			
Mercury	Nov 2	13	24	- 6	27	-0.7	6.3	morning twilight , 18° , SE
	7	13	50	- 9	11	-0.8	5.7	morning twilight , 16° , SE
	12	14	19	-12	12	-0.8	5.3	morning twilight , 13° , SE
Venus	Nov 7	13	46	- 9	26	-3.8	10.4	morning twilight , 17° , SE
	27	15	24	-17	39	-3.8	10.0	morning twilight , 12° , SE
Mars	Nov 7	20	40	-20	23	+0.1	8.4	evening sky , SW, Capricornus
	27	21	37	-15	46	+0.4	7.5	evening sky , SW, Capricornus
Jupiter	Nov 7	07	08	+22	25	-2.5	43x40	evening sky , NE , Gemini
	27	07	04	+22	33	-2.6	45x42	evening sky , NE , Gemini
Saturn	Nov 7	04	50	+20	34	-0.1	18.5	evening sky , E , Taurus
	27	04	43	+20	23	-0.2	18.7	evening sky , E , Taurus
Uranus	Nov 15	21	34	-15	11	+5.7	3.9	evening sky , SW, Capricornus
Neptune	Nov 15	20	34	-18	36	+7.8	7.8	evening sky , SW, Capricornus

## LUNAR DATA

Phases November Full : 1d 06h Last Qtr : 8d 12h  
New : 15d 07h First Qtr : 22d 23h  
Full : 30d 21h

Apsides November Perigee : 11d Apogee : 23d

## OCCULTATIONS

The Moon will occult the planet Saturn on the 3 Nov and 1 Dec (the December event is before the December Meeting). Details are given below (times to the nearest 5s);

### Occultation of Saturn on 3 November

Age of Moon: 2-days after Full

Disappearance	First contact with ring	21h 06m 40s (UT)
	First contact with globe	21h 07m 00s
	Last contact with globe	21h 07m 40s
	Last contact with ring	21h 08m 00s

Moon: Azimuth 89° (due East) Altitude 26°

Reappearance	First contact with ring	22h 01m 40s (UT)
	First contact with globe	22h 02m 05s
	Last contact with globe	22h 02m 45s
	Last contact with ring	21h 03m 10s

Moon: Azimuth 101° Altitude 34°

### Occultation of Saturn on 1 December (remember to mark diary for 30 November)

Age of Moon: Full

Disappearance	First contact with ring	02h 20m 25s (UT)
	First contact with globe	02h 20m 50s
	Last contact with globe	02h 21m 40s
	Last contact with ring	02h 22m 05s

Moon: Azimuth 231° (South West) Altitude 48°

Reappearance	First contact with ring	03h 30m 25s (UT)
	First contact with globe	03h 30m 50s
	Last contact with globe	03h 31m 30s
	Last contact with ring	03h 32m 00s

Moon: Azimuth 250° Altitude 39°

## METEOR SHOWER

Leonids	Activity from Nov 15d - 20d ZHR: 100 - 500 (???) Conditions: Very Favourable Age of Moon: 2 days	Max activity: Nov 17d 14h Radiant: Sickle of Leo
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The Leonids prove hard to predict, only time will tell if the ZHR above materialises.

## RISING AND SETTING TIMES (UT)

### October 31/November 1

Sun set	16h 35m
Saturn rises	18 05
Jupiter rises	20 05
Mars sets	21 45
Neptune sets	22 15
Uranus sets	23 35
Venus rises	05 10
Mercury rises	05 10
Sun rise	07h 00m

### November 30/December 1

Sun set	15h 50m
Saturn rises	16 00
Jupiter rises	18 10
Neptune sets	20 20
Uranus sets	21 45
Mars sets	21 50
Venus rises	06 50
Mercury rises	07 40
Sun rise	07h 50m

## EXTRAORDINARY MEETING NOTICE

Notice is hereby given that the executive committee of the Nottingham Astronomical Society called for an Extraordinary meeting of the Society in accordance with term Q of the Constitution for the evening of **2002 January 3<sup>rd</sup>**, (called for at the meeting of the committee 2001 October 18<sup>th</sup>). The extraordinary meeting is being called to discuss the motion;

**“The Executive Committee proposes that the document known as Draft Rules-01 be adopted as the Rules of the Society”**

Copies of this document are available from the secretary (40 Swindon Close, The Vale, Giltbrook, NOTTINGHAM, NG16 2WD (please enclose C5 SAE), also at [carl.stella@virgin.net](mailto:carl.stella@virgin.net)), at ordinary meetings, or at [http://communities.msn.co.uk/CarlsStellaWorld/files.msnw?fc\\_p=%2FNottingham%20Astronomical%20Society&fc\\_a=0](http://communities.msn.co.uk/CarlsStellaWorld/files.msnw?fc_p=%2FNottingham%20Astronomical%20Society&fc_a=0) (sign in/passport required)

Members are asked to review this document, any comments, or objections should be forwarded to the secretary at the above addresses. Please remember that only paid up members aged 18 or over are entitled to vote on the above proposal.

2001-10-20 Carl J. Brennan (Society Secretary)

# The Large Telescope Project

As most members will know, the Society has a large and almost fully completed observatory building at Cotgrave. It is within the grounds of a Severn Trent reservoir and is in a very good, dark site with an almost completely unobstructed horizon. The observatory is equipped with efficient wind and solar power to run the lighting and telescopes.

This building is destined to house a 24-inch Newtonian/Nasmyth-Cassegrain telescope. There are currently three smaller telescopes stored in the observatory; an 8½-inch Equatorial Newtonian, a 3-inch Refractor and a 6-inch Dobsonian.

The main mirror for the 24-inch telescope has been in the possession of the Society for about 15 years and was refigured to a high standard several years ago. At the same time, a Cassegrain secondary mirrors was obtained.

At the start of my term as President of the Society, it was clear that raising funds to build the 24-inch telescope was an important priority.

A fund raising scheme for the so-called 'Large Telescope Project' was initiated over two years ago. Many members contribute to this scheme on a regular monthly or yearly basis or when they are able. As the Society is a registered charity, income tax paying contributors can complete a gift-aid declaration and the Society can then also reclaim money from the Inland Revenue.

To date, approximately £3700 has been raised and the fund continues to rise every month. Annual membership subscriptions can also be counted as gift-aid donations and any money reclaimed from the IR from this source is also being added to the fund.

I would ask that all members consider contributing regularly to this fund. Even small monthly donations accumulate over time when building society interest and Inland Revenue contributions are added. A small monthly donation is a very painless way to contribute and helps bring closer the time when this telescope can be completed and be available for all of us to use.

Other fund raising avenues are also being explored and a new Lottery Fund application is going to be submitted in the near future. If this is successful, we will be in a position to start building the telescope during next year. Let's all keep our fingers crossed!

El Presidente

## DIARY DATES, by Carl Brennan

### FUTURE N.A.S. MEETINGS

the Secretary, Nottingham Astronomical Society,  
it's Committee or Members.

**November 1<sup>st</sup> Djanogly C.T.C.**

Doors open from 7.30pm

#### **The Latest from**

#### **Sherwood Observatory**

Talk by **Mr Graham Shepherd**,  
Secretary of Mansfield & Sutton  
Astronomical Society

**November 15<sup>th</sup>**

#### **Informal Meeting**

At Dave Lukehurst's, 87 Victoria Road,  
Sherwood, Nottingham.

7.30pm to 9.00pm – everybody welcome  
(see article on next page).

**December 6<sup>th</sup> Djanogly C.T.C.**

Doors open from 7.30pm

#### **Cosmic Chemistry**

Talk by **Dr. Roy Gretton**, Vice President  
of Nottingham Astronomical Society

**December 17<sup>th</sup> MONDAY**

#### **Committee Meeting**

7.30pm, El Presidente's Palace  
*Committee members only please*

### **2002**

**January 3<sup>rd</sup> Djanogly C.T.C.**

Doors open from 7.30pm

#### **Astro Quiz**

Details to follow, but there will be  
prizes to be won!

**February 7<sup>th</sup> Djanogly C.T.C.**

Doors open from 7.30pm

#### **Astrophotography –**

#### **A Personal Adventure**

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

The NAS Secretary compiles these Diary Dates. Contributions are always welcome (please include source acknowledgement). Nottingham Astronomical Society, and/or the Secretary accept no responsibility for any errors that may occur within this publication. Any views expressed in *Diary Dates* are those of the individual authors and not necessarily endorsed by

**March 7<sup>th</sup> 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)

**September 5<sup>th</sup> 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**

**November 7<sup>th</sup> and 8<sup>th</sup>**

**"Techniques for the detection of planets and life  
beyond the solar system"**

<http://www.roe.ac.uk/atc/research/workshop.html>

**November 10<sup>th</sup> (Saturday)**

#### **LEEDS ASTRONOMICAL SOCIETY**

**"ASTROMEET 2001"**. Centenary House, North  
Street, Leeds. Doors open 09.00, convention starts  
10.30; tickets cost £5.00 on the door. Speakers will  
be:

Dr. Monica Grady – Meteorites and Mars

Dr Allan Chapman – Thomas William Webb

Dr. Andrew Elliot – Video Astronomy

Dr Andrew Hollis – Near Earth Asteroids and the  
Earth

Prof. John Parkinson – 11<sup>th</sup> August 1999 – A  
sideways look back at Britain's Eclipse.

Details and maps at [www.astro.leeds.co.uk](http://www.astro.leeds.co.uk)

**November 28<sup>th</sup>**

BAA Meeting, Savile Row, London.

### **MARK THIS DIARY DATE**

#### **FOR NEXT YEAR!**

**Ilkeston & District Astronomical  
Society (IDAS) 21st Birthday**

**Convention** – Details to follow but it will be  
on either May 11<sup>th</sup> or 18<sup>th</sup>.

## Informal Meetings

Committee would like to try and re-induce these meetings in to our programme.

The first meeting, (for a long time), will be held at the Palace of El Presidente on 2001 November 15<sup>th</sup>, between 7.30pm and 9.00pm. Dave lives at 87 Victoria Road, Sherwood, Nottingham, (ignore the red cross on the map, Dave up towards the gaol, just north of Compton Road, on the left). It is not all that far from the Djanogly CTC, but if you do get lost, or need more help finding it then contact Dave on 0115 960 2266, or at [gildor@ntlworld.com](mailto:gildor@ntlworld.com)



We still need venues for December 20<sup>th</sup>, January 17<sup>th</sup>, February 21<sup>st</sup> and March 21<sup>st</sup>, could you host a meeting? These are simple meetings, and hopefully very informal. They are intended to give members the chance to meet and discuss issues, and to encourage the newer members to get to know us, ask questions, and raise any problems they might have with observing, telescopes etc. It would be an advantage if you have a telescope/observatory as active observing is encouraged where possible. But please don't let that put you off hosting a meeting. If you can host a meeting please contact the secretary, Carl Brennan, at [carl.stellal@virgin.net](mailto:carl.stellal@virgin.net), or at one of the meetings, (or let any other committee member know).

## ANNIVERSARIES THIS MONTH

By Carl Brennan

November 5<sup>th</sup> Fred Lawrence Whipple celebrates his 95<sup>th</sup> birthday. He was born in Red Oak, Iowa, USA in 1906!

November 8<sup>th</sup> Edmond Halley was born in Haggerston, Shoreditch, London in 1656. He died in 1742 in Greenwich, London, on January 14<sup>th</sup>.

November 15<sup>th</sup> William Herschel was born in 1738. Like Hubble there is not the space to give this great astronomer full credit here.

November 18<sup>th</sup> Alan Bartlett Shepherd was born in 1923 in New Hampshire, USA. In 1961 (May) he became the first American in space (sub orbital) on the Mercury Redstone 3 mission aboard Freedom 7. In 1971 he commanded the Apollo 14 mission and became the fifth man to walk on the Moon. Shepherd resigned from NASA in 1974. He died in 1998.

November 20<sup>th</sup> Edwin Powell Hubble was born in Marshfield, Missouri, USA. Hubble's work and discoveries are worthy a complete article sometime. He certainly changed the face of astronomy.

## Recent Developments in Outer Solar System Discoveries

by Brian Griffin

Over the last two years there have been many discoveries concerning new satellites of the giant planets Jupiter and Saturn.

Twelve (12) new satellites of Jupiter were reported by the IAU - S/1999 J1, S/2000 J1 (also known as S/1975 J1), and S/2000 J2 to J11.

Twelve (12) new satellites of Saturn were also reported by the IAU - S/2000 S1 to S12.

The following satellites have been recovered in the last few months (August and September 2001):

a). Jupiter

So far only five (5) of the new satellites have been recovered, which are S/2000 J2, J5 and J8 to J10.

b). Saturn

Eleven of the twelve new satellites listed above have so far been recovered. The outstanding satellite yet to be recovered is S/2000 S3.

I expect further recoveries (and new discoveries) to be made over the next few months.

**October 24:** Latest update on the Saturn recoveries is that S/2000 S3 has also been recovered (ref IAU web site).



## Best of the Web

Two items only this month, due to shortage of space in the Journal.

### The Sun...

I would like to thank NAS member Gladys Morris, who is an observer of the Sun, for sending me a copy of the BAA Solar Section Newsletter. The Newsletter gives sunspot and flare data. The Newsletter archive and other solar information is available on the BAA Solar Section website: [http://ourworld.compuserve.com/homepages/M\\_Beaales/](http://ourworld.compuserve.com/homepages/M_Beaales/)

### ...and the Moon

This one is just for fun. It's a simple Javascript "Lunar Lander" game at <http://www.cbc4kids.ca/general/the-lab/space/games/lunarlander/default.html>  
Young (and old) space enthusiasts will love it, but it's more difficult than it looks!

## Spacecraft News

Mars Odyssey 18 October 2001

After 200 days of travel and more than 460 million kilometres (about 285 million miles) logged on its odometer, NASA's 2001 Mars Odyssey spacecraft will fire its main engine for the first and only time Oct. 23 and put itself into orbit around the red planet.

To enter orbit, Odyssey's propellant tanks, the size of big beachballs, must first be pressurised, plumbing lines heated, and the system primed before 262.8 kilograms (579.4 pounds) of propellant is burned in exactly the right direction for 19.7 minutes.

Flight controllers at JPL will see the main engine burn begin a few seconds after 7:26 p.m. Pacific time on the evening of Oct. 23. (Events in space are usually measured in Universal Time -- formerly called Greenwich Mean Time -- under which the Mars arrival occurs on Oct. 24. In the United States, however, the arrival will take place the evening of Oct. 23.)

The spacecraft will pass behind the planet 10 minutes later and will be out of contact for about 20 minutes. The burn is expected to end at 7:46 p.m. Pacific time, but controllers will not receive confirmation until a few minutes later when the spacecraft comes out from behind Mars and re-establishes contact with Earth at about 8 p.m.

The firing of the main engine will brake the spacecraft's speed, slowing and curving its trajectory into an egg-shaped elliptical orbit around the planet. In the weeks and months ahead, the spacecraft will repeatedly brush against the top of the atmosphere in a process called aerobraking to reduce the long, 19-hour elliptical orbit into a shorter, 2-hour circular orbit of approximately 400 kilometres (about 250 miles) altitude desired for the mission's science data collection.

Galileo            14 October 2001

On Saturday, 13 October, the final targeting manoeuvre for Io was executed. This motor burn fine-tuned the trajectory of the spacecraft to reach the desired aim-point 181 kilometres (112 miles) above the surface of Io on Monday, 15 October.

(The Io encounter on 15 October was successful, and data will be transmitted back to Earth over the next few months - BG)

Extracts from JPL/NASA web sites.

Mars Odyssey Update            24 October 2001

The United States returned to Mars tonight as NASA's 2001 Mars Odyssey fired its main engine at 7:26 p.m. Pacific time (23 Oct) and was captured into orbit around the red planet.

At 7:55 p.m. Pacific time, flight controllers at the Deep Space Network station in Goldstone, Calif., and Canberra, Australia, picked up the first radio signal from the spacecraft as it emerged from behind the planet Mars.

"Early information indicates everything went great," said Matt Landano, the Odyssey project manager at NASA's Jet Propulsion Laboratory in Pasadena. "The orbit insertion burn went off just as we planned and we will now begin the three-month long aerobraking phase."

Firing of the main engine slowed the spacecraft's speed and allowed it to be captured by Mars' gravity into an egg-shaped elliptical orbit around the planet. In the weeks and months ahead, the spacecraft will repeatedly brush against the top of the atmosphere in a process called aerobraking. By using atmospheric drag on the spacecraft, flight controllers will reduce the long, highly elliptical orbit into a shorter, 2-hour circular orbit of approximately 400 kilometres (about 250 miles) altitude for the mission's science data collection.

"Orbit insertion is our single most critical event during the mission, and we are glad it's behind us," said

David A. Spencer, Odyssey's mission manager at JPL. "But we cannot rest on our laurels. The aerobraking phase will be a demanding, around-the-clock operation, and it requires the flight team to react as the atmosphere of Mars changes."

The aerobraking phase is scheduled to begin on Friday, October 26.

From JPL web page

Brian Griffin

## Small Advertisements

**David Lukehurst**

**Astronomical Telescope Maker**

Dobsonian Mounted Newtonians

From 6¼ to 25-inches plus

12-inch f/6 truss-tube Dobsonian

**£995**

6-inch f/12 Achromatic Object Glasses

**£295**

1¼-inch Super-Plossl Eyepieces

**£32**

Ronchi testing eyepieces (50 or 100 lpi)

**£32**

**For details & price list:**

Tel: 0115 9602266

e-mail: [gildor@ntlworld.com](mailto:gildor@ntlworld.com)

**“Small Ads”**

**A new feature in the  
NAS Journal**

The Journal can now 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 (such as the one aside)**, up to one quarter of a page in size, 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.

### **Nottingham Astronomical Society**

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Affiliated to the British Astronomical Association  
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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.*)

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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.

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