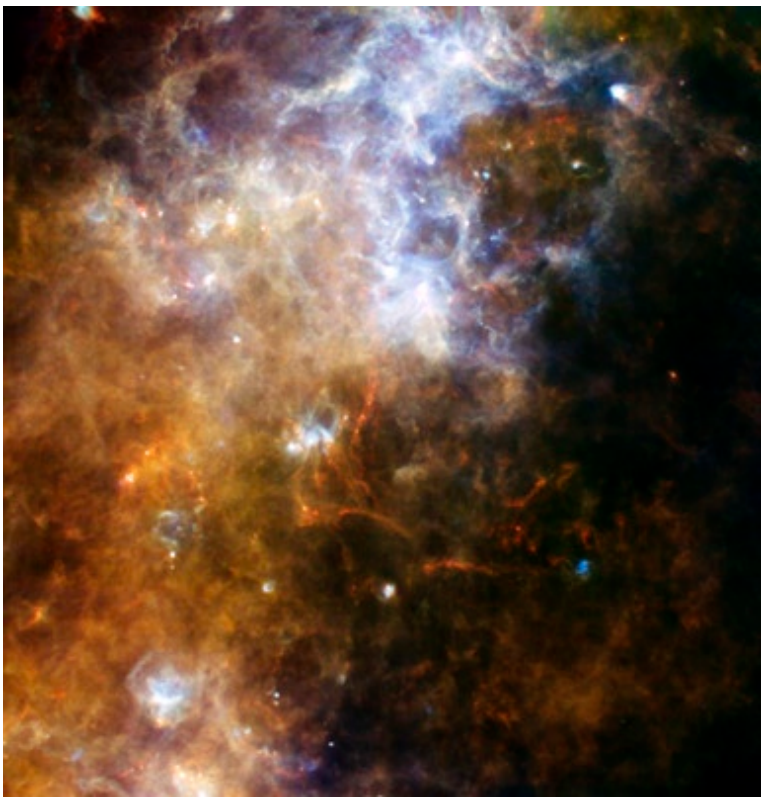
Recent News...

Recent images from the ESA Herschel telescope!!....

Herschel has delivered spectacular vistas of cold gas clouds lying near the plane of the Milky Way, revealing intense, unexpected activity. The dark, cool region is dotted with stellar factories, like pearls on a cosmic string.



SPIRE/PACS image of region near the Galactic Plane.
Credit: ESA and the SPIRE & PACS Consortia

The European Space Agency's Herschel Space Observatory (formerly called Far Infrared and Sub-millimetre Telescope or FIRST) has the largest single mirror ever built for a space telescope. At 3.5-metres in diameter the mirror will collect long-wavelength radiation from some of the coldest and most distant objects in the Universe. In addition, Herschel will be the only space observatory to cover a spectral range from the far infrared to sub-millimetre. Herschel's major objective will be discovering how the first galaxies formed and how they evolved to give rise to present day galaxies like our own. Additional targets for Herschel will include clouds of gas and dust where new stars are being born, disks out of which planets may form and cometary atmospheres packed with complex organic molecules.
(from ESA website)

THIS MONTHS TALK

October 17th

END IN FIRE – THE ULTIMATE FATE OF THE EARTH

Dr Robert Smith (Sussex University)

Millions of years into the future, what will happen to the Solar System and our Earth?

Robert Smith was educated at the University of Glasgow (BSc Mathematics and Physics, PhD Astronomy) and taught there from 1966 to 1968, when he moved to Sussex as a Research Fellow. He has been a member of the teaching faculty of the Astronomy Centre since 1972, and has published an undergraduate textbook (Observational Astrophysics, CUP 1995). From 1996-2001 he was Subject Chairman of Physics and Astronomy, and from 2001-2003 he served as Dean of the School of Chemistry, Physics and Environmental Science. He was then Head of Department of Physics and Astronomy until 31 July 2004. Until 1985 he was a theoretician, working on rotating stars, large-scale circulation in stellar envelopes and contact binary stars. Since then he has been primarily an observer, working on spectroscopy of cataclysmic binaries (CVs) and Algols. The Sussex group has made a special study of the secondary star in CVs and the effects of irradiation. Robert Smith has been an editor of Observatory Magazine (1977 - 1983) and of The Quarterly Journal of the Royal Astronomical Society (1984 - 1996; Managing Editor 1991 - 1995). Until summer 2006, he was Chair of the Membership Committee of the Royal Astronomical Society and a Vice-President of its Council. He retired in September 2006, but remains active in research, is teaching one course and is supervising some undergraduate practical projects. He is married, with three daughters and three grand-daughters. In his spare time, he enjoys hill-walking, singing, reading and listening to classical music. In his retirement he has taken up again the study of classical Greek.

Research

My primary interests are in the structure and evolution of stars, particularly very close (interacting) binary stars.

Interacting binary stars are systems in which two stars orbit around each other so closely that they strongly affect each other's structure and evolution. Often one component is a compact object: a white dwarf, neutron star or even black hole. As well as presenting some intrinsically fascinating phenomena, they provide a test-bed for theories of stellar evolution. In many of them, the interaction involves actual transfer of matter from one star to another, leading to the formation of an accretion disk around the compact star. Accretion is now believed to provide the power source for many astronomical objects, from proto-stars to quasars, and the phenomenon is most accessibly studied in interacting binaries. Our group has been involved in a number of observational and theoretical studies, concentrating particularly on the mass donor in cataclysmic variables, which are a sub-class of interacting binary in which a faint, cool star, hard to observe in the optical, is transferring mass through an accretion stream and disk onto a white dwarf.

Selected publications

2008

Distant future of the Sun and Earth revisited (with Klaus-Peter Schroeder) in Monthly Notices of the Royal Astronomical Society Volume 386 pp. 155-163

High-dispersion absorption-line spectroscopy of AE Aqr (with J Echevarria, R Costero and S Zharikov) in Monthly Notices of the Royal Astronomical Society Volume 387 pp. 1563-1574

LAST MONTHS TALK?

Thanks to Lee and Gerry here is some old but still relevant meeting notes from 1991! that gives interesting extra background to last month's talk....

“The November meeting was conducted by the Vice-Chairman, Jeremy Cook, as the Chairman had had an unfortunate accident. After some announcements by him and Muriel Wrigley, the main speaker, Professor Martin Sweeting, of the University of Surrey, was called on to talk about microsatellites.

Professor Sweeting began by explaining that the large spacecraft that we hear about in the astronomical press are very expensive, and have a long timescale.
Hence, they are feasible only for the richest nations, and the alternative approach employed by the University of Surrey can open up space to much smaller budgets. The University has launched five satellites of its own. Their objectives are to test new technology in space, stimulate space interest in young people, and provide commercial applications for satellites.

An internationally-agreed nomenclature defines a microsatellite as a satellite with a mass of between 10 and 100 kg. Microsatellites can be used for communications, Earth observation and space-science on a small scale amongst other applications. Their five satellites are named UoSAT - an acronym for "University of Surrey SATellite". Their most recent satellite, UoSAT 5, was launched on an Ariane rocket in July 1991. It was mounted on a ring under the main satellite launched by the rocket, which made the launch cost unusually low - about £200,000 in this case. The satellite consists of a series of trays, which hold the electronics and cameras, and uses a minimum of moving parts, since these tend to be unreliable. The satellite is used by an organisation that provides medical help to people in remote areas, and for research into solar cell technology. It also contains a CCD camera for Earth imaging, and experiments into attitude-control systems.

Professor Sweeting concluded his talk with a series of slides of UoSAT 5 from

assembly to launch. The talk provoked a number of questions both before and after coffee, and a vote of thanks was given by John Wrigley.

In the second half of the meeting, Malcolm Porter gave a summary of the month's upcoming astronomical events. Richard Fleet reported on a successful
BAA Variable Star Section Centenary Meeting. I showed some constellation slides on super-fast film, and Mick Pavey displayed the results of observations of the variable star SS Cygni by Society members. Finally, Owen Brazell showed slides of a recent auroral display, which was not well seen from the Reading area, due to cloudy weather.”

From the Forum

http://tech.groups.yahoo.com/group/readingastro/

Three lovely images from Peter recently.....

M16 Eagle Nebula

M27 Dumbbell

M20 Triffid Nebula

M16 The Eagle Nebula Messier 16 (M16) is a conspicuous region of active star formation, situated in Serpens Cauda. The starforming nebula, a giant cloud of interstellar gas and dust, has already created a considerable cluster of young stars. The cluster is also referred to as NGC 6611, the nebula as IC 4703.

Right Ascension	18 : 18.8 (h:m)
Declination	-13 : 47 (deg:m)
Distance	7.0 (kly)
Visual Brightness	6.4 (mag)
Apparent Dimension	7.0 (arc min)

M27 The Dumbbell Nebula Messier 27 (M27, NGC 6853) is perhaps the finest planetary nebula the sky, and was the first planetary nebula ever discovered

Right Ascension	19 : 59.6 (h:m)
Declination	+22 : 43 (deg:m)
Distance	1.25 (kly)
Visual Brightness	7.4 (mag)
Apparent Dimension	8.0x5.7 (arc min)

M20 The Trifid Nebula Messier 20 (M20, NGC 6514) in Sagittarius is a remarkable and beautiful object as it consists of both a conspicuous emission nebula and a remarkable reflection nebula component.

Right Ascension	18 : 02.6 (h:m)
Declination	-23 : 02 (deg:m)
Distance	5.2 (kly)
Visual Brightness	9.0 (mag)
Apparent Dimension	28.0 (arc min)

data from: http://seds.lpl.arizona.edu/Messier/

Astronomy Basics

This is a friendly informal meeting hosted and presented by Gerry Bond. Its a great way for beginners and more experienced astronomers to learn some of the history and fundamentals of astronomy!

All meetings start at 7.00pm in the Loddon room of Dinton Pastures during 2009/10.(Info on Dinton Pastures see: http://www.wokingham.gov.uk/leisure/parks/country-parks/dinton/

Next Meeting: 24 Oct. 2009 Star-party weekend. Friday and Saturday.

With a session in the Loddon Room if cloudy.

see: http://www.ryhill.net/basics.html

Moon phase this month:

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

from www.stardate.org

Moon Phases:

New Moon - The Moon's unilluminated side is facing the Earth. The Moon is not visible (except during a solar eclipse).

Waxing Crescent - The Moon appears to be partly but less than one-half illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is increasing.

First Quarter - One-half of the Moon appears to be illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is increasing.

Waxing Gibbous - The Moon appears to be more than one-half but not fully illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is increasing.

Full Moon - The Moon's illuminated side is facing the Earth. The Moon appears to be completely illuminated by direct sunlight.

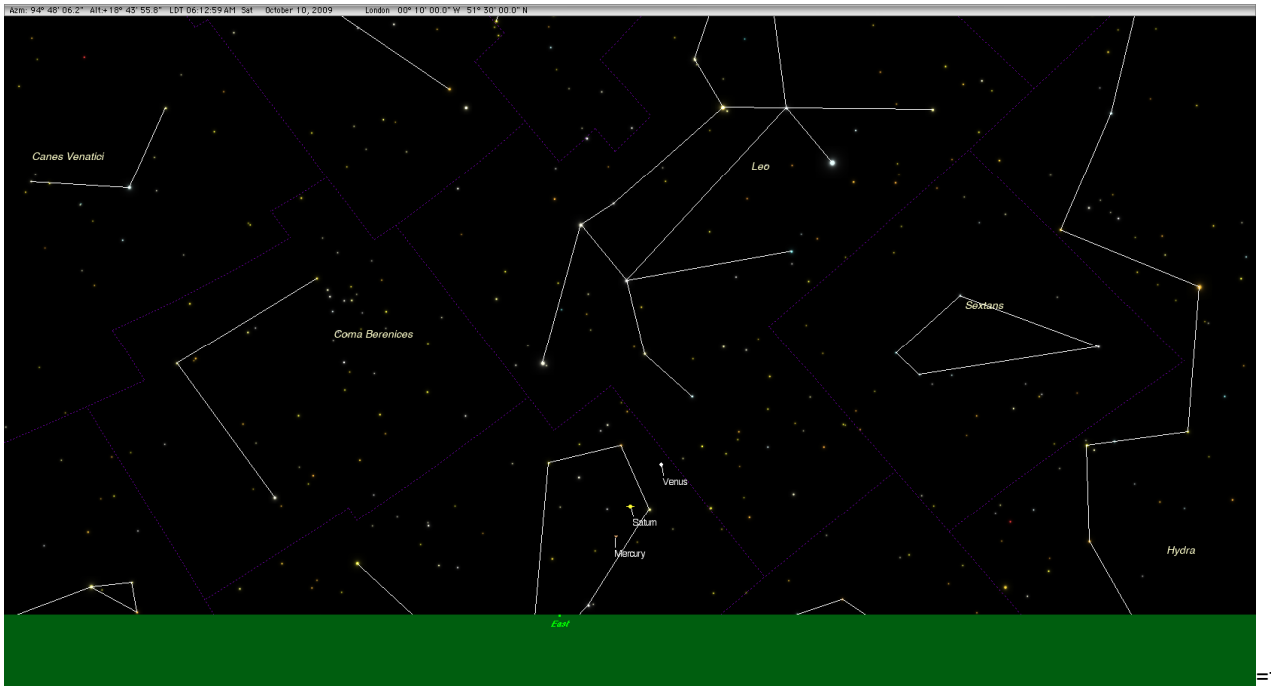
Waning Gibbous - The Moon appears to be more than one-half but not fully illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is decreasing.

Last Quarter - One-half of the Moon appears to be illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is decreasing.

Waning Crescent - The Moon appears to be partly but less than one-half illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is decreasing.

THIS MONTH.....

On the mornings around the 10th at dawn Venus,Saturn and Mercury lie close together in the sky...



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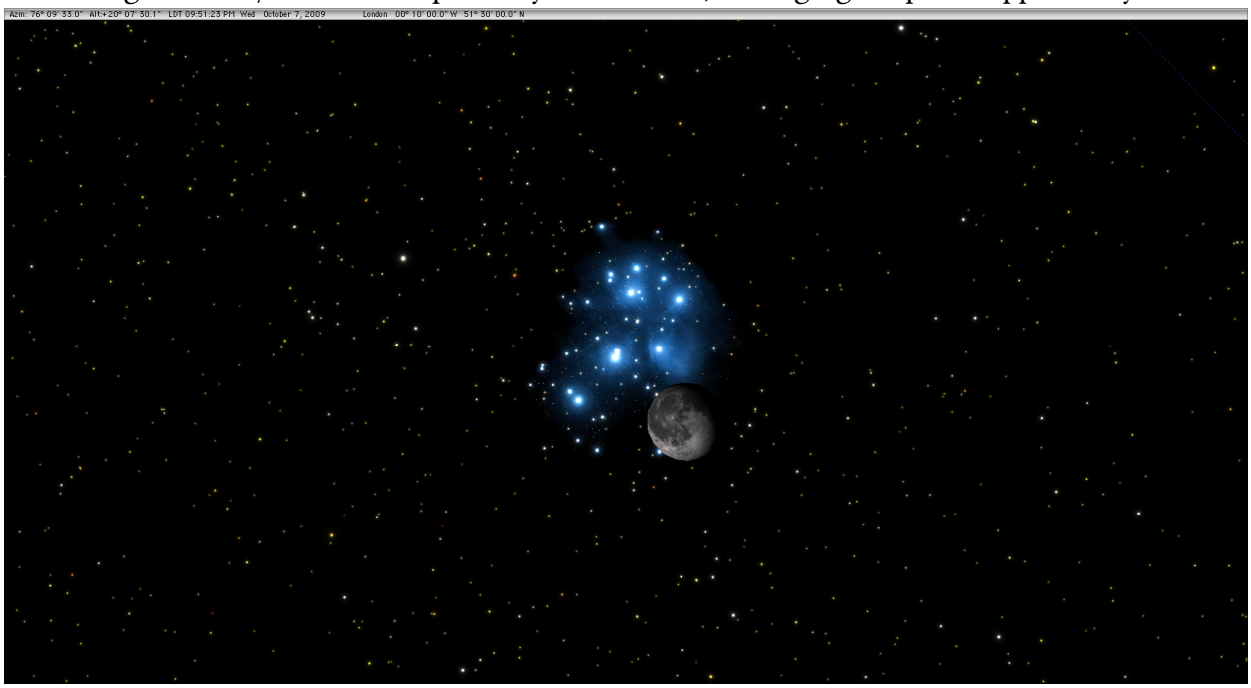
On the night of the 7th the Moon passes by the Pleiades, making a good photo opportunity!



Images created with Voyager 4.5 by Carina Software

READING ASTRONOMICAL SOCIETY

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Chairperson John Talbot (01235) 848162 john.talbot@readingastro.org.uk
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Secretary
Chris Menmuir 68 Woodrow Drive Wokingham RG40 1RT
Committee *first_name.last_name*@readingastro.org.uk John Talbot, Anne Chadwick, Jillian Ullersperger, Chris Menmuir, Nick Cryer, Gerry Bond, Kenelm England, Malcolm Brown, Peter Tickner, Patrick Josephs-Franks

Main Meetings (Programme is given on next page)
2009 - 2010 Session
These are held on the third Saturday of each month between September and June. The venue is St Peter's Church Hall, Church Road, Earley, just off the A329 Wokingham Road. Parking is available in the hall car park and the adjacent school playground. Meetings start at 7pm with a few short announcements, followed by the main speaker and breaking for refreshments around 8:30. The second half runs from 9pm to approx 9:45pm and consists of members' contributions.

Society Website Webmaster – John Talbot john.talbot@readingastro.org.uk

Discussion Groups
http://www.readingastro.org.uk
http://tech.groups.yahoo.com/group/readingastro/
RAST AR
The Society's magazine. Please send in articles for publication to the editor at rastar@readingastro.org.uk
Library – Kenelm England Books, DVDs, videos and telescopes are available for loan to members at meetings.
Basic Astronomy Section
Meeting at Dinton Pastures Country Park on the fourth Saturday of each month between September and June (December is the third Saturday), from 7.00pm until 9.00pm. All ages are welcome. Talks are aimed at a level that non-astronomers will understand. Please contact us before attending any meeting for the first time as the programme dates are subject to change:
Organiser: Gerry Bond gerry.bond@readingastro.org.uk
Public Observing Weekends - Dinton Pastures Country Park
Public observing sessions will be held at Dinton Pastures Country Park from 7pm onwards on 23rd/24th October 2009 and 12th/13th March 2010. Details from Gerry Bond gerry.bond@readingastro.org.uk
Society Observing Sessions
Society observing sessions will be held on selected dates, which are announced at meetings and via the discussion groups. Contact the observing co-ordinator, Alun Halsey, for more details.
Advice on Observing and Telescopes
Alun Halsey
Honorary members
G.W.Amery, A Elliott, D.M.Ratcliffe, A.Thomas, J.Trott, J.Wrigley, M.Wrigley
Registered Charity no 1076390. Trustees: A.Chadwick, V.Coney, C.Menmuir, J.Talbot

2009/10 Meeting Calendar

September 19th
SOPHISTICATED SMALL SATELLITES FROM SURREY
Dr Stuart Eves (Surrey Satellite Technology Ltd)
A light-hearted look at current and future missions using small satellites, activities at SSTL and space sciences.

October 17th
END IN FIRE – THE ULTIMATE FATE OF THE EARTH
Dr Robert Smith (Sussex University)
Millions of years into the future, what will happen to the Solar System and our Earth?

October 23rd/24th
PUBLIC OBSERVING WEEKEND AT DINTON PASTURES

November 21st
ASTRONOMY FROM NEW ZEALAND – OR WHAT I DID ON MY HOLIDAYS
Bob Dryden (Abingdon AS)
Bob recounts his experiences of observing in New Zealand

December 19th (NOTE 3rd Saturday)
SOLAR IMAGING
Nick Howes (Wessex AS)
Three sides to the sun – Practical aspects of imaging our nearest Star.
Followed by the RAS "Christmas Special"

January 16th
THE LUNAR '100'
Dr Lilian Hobbs(Southampton AS)
Discover how to observe Charles Wood's 100 lunar objects using a small telescope. Lilian is author of the ETX & LX90-AF guides.

February 20th
POINTING A TELESCOPE
Pat Wallace (Rutherford Appleton Laboratory)
What a telescope control computer is doing when it points the telescope accurately at an astronomical target

March 12th/13th
PUBLIC OBSERVING WEEKEND AT DINTON PASTURES

March 20th
CATACLYSMIC VARIABLES
Darren Baskill (University of Sussex)
Understanding how, every few months, some stars dramatically increase in brightness within just a few hours.

April 17th
THE SUN KINGS
Stuart Clark (University of Hertfordshire)
"The Unexpected Tragedy of Richard Carrington, and the Tale of How Modern Astronomy Began".

May 15th
IMAGING THE MOON
Bruce Kingsley (BAA Lunar Photographic Section)
An overview of imaging techniques, including many images and video, encouraging observation of our Moon.

June 19th
Kenelm England (reading AS) Continuing the theme celebrating important and interesting astronomical centenaries.
Followed by 39th Annual General Meeting