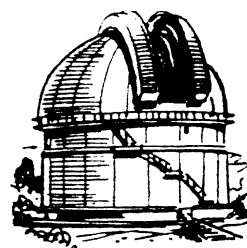

Journal

of the

Nottingham Astronomical Society

July-August 2012



Inside this issue

- Sky Notes for July and August
- Small advertisement
- NAS e-Services
- Diary Dates for 2012
- Transit of Venus report by John Hurst
- Society Information
- Membership application form

Thursday, July 5th
British Geological Survey
Nicker Hill, Keyworth
8 pm (doors open at 7.30pm)

This evening we welcome

Paul Money

who will be speaking on

**“Exodus –
the Death of Stars”**

A NEW OBSERVING SEASON BEGINS...

Of course, there was no reason to give up observing completely in June and July (the Moon and the bright planets are always a delight) but the beginning of August marks the return of dark nights to the Nottinghamshire skies, so that deep-sky objects are again visible in all their glory. By mid-August we have over three hours of true darkness every night, and many star clusters and nebulae are well-placed for observation. A pair of binoculars or a small telescope should enable you to view (amongst many interesting objects):

M13 and **M92**, two globular clusters in the constellation of Hercules, high in the south at 10 pm BST in mid-August

M57, the Ring Nebula (a bright planetary) in Lyra, almost directly overhead at the same time

M27, the Dumbbell Nebula (another bright planetary) in Vulpecula, high in the southeast

...and of course we also have the rich star-fields of the Milky Way, visible in a broad band from above Cygnus down to Sagittarius in the far south. These are always a source of pleasure when scanned through binoculars or a wide-field telescope.

And don't forget the Perseids – see Sky Notes.

Sky Notes

July-August 2012

Compiled by Roy Gretton



Aphelion, when the Earth's orbit takes it to its furthest point from the Sun, occurs this year at 4.30 a.m. BST on July 5th. The two bodies will then be separated by a distance of 152,092,400 km.

PHASES OF THE MOON

Full Moon	July 3 rd ,	August 2 nd ,	August 31 ^{st*}
Last Quarter	July 11 th ,	August 9 th	
New Moon	July 19 th ,	August 17 th	
First Quarter	July 26 th ,	August 24 th	

(* According to some traditions, this will be a "blue" Moon)

Perigee occurs on July 1st and 29th, and again on August 23rd, while apogee occurs on July 13th and August 10th.

THE PLANETS

Mercury will be visible in the morning sky in mid-August. It reaches greatest western elongation, in the constellation of Cancer, on the 16th, when it will be 19 degrees from the Sun, and shining at magnitude zero. A particular help in locating Mercury on that date will be the fact that it will be just four degrees north of the crescent Moon in the hour before sunrise.

Venus, having transited the Sun in early June, now emerges as a brilliant object in the morning sky. By mid-July it reaches its greatest brilliance (magnitude -4.4) close to Aldebaran in the constellation of Taurus. Jupiter will also be nearby, occupying a position about halfway between the Hyades and Pleiades open clusters. By August 15th Venus will have reached its greatest western elongation, 46 degrees from the Sun, and through a telescope will be exhibiting a 50 percent phase (similar to the Moon at Last Quarter).

Mars begins July west of Spica in the constellation of Virgo. It has now faded to magnitude 1, and will be setting by midnight. It continues to fade throughout July, and by the end of August will have almost disappeared into the sunset glow, its disk having shrunk to only five arcseconds across.

Jupiter has now reappeared as a morning object, and on July 15th will undergo a grazing occultation by the Moon. This means that, depending exactly where you are, part or all of the planet will disappear behind the north pole of the Moon. The same will be true for the Galilean satellites. This sequence of events will begin just before 3 am **BST** and end before 3.30 am.

Saturn continues its slow easterly movement in the constellation of Virgo. As July begins it is still a very worthwhile target for telescopic observation, but by the close of August it will be disappearing into the sunset glow.

Uranus, in the constellation of Pisces, becomes available for observation in the morning sky in July.

Neptune, in the constellation of Aquarius, reaches opposition to the Sun on August 24th.

METEORS

The **Perseids** are probably the best-observed meteor shower of the year, being prolific (typically 80 events per hour under ideal conditions), and appearing at a (usually) pleasant time of year, amid warm August nights. Maximum activity is predicted for shortly before noon on August 12th, so the nights of August 11th/12th and 12th/13th promise to be the best for spotting these meteors. Conditions this year are favourable, the Moon being a waning crescent in the morning sky.

The Nottingham Astronomical Society: E - SERVICES

Whether or not you are a NAS member, you can now keep up to date with details of the Society's meetings and other events by visiting the NAS website:

www.nottinghamastro.org.uk

NAS Journal e-mailing list

To register for your monthly e-mailed copy of the NAS Journal, just e-mail

secretary@nottinghamastro.org.uk

You don't have to be a Society member to take advantage of this service.

Advertisement

WANTED: Eyepieces

I am currently looking for 2nd hand Televue eyepieces to compliment my TV 101.

I am looking for mainly Nagler eyepieces but would be interested in other models in the Televue too.

I am situated close to Alfreton, Derbyshire.

Thank you.

Paul Davies

Email: paul@graphic.demon.co.uk

DIARY DATES 2012

Monthly Meetings of the Nottingham Astronomical Society

Our programme for this year is shown below. Don't forget to check our website:

www.nottinghamastro.org.uk

for the latest information about the Society's meetings and for further information about the talks and speakers.

Our meetings are held on the **FIRST THURSDAY** of the month, at the British Geological Survey, Keyworth, Notts. NG12 5GG

Doors open at 7:30pm for 8pm start.

Thursday, 5th July 2012

Talk: "Exodus – The Death of Stars "

Paul Money

August 2012 - Summer Break - No Meeting

Thursday, 6th September 2012

Members' Evening (visitors welcome) - Topics to be arranged

Thursday 4th October 2012

Talk: (Title to be announced)

Thursday 1st November 2012

2012 Annual General Meeting

Thursday 6th December 2012

Talk: " Climate Change and the Sun-Earth Connection"

Dr Jim Wild

Space Plasma Environment and Radio Science Group
Lancaster University

Transit of Venus – June 5th/6th 2012 - viewed from Zakynthos, Greece

by John Hurst

The 2012 transit of Venus is the second of a pair of transits which occur every 105.5 or 121.5 years. I was fortunate to see the whole of the 2004 transit with a Meade ETX90 telescope, though I did not take any photographs. This time the transit began at about 22:00 UT and so was not visible in western Europe until sunrise on the 6th and then for only the last one and a half hours. As I usually visit our daughter in Greece in May/June, I made sure I was there on June the 6th! This gave me a little longer in the transit and a much better chance of clear skies.

On carrying out a 'reccy' a few days before I found the best place to view the sunrise happened to be the balcony of our 1st floor apartment – perfect!



My equipment consisted of a Meade ETX125 Optical Tube assembly, mounted by a homemade bracket onto an Astrotrac tracking mount, on an Astrotrac wedge (very handy!) on my trusty 40 year old Gilux tripod. I mounted my Nikon D700 DSLR onto the eyepiece port of the ETX, as this gave a better balance, and viewed the transit via the rear port with a 45 degree adaptor. The solar filter was made of Baader film, which gives a white image. The Astrotrac can be set for solar tracking, and worked quite well considering that polar alignment had to be approximate as the roof obscured polaris from my viewing position!

The ETX125 is a 125mm Maksutov with a focal ratio of f15, the Nikon D700 at prime focus.



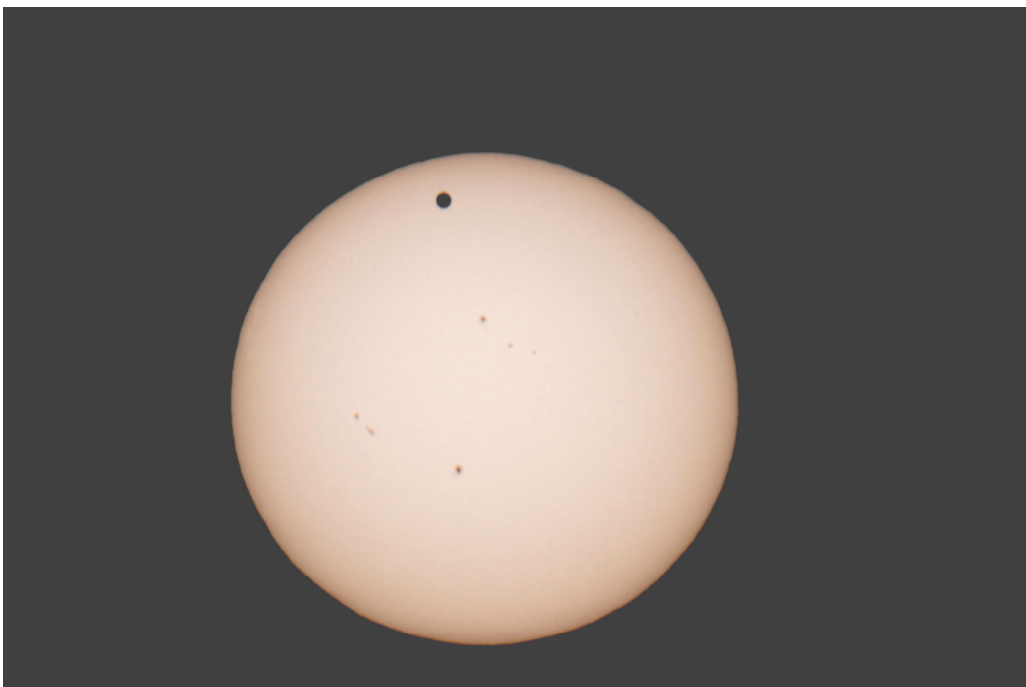
We rose at 5 (Greek summertime) to await a perfect sunrise!

I nearly missed this shot as the sun rose rapidly above the distant mountains!
My wife called it “ VT phone home “ Note how red the sun is, even through the Baader film.



60th sec @ f15, 320 ISO. Timed at 03:32 UT. Lots of sunspots!

The next shot shows the transit more clearly, with the sun about 6 degrees high :



125th sec @ f15, 320 ISO. Timed at 03:53 UT.

The next shot is close to 3rd contact, the ‘ black drop’ is just starting to appear :



125th sec @f15 400 ISO Timed at 04:37 UT.

A minute or so later and the black drop effect is clearly seen :



125th sec @f15 400 ISO. Timed at 04:38 UT.

A closer view of the above shot,



As 3rd contact passed, I tried to spot the 'Aureole', the faint thin line around the outer edge of Venus as it leaves the Sun's disc, caused by sunlight refracting in the planet's dense atmosphere:



... but no luck! - need a bigger scope! 125th sec @ f15 400 ISO. Timed at 04:41 UT.

Interestingly, although the black drop was clearly visible through the telescope, it could not be seen through Canon 15x50 binoculars.

So, a successful trip!

John Hurst, NAS Observatory Director.

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

PRESIDENT:

Fred Hopper

e-mail: fred.w.m.hopper@gmail.com

VICE PRESIDENT:

Roy Gretton

e-mail: roygretton@hotmail.co.uk

SECRETARY:

Victoria Jolly

e-mail: secretary@nottinghamastro.org.uk

TREASURER:

Sam Boote

e-mail: s.boote@bcs.org

JOURNAL EDITOR:

Roy Gretton

e-mail: roygretton@hotmail.co.uk

OBSERVATORY DIRECTOR:

John Hurst

email: jmhurst@hotmail.co.uk

Observatory line: 07726 940700 (line open during observing sessions)

CAMPAIGN FOR DARK SKIES

REPRESENTATIVE:

Barrie Chacksfield

email: b.chacksfield@bgs.ac.uk

ORDINARY COMMITTEE MEMBERS:

Joe Sowerby

Dorothy Sowerby

Kevin Greally

David Anderson

Meetings

Our meetings, often with an illustrated talk by a guest speaker, are held on the first Thursday of each month (except in August) at:

**The British Geological Survey
Nicker Hill
Keyworth
Nottingham NG12 5GG**

Doors open 7.30pm

Meetings start 8.00pm

Meetings end 10.00pm

Meetings are open to the public, and visitors are always welcome to attend.

Annual subscriptions 2012

Full	£25
Concessions	£12.50
Joint rate for partners living at the same address	£37.50

Subscriptions become due on 1st January. Half-price subscription is charged if joining after 1st July. Please make cheques payable to: Nottingham Astronomical Society.

If you would like more information about the **Nottingham Astronomical Society**, or would like to become a member, please contact the Secretary secretary@nottinghamastro.org.uk or speak to any NAS committee member at one of the regular monthly meetings. A membership application form is inside this issue of the Journal.

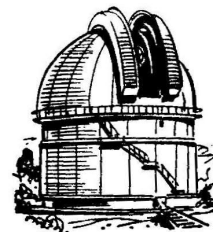
The Nottingham Astronomical Society

The Nottingham Astronomical Society, and/or the Editor accept no responsibility for any errors that may occur within this publication. Any views expressed in the **NAS Journal** are those of the individual authors and not necessarily endorsed by the Nottingham Astronomical Society, its Committee or Members.

NOTTINGHAM ASTRONOMICAL SOCIETY

Founded in 1946 for all interested in astronomy
Affiliated to the British Astronomical Association
Member of the Federation of Astronomical Societies

Registered Charity No. 1066645
Member of the Society for Popular Astronomy
Supporter of the Campaign for Dark Skies



Membership application and Gift Aid declaration

Title:

Full name:

Full home address:

Postcode:

Telephone:

e-mail address:

Subscription rate:	Full	£25.00	(year)	£12.50	(half year)
	Concession	£12.50		£6.25	
	Partnership	£37.50		£18.75	

Concession = under-18 / full-time student / unemployed and receiving benefits

Partnership = two members living together as a couple at the same address

I wish my subscriptions to be eligible for Gift Aid **Yes / No**

Gift Aid declaration

(HMRC reference XR32048)

I want Nottingham Astronomical Society to treat all subscriptions and donations that I make from the date of this declaration as Gift Aid donations, until I notify you otherwise.

I pay an amount of UK Income Tax and/or Capital Gains Tax at least equal to the tax that Nottingham Astronomical Society reclaims on my donations in the appropriate tax year.

Signature:

Date: