



### 400 Years of the Telescope



400 years ago on October 2<sup>nd</sup> 1608, officials in the Netherlands were pondering over a puzzling patent application by a Flemish spectacle maker named **Hans Lipperhey**.

The patent was for a "device by means of which all things at a very great distance can be seen as if they were nearby", and unbelievably the patent was refused.

This is the earliest known record of a telescope, and a few months later, scientist **Galileo Galilei** would get his hands on one and eventually turn it to the sky to begin the science of telescope observing.\*

His refracting telescope magnified only 14 times and gave a very restricted field of view, and as a result Galileo was only able to view about a third of the Moon through his telescopes.

However, despite these limitations, Galileo published '**Sidereus Nuncius**' ('The Starry Messenger') in 1610, which describes the celestial sights he saw with his new telescope. These included craters on the Moon, the phases of Venus and the moons of Jupiter.

\* There is no truth to the rumour that shortly afterwards Derrick McCourt put two of these together and invented binoculars.

### "Ten Minute Astronomy"

Speakers - EAAS members as follows:

**Stephen Beasant** The October Sky and Star Clusters

**Neil Patterson** Double Stars

**Andy Johnston** Jupiter

**Eamonn Keyes** Galaxies and Globular Clusters

**Derrick Mc Court** Wide Field Astronomy

"Ten Minute Astronomy" is the topic for our Members Night talks.

Several members of the Society will speak on their particular field of interest in Astronomy, the reasons why they chose to pursue it, and how their choice has affected both their observing and choice of equipment over the years

These talks should cover a wide area of interest, with something for everyone, as they will include everything from wide field viewing to deep sky objects, and from binoculars to large Dobsonian telescopes.

In addition, some of the equipment mentioned will be present for examination by members and guests, and any questions answered.

## Society News

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### Whirlpool Star Party 2008



EAAS Chairperson Mia Hanna with celebrated Norton Star Atlas author Ian Ridpath.

Well, once again we all made it back safely from the Whirlpool Star Party at Birr, and Jonathan very kindly didn't lead people the wrong way to the observing site at the Leviathan this year!

We arrived on the Friday, and whilst queuing to register I had a great conversation about crisps with the gentleman behind me.... as you do! So, I was slightly embarrassed when I realized I was talking to the extremely talented **Dave Gradwell**, and after I grovelled profusely we ended up having a great conversation about solar and planetary imaging, and also discussed our mutual appreciation of EAAS's very own **Kieran 'Phoenix' Rooney**.

Later on, there was an Obsession in the grounds of the castle. **Dave Lillis** was there with the 20" which is now motorized and fitted with a full GoTo system, and he had a crowd around it waiting to climb the ladder and see the spectacular views through this amazing scope.

I decided to annoy **John O'Neill** who was observing double stars, and I was surprised to be informed that women are better than men at determining their colours....Dulux colour charts anyone?

There was a bit of difficulty locating one of the targets in Cassiopeia, so we decided to use a great resource we had observing with us that night, **Ian Ridpath**, editor of **Norton's Star Atlas** and author of many observing books.

## Society News 2

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### Whirlpool Star Party 2008

There was a wonderfully bright long-lasting meteor around midnight,, and as Ian decided it was a fireball that was good enough for me! After a while I decided to call it a night as the sky wasn't great, but was a bit miffed to discover it cleared just after I left and SAC were out until after 3 o'clock!

The talks kicked off on Saturday with a wonderful history of the constellations from **Ian Ridpath**. Some of the illustrations he showed from the older star atlases were beautiful.

And talking of beautiful pictures, the next talk was by **Deirdre Kelleghan** and **Sally Russell**, who showed us some of their breathtaking drawings and explained how their interest in sketching all things astronomical developed.

I had a closer peak at Dee's and Sally's sketches during the break and I am completely in awe of the talents both these ladies possess.

After a lovely lunch and catch up with **Bernie Foley** from Deise AS, we made our way back to Dee and Sally's sketching workshop where I was horrified to discover despite my O level art I had no discernable talent for sketching moon craters! I was actually asked at one point what I was sketching...thank heavens for my thick skin!! It made me realize exactly how much actually goes into astro-sketching.

After the presentation of **Asteroid McDonald** to **Dave McDonald**, Bernie and I decided to take a walk to the Leviathan which still makes the hairs on the back of my neck stand up. It's such a beautiful construction and to hear it announced that all work on it was to be stopped is heartbreaking.

The meal was great and the craic at the table was even better, thanks to **Declan Molloy** from **Tullamore AS**, **Phil Lardner** (crazy jumps off mountains guy and makes huge Dobs!) and **Stephen Ryan** both from **South Dublin AS**.

**Aaron Golden's** talk was fascinating, with some great footage but unfortunately the weather didn't play ball and there was no observing on the Saturday night, and so a lot of a different kind of 'dark matter' was consumed in the bar, with **Ian Ridpath** joining us at our table for the rest of the night.

I spent the following morning wandering around the museum and the grounds of the castle in the company of **Neil Patterson** who decided to have a kip, lying in state ... or in a state as is more the case perhaps!

**WSP 2008** ended with **Judith Pipher's** talk, what a knowledgeable woman and a great end to the weekend.

A big thanks again this year to all at **Shannonside AS** for a great weekend, and despite the lack of observing weather I really enjoyed myself.

# Neill Mc Keown's October Observing Guide 1

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## OBSERVING GUIDE

(Please note all times are BST unless otherwise stated and are based on an observing location of Belfast and covers the month of October)

### The Sun

At the start of the month the Sun rises at 07:30 and sets at 19:00. By the end of the month, it rises at 07:25 UT and sets at 16:50 UT.

### The Planets

**Mercury** is at inferior conjunction on the 6<sup>th</sup>, but is well placed for observation from mid-month onwards. It is at greatest western elongation on the 22<sup>nd</sup>. It is a morning object during the month. At mid-month it rises at 06:20 and is mag +0.6. By the 22<sup>nd</sup>, it rises at 06:15, almost two hours before the sun and is mag -0.5. By month's end, it rises at 05:50 UT, an hour and an half before the sun and is mag -0.9. It can be located in Virgo.

**Venus** is an evening object this month and is currently moving slowly away from the Sun; however it is not well placed for observation as it appears very low in the sky at sunset. It sets less than an hour after the Sun at the start of the month at 19:45 and by month's end; it sets over an hour after the Sun at 18:05 UT. It brightens from mag -3.9 to mag -4.0 during the month.

**Mars** is not visible this month.

**Jupiter** can be found in Sagittarius. It is currently low down in the sky and as a result poorly placed for observation. At the start of the month, it rises during daylight hours and sets at 23:15. By month's end, it sets at 20:35 UT. It fades from mag -2.3 to mag -2.1 during the month. The four Galilean moons – Io, Europa, Ganymede and Callisto are visible with 10x50 binoculars or a small telescope and are worth a look.

**Saturn** is a morning object this month and can be located in Leo. It rises at 05:05 at the start of the month and by month's end; it rises at 02:30 UT. It maintains its brightness at mag +1.0 during the month.

**Uranus** can be found in Aquarius and is well placed for observation. At the start of the month, it rises during daylight and sets at 05:45. By month's end it sets at 02:40 UT, just within naked eye visibility and fading from mag +5.7 to mag +5.8 during the month. It can be located within four degrees to the North-East of **Phi Aquarii**.

**Neptune** can be found in Capricornus. At the start of the month, it rises during daylight hours and sets at 03:00 and by month's end it sets at 23:55 UT. The planet lies to the North and slightly to the West of the pair of stars **Delta** and **Gamma Capricorni**. It maintains its brightness at mag +7.9 during the month

# Neill Mc Keown's October Observing Guide 2

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## The Moon

The first quarter moon is on the 7<sup>th</sup> with the full moon on the 14<sup>th</sup>. The last quarter moon is on the 21<sup>st</sup> with the new moon on the 28<sup>th</sup>.

On the evening of the 2<sup>nd</sup>, look out for the 11% illuminated waxing crescent moon, lying South-East of **Venus**, very low in the South-West.

On the evening of the 6<sup>th</sup>, the first quarter moon lies to the West of **Jupiter**.

On the evenings of the 9<sup>th</sup> and 10<sup>th</sup>, the waxing gibbous moon lies close to **Neptune**. On the 9<sup>th</sup>, a 73% illuminated moon lies to the West of the planet and the following night, a 82% illuminated moon lies to the East of the planet.

On the evenings of the 11<sup>th</sup> and 12<sup>th</sup>, the waxing gibbous moon lies close to **Uranus**. On the 11<sup>th</sup>, a 89% illuminated moon lies to the West of the planet and the following night, a 95% illuminated moon lies to the East of the planet.

On the morning of the 17<sup>th</sup>, a 92% illuminated waning gibbous moon lies to the East of **M45 – The Pleiades**.

On the morning of the 22<sup>nd</sup>, a 44% illuminated waning crescent moon lies to the South-East of **M44 – The Beehive Cluster**.

On the morning of the 25<sup>th</sup>, a 13% illuminated waning crescent moon lies to the South of **Saturn**.

On the morning of the 27<sup>th</sup>, a 2% illuminated waning crescent moon lies to the South of **Mercury**.

## Meteors

The ZHR or Zenithal Hourly Rate is the number of meteors an observer would see in one hour under a clear, dark sky with a limiting apparent magnitude of 6.5 and if the radiant of the shower were in the zenith. The rate that can effectively be seen is nearly always lower and decreases as the radiant is closer to the horizon. The Zenith is the overhead point in the sky for an observer. The radiant is the point in the sky, from which (to a planetary observer) meteors appear to originate, i.e. the Perseids, for example, are meteors which appear to come from a point within the constellation of Perseus. There is one major shower and four minor showers this month. The first minor one is the **Delta Aurigids**.

It peaks on the 3<sup>rd</sup> with a ZHR of 3. Lunar conditions for this peak are excellent with the 19% illuminated waxing crescent moon setting at 19:40 on the evening of the 3<sup>rd</sup>.

## Neill Mc Keown's October Observing Guide 3

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The second shower of the month is the **Draconids**. They peak on the 8<sup>th</sup> with a variable ZHR. They are characteristically slow moving and lunar conditions for this peak are favourable with a 65% illuminated waxing gibbous moon in Capricornus setting at 00:30 on the morning of the 9<sup>th</sup>. Another minor shower this month is the **Epsilon Geminids**. They peak on the 18<sup>th</sup> with a ZHR of 2. Lunar conditions are poor for this peak with a 79% illuminated waning gibbous moon rising at 19:45 in Auriga on the evening of the 18<sup>th</sup>.

The major shower this month is the **Orionids**. They peak on the morning of the 21<sup>st</sup> at around 04:00 with a ZHR of 25. Lunar conditions are poor for this peak with a 56% illuminated waning gibbous moon rising at 22:20 on the evening of the 20<sup>th</sup> in Gemini. The shower is noted for fast meteors with persistent trains. The final shower of the month is the **Leo Minorids**. They peak on the 24<sup>th</sup> with a ZHR of 2. This peak is also affected by lunar interference with a 15% illuminated waning crescent moon rising at 04:00 on the morning of the 25<sup>th</sup> in Leo.

### Asteroids

**Vesta** is at opposition on the 31<sup>st</sup> when it will be mag +6.4. At the start of the month, it can be found in the head of Cetus, North of **Menkar (Alpha Ceti)**. It then moves Westward as the month progresses and by month's end has moved out of the head of Cetus, lying three degrees to the West of **Gamma Ceti**.

### Comets

**Comet 17/P Holmes** is visible during October as a morning comet low in the East. It can be located in Cancer, lying roughly North-East of **M44 – The Beehive Cluster**. Its situation improves as the month goes on. Current predictions estimate its brightness around mag +7 with it expected to slowly fade.

**Comet 29P/Schwassmann-Wachmann** is also visible in Cancer during October. It lies roughly to the North of **M44 – The Beehive Cluster**. It was in outburst at the end of September which saw a three magnitude brightening down to mag +11.

**Comet 2008/A1 McNaught** can be located very low in the West after sunset. It starts October in Libra, moving into Ophiuchus by month's end. It is predicted to start the month at mag +7 fading by one magnitude during October. Around the 21<sup>st</sup>, it will lie roughly to the North-West of globular cluster **M107** and around the 25<sup>th</sup>; it will lie roughly to the North-West of **Zeta Ophiuchii**.

**Comet 2006 OF2 Broughton** starts October in Camelopardus and moves into Lynx by month's end. It is circumpolar and thus well placed for observation. It is predicted to remain around mag +10 for the month.

**Comet 2006 W3 Christensen** starts October in Cassiopeia and moves into Cepheus by month's end. It is also circumpolar and is predicted to remain around mag +10 for the month.

## Neill Mc Keown's October Observing Guide 4

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**Comet 85P/Boethin** is predicted to brighten from mag +12 to mag +9 during October. It can be located low in the South-West, moving Eastward away from Sagittarius towards Capricornus. It lies roughly North-East of **Jupiter** and South-West of **Neptune**.

### Deep Sky

On the deep sky front this month, galaxies M81 and M82 can be observed in Ursa Major. Check out the constellation Canes Venatici with several galaxies including M51 - the Whirlpool Galaxy and M63 - the Sunflower Galaxy. In Lyra, M57 - The Ring Nebula can be observed. In Vulpecula, M27 - The Dumbbell Nebula can be found. In Andromeda, M31 - The Andromeda galaxy can be observed along with its satellite galaxies M32 and M110. In Perseus, there is the open cluster M34 and the excellent Double Cluster - NGC 869 and 884. In Triangulum, there is the galaxy M33. Finally Auriga is reappearing with its three open clusters M36, M37 and M38 as is Taurus with the excellent Pleiades - M45.

For further observing information, check out <http://www.eaas.co.uk/stargazers.html>

### General Notes

Always keep an eye out for **Aurorae**.

Check out [www.stronge.org.uk/spaceweather.html](http://www.stronge.org.uk/spaceweather.html) for the most up-to-date information on the aurorae. The autumn equinox is on the 22<sup>nd</sup> which sees the end of summer and the beginning of autumn. This is the day where the lengths of day and night are the same and after this the night will take over cumulating with the shortest day of the year on the winter solstice in December.

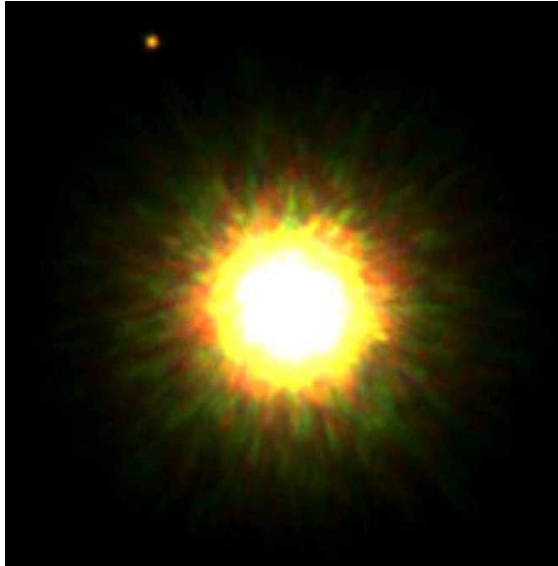
Other interesting naked eye phenomena to look out for include the **Zodiacal Light** and the **Gegenschein**. Both are caused by sunlight reflecting off dust particles which are present in the solar system. The **Zodiacal Light** can be seen in the West after evening twilight has disappeared or in the East before the morning twilight. The best time of year to see the phenomenon is late-Feb to early-April in the evening sky and September/October in the morning sky -- it's then that the ecliptic, along which the cone of the zodiacal light lies, is steepest in our skies. The **Gegenschein** can be seen in the area of the sky opposite the sun. To view either, you must get yourself to a very dark site to cut out light pollution. When trying to observe either of these phenomena, it is best to do so when the moon is below the horizon. If you are observing them when the moon has risen, restrict efforts to the period 4 days either side of the new moon otherwise the moonlight will be sufficient to drown them out. Finally check out [www.heavens-above.com](http://www.heavens-above.com) for the latest passes of the International Space Station and satellites, details of Space Shuttle launches and passes and for details of Iridium Flare activity and remember our next meeting is on October 6<sup>th</sup> with the lecture entitled "10 Minute Astronomy - Favourite types of object to observe and the equipment used to observe them" by various EAAS members.

Clear Skies

Neill McKeown

## Astronomy News 1

### First Planet Imaged around Sun-like Star?



Astronomers have taken what may be the first picture of a planet orbiting a star similar to the sun. This distant world is about eight times the mass of Jupiter and lies about 330 times the Earth-Sun distance from its star, which is similar to our own sun. Astronomers used the Gemini North telescope on Mauna Kea in Hawaii to see the planet and its star, 1RXS J160929.1-210524, which is 500 light-years from Earth. Although the star has about 85 percent the mass of the sun, it is younger. The planet, at about 1,500°C, is also much hotter than our own Jupiter, which has a temperature of about -110°C.

"This is the first time we have directly seen a planetary mass object in a likely orbit around a star like our sun," said David Lafrenière, an astronomer at the University of Toronto who led the team that discovered the star. "If we confirm that this object is indeed gravitationally tied to the star, it will be a major step forward."

Further study will be needed to prove that the planet is in fact orbiting around the star, as opposed to the possibility, however unlikely, that the two objects just happen to lie in the same area of the sky at roughly the same distance from us.

"Of course it would be premature to say that the object is definitely orbiting this star, but the evidence is extremely compelling," Lafrenière said, "and this will be a very intensely studied object for the next few years!"

The team discovered the new planet as part of a survey of more than 85 stars in the Upper Scorpius association, a group of young stars formed about 5 million years ago.

## Astronomy News 2

### Phoenix to listen to Sounds of Mars

NASA scientists hope to hear what it sounds like on the surface of Mars for the first time when they attempt to switch on the Phoenix Mars Lander's microphone in the next week or two.

Phoenix's microphone is a part of the Mars Descent Imager system that was included on the underside of the lander to take downward-looking images before the spacecraft touched down on the planet's surface. MARDI was originally designed for the Mars Surveyor 2001 Lander missions, which were eventually cancelled.

The plan to use the imager and microphone on May 25 (when Phoenix landed) was scrapped when tests showed that using the system would create an unacceptable risk to a safe landing for Phoenix.

The team needed NASA's approval for funding to turn on the microphone, and now they have received the go-ahead. They can't flip the switch right away, as there are still a few checks that need to be done, and Phoenix's software needs to be changed.

Once all the preparations are ready, the team plans to try to turn the microphone on while the lander is digging or using the rasp on the end of its robotic arm scoop, just to make sure they hear something.

Phoenix scientists aren't sure just what, or how much, they'll hear. For one thing, Phoenix's mike is not a professional microphone, and Principal Investigator Peter Smith of the University of Arizona said he likened it to the microphones used on a standard mobile phone.

Sound waves don't travel as far on Mars as they do on Earth because Mars' atmosphere is thinner. It would be similar to listening to sound at an altitude of about 100,000 feet above Earth's surface.

If the team can hear Phoenix's operations, they'll then turn the microphone on while Phoenix is quiet and just see what they can hear.

Peter Smith said "We're just kind of cranking it up"



## Astronomy News 3

### Mars Lander Sees Falling Snow

NASA's Phoenix Mars Lander has detected snow falling from Martian clouds. A laser instrument designed to gather knowledge of how the atmosphere and surface interact on Mars has detected snow from clouds about 2.5 miles above the spacecraft's landing site.

Data shows the snow vaporizing before reaching the ground.

Phoenix soil experiments also yielded clues pointing to calcium carbonate, the main composition of chalk, and particles that could be clay. Most carbonates and clays on Earth form only in the presence of liquid water.

Images of layered sedimentary deposits and deltas on Mars have also provided evidence for lakes and flowing rivers that carried eroded material downstream.



A team of researchers also believes there is evidence for precipitation in the Red Planet's past. "For years scientists have been suspecting that the current appearance of the landscape has, in part, been shaped by rivers that cut into the surface," said Ernst Hauber of the German Aerospace Centre. "We can see layered sediments where these valleys open into impact craters. The shape of certain sediments is typical for deltas formed in standing water."

Hauber and his team also believe that surface runoff from rain or snowmelt completes the picture of past water on Mars.

Since landing on May 25, Phoenix already has confirmed that a hard subsurface layer at its far-northern site contains water-ice. Determining whether that ice ever thaws would help answer whether the environment there has been favourable for life, a key aim of the mission.

Temperatures in the planet's polar region already are dipping to 130 degrees below zero, with frost and fog every night. The weather ultimately will limit the spacecraft's life. As the sun dips below the horizon for longer periods each day, it provides less energy to power the spacecraft's solar arrays. Eventually, Phoenix will consume more power than it produces, draining the batteries and causing the onboard instruments to freeze.

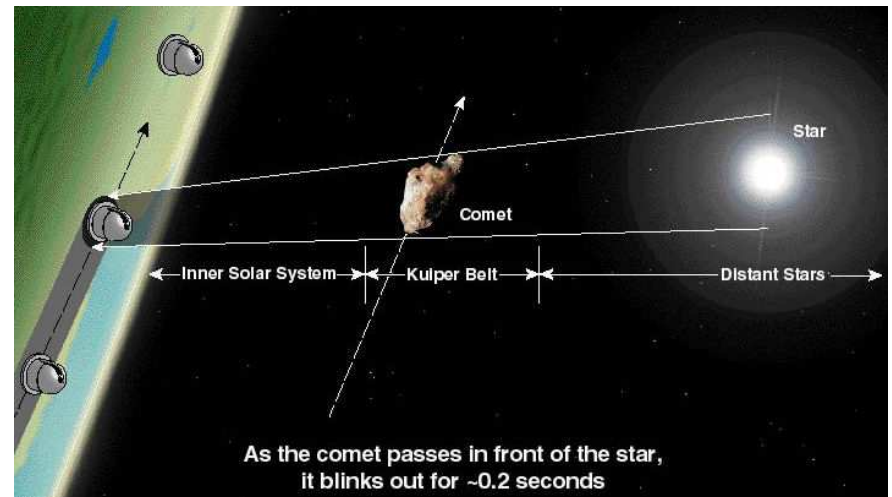
## Astronomy News 4

### Kuiper Belt "not as crowded as first thought"

The Taiwanese-American Occultation Survey (TAOS), has spent 2 years periodically photographing portions of the sky to look for small chunks of rock and ice orbiting beyond Neptune, in the Kuiper Belt.

The survey targeted Kuiper Belt objects (KBOs) with diameters between 2 miles and 17 miles.

Because such objects are too small to see directly, the survey watched for stars to dim as KBOs passed in front of (occulted) them. After getting more than 200 hours of data watching for stellar flickers lasting a second or less, TAOS did not spot any occultations.



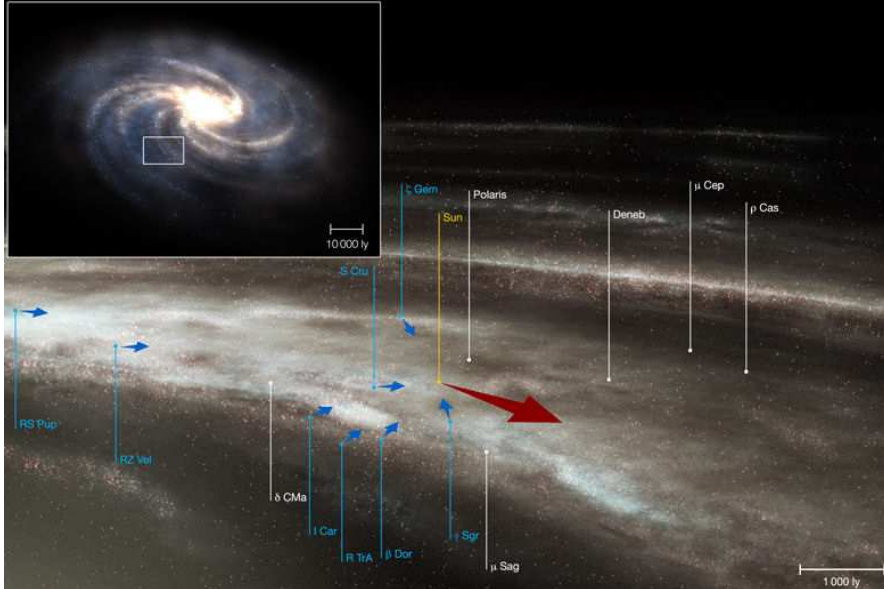
The Kuiper Belt contains objects in a range of sizes: a few very large ones (like the dwarf planets Pluto, Eris, Makemake and Haumea) and many more smaller objects. The similarity of a given size tells us information about the history of planet formation and dynamics. In particular, the size distribution of KBOs reflects a history of agglomeration, in which colliding objects tended to stick together, followed by destructive collisions, where collisional velocities were high enough to shatter the rocks involved.

Astronomers questioned whether they would find more and more objects as sizes decreased further, or whether the distribution leveled out. The fact that no occultations were seen sets a stringent upper limit on the number density of KBOs between 2 and 17 miles in diameter. The outer solar system hence appears not as crowded as some theories suggest, perhaps because small KBOs have already stuck together to form larger bodies or frequent collisions have ground down small KBOs into even smaller bits below the threshold of the survey.

## Astronomy News 5

### Cepheid Variables Not Falling Towards The Sun

Cepheid variable stars have been used for years as a way to determine distance to other galaxies. The correlation between their period of variability and absolute luminosity provides a cosmic yardstick to measure distances out to a few tens of millions of light-years.



Additionally, those Cepheids closer to us are used as tools to investigate how the Milky Way spins. But the motion of the Cepheids in our galaxy has confused astronomers, as they appear to fall towards the Sun, with a mean velocity of about 2 km/s even when the rotation of the Galaxy is taken into account. A debate has raged for decades as to whether this phenomenon was truly related to the actual motion of the Cepheids and, consequently, to a complicated rotating pattern of our galaxy, or if it was the result of effects within their atmospheres.

But new observations show that they aren't falling, and that the much debated, apparent 'fall' does in fact stem from properties of the atmospheres around these variable stars.

Scientists observed eight Cepheids with the HARPS (High Accuracy Radio Velocity Planet Searcher) spectrograph, attached to the 3.6-m ESO telescope up in the Chilean Atacama Desert. HARPS is best known as a very successful planet hunter, but it can also be used to resolve other cases, where its ability to determine radial velocities - the speed with which something is moving towards or away from us - with phenomenally high accuracy is invaluable. The astronomers found that the deviations in the measured velocity of Cepheids were linked to the chemical elements in the atmospheres of the stars considered.

## Astronomy News 6

### A Happy Birthday to NASA!!!

October 1<sup>st</sup> 2008 saw the 50<sup>th</sup> anniversary of **NASA, the National Aeronautics Space Administration**.

Those 50 years have seen NASA go from the first faltering steps of early spaceflight through to the initial tragedy and eventual success of the **Apollo** moon landing missions.

The budget cuts and the loss of public interest following Apollo did not deter NASA from following through with the **Space Shuttle** missions, again success tempered with the loss of two of the vehicles and their crews. Since then the emphasis has been on robotic probes, with manned missions kept to Earth orbit, building and expanding the **International Space Station** and servicing the hugely successful **Hubble Space Telescope**.

Future plans are now in progress for a return to the Moon and an eventual mission to visit Mars.

This is the aim of the **Constellation** program, with the **Ares** lifting vehicle and **Orion** spacecraft planned to replace the Shuttles after their retirement in 2010, and they will become the vehicles to fly the NASA flag for the next 30-40 years.

We wish NASA every success for the next 50 years, and who knows what will be achieved by then, if the imagination, courage and vision of the organisation during the first 50 years holds true.



### С днем рождения спутник!

Or, to translate from Russian, Happy Birthday Sputnik!

Fifty one years ago on Oct. 4, 1957, the Soviet Union launched Sputnik I — little more than a beeping metal ball — into space.

Never before had an artificial object actually orbited the Earth.

That achievement stunned and alarmed America. It also triggered an epic space race between the world's superpowers that would culminate nearly 12 years later, when Apollo astronaut Neil Armstrong stepped onto the moon.

The Soviets never made it there. Sputnik 1 burned up on January 4, 1958 as it fell from orbit upon reentering Earth's atmosphere, after traveling about 37 million miles and spending 3 months in orbit.

## Uranus- Seek it out!

Here is a trivia question: How many planets, excluding Earth, are visible without a telescope?

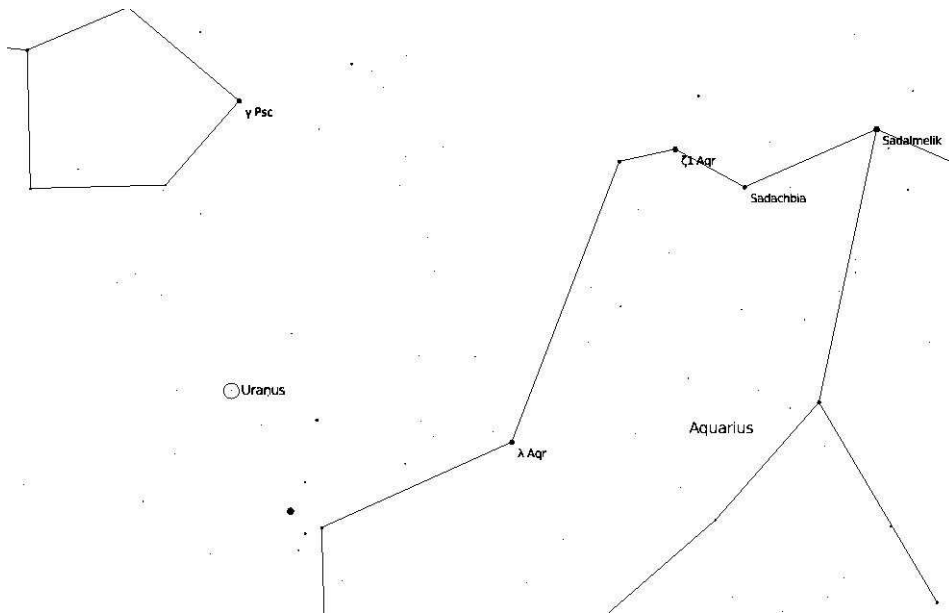
Most will answer "five" (Mercury, Venus, Mars, Jupiter and Saturn).

Six, in fact, is the correct number, but if you exclude our own world, there is indeed one other planet that can be spied without optical aid: the planet Uranus.

This is a fine time to try and seek it out, especially since it is now favourably placed for viewing in our evening sky if the moon is not overly bright.

Of course, you'll have to know exactly where to look for it. Barely discernable by a keen naked eye on very dark, clear nights, Uranus, currently shining at magnitude +5.7, is now visible during the evening hours among the stars of Aquarius.

On this scale, larger numbers are dimmer, with magnitude 6.0 being about the dimmest object visible under ideal, dark-sky conditions.



It is best to scan the region with binoculars first. Using a magnification of x150 with a telescope of at least three-inch aperture, you should be able to resolve it into a tiny, pale-green featureless disk. Uranus, which currently lies 1.868 billion miles from the sun, has a diameter of about 31,700 miles and according to flyby data from Voyager 2 in 1986, has a rotation period of 17.4 hours. At last count, Uranus has 27 moons, all lying in orbits around the planet's equator in which there is also a complex of nine narrow, nearly opaque rings, which were discovered in 1978.

## Society News 3

### Society Member Visits Historical Scopes



On a visit to Southern California EAAS member Eamonn Keyes managed to turn a holiday into a truly astronomical journey.

After making contact with Alex McConahey, the President of Riverside Astronomical Society, one of the most prestigious groups in North America, Eamonn was treated to visits to the famous Mount Palomar, Mount Wilson and Griffiths Observatories.

At Mount Palomar he was given an exclusive tour by Richard Garcia, a RAS member who is a Palomar Tour guide, with full access to non-public areas.

In addition he was invited to spend a weekend observing with the RAS at their High Desert facility GMARS (Goat Mountain Astronomy Research Centre).

This is at a height of 3500 feet in the Mojave Desert, and Eamonn spent the time observing the pristine skies, with constellations unseen in these latitudes, with a 22" Dobsonian lent to him by RAS, with the full use of the new 100 degree FOV Ethos eyepieces supplied by a member of the RAS who is a Televue representative.

### About the EAAS

The **East Antrim Astronomical Society** is for people all ages who share an interest in Astronomy and its related subjects.

Everyone is welcome to join us or to attend our meetings, and we meet monthly in the Lecture Theatre at Ballyclare High School

Directions can be found online at <http://www.eaas.co.uk/location.html>

We can be contacted through our website at <http://www.eaas.co.uk> or through our Online Forum at <http://eaas.proboards31.com/>

# EAAS Member Profile

This month we quiz our new EAAS Chairperson, the shy and retiring **Mia Hanna**.



## 1. How and when did you get interested in Astronomy?

I got interested in astronomy in 1979 when Skylab fell to earth.

Ignorance isn't bliss and thanks to an older brother who told me if a tiny screw fell on the house it would be demolished, I stood in a field for ages until it finally fell in Australia. Hale-Bopp fired the interest again in 1997 and I haven't looked back since... which is a bit difficult when reversing.

## 2. What equipment do you use for observing?

Apart from my eyes and my 10x50 binoculars, I've an ETX 105 EC which is my baby, a great scope which will soon be put to use in Astrophotography, though a Dob is on the cards for next year, fingers crossed so I

can still observe whilst imaging. I also use my Ipad as a companion if I'm observing alone. Usually a bit of John Dowland gives the night a nice astronomical feel!

## 3. What is your particular interest in Astronomy?

Thanks to my lovely dark site right outside my back door, I LOVE observing, especially with the rest of the EAAS, as I get to use different telescopes. Of course if Stevie's there, I can even dispense with the GoTo!!!

## 4. What are your Top Five objects for observing?

I might be a bit boring here! Comets! I love clusters, especially open clusters, with M44 and M11 being my two favourites. I could look at them for hours.

The Coathanger just makes me smile, as it was one of the first things I spotted whilst trailing the sky with binoculars and I fell over in shock!

Thanks to Stevie's enthusiasm, I've developed a passion for double and multiple stars, and the ETX 105 is great for observing them and women are better at determining the colours apparently!

Saturn is just a beauty, though the rings are going to be edge on shortly.

I love watching meteors shoot across the sky, as they give me a buzz! (sorry, Stevie!)

## 5. Have you any useful hints for members?

THERMALS!! Half the battle is staying warm and I love my thermals, I've never come in from observing due to the cold. Stay warm and stay out.

And never be afraid to ask questions, no matter how silly they might seem. It's a huge learning curve!

# Solar and Lunar Data for October 2008

NightCal		October 2008						
UT + 1 hr		Mon	Tue	Wed	Thu	Fri	Sat	Sun
Lat: 54° 35' 49" N Long: 005° 55' 45" W								
20:46	7	20:59	1	2	3	4	5	6
07:36	8	07:26	9	10	11	12	13	14
18:47	15	18:59	16	17	18	19	20	21
07:36	16	07:26	17	18	19	20	21	22
18:47	23	18:59	24	25	26	27	28	29
07:36	30	07:26	31	1	2	3	4	5
18:47	7	18:59	8	9	10	11	12	13
07:36	14	07:26	15	16	17	18	19	20
18:47	21	18:59	22	23	24	25	26	27
07:36	28	07:26	29	30	31	1	2	3
18:47	5	18:59	6	7	8	9	10	11
07:36	12	07:26	13	14	15	16	17	18
18:47	19	18:59	20	21	22	23	24	25
07:36	26	07:26	27	28	29	30	31	1
18:47	3	18:59	4	5	6	7	8	9
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# The Night Sky Mid-October 21.00 BST

