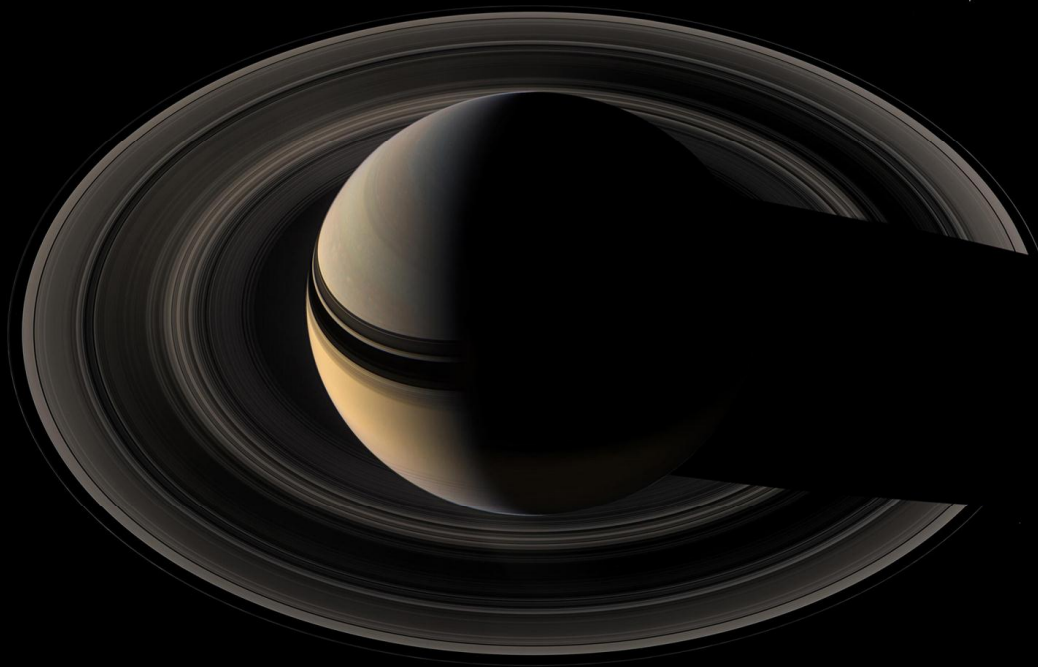


**In this issue: Darke Skies + NASA's SpacePlace:
May's triple conjunction + Some Old Controversies
in Transactions with Old Boots**



+ An invitation to the Society's 20th Birthday Party

SATURN:

The ringed planet comes to
opposition

- May 2013 -

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Events list

Sunday 19 May: **Annual astrophotography competition**

Saturday 25 May: Full Moon

Saturday 8 June: New Moon

Sunday 16 June: **Herrington Country Park Summer Festival**,
11am . 5pm

Sunday 23 June: Full Moon

Saturday 29 June: **SAS 20th Birthday Party!** Including a
presentation by former Astronomer Royal Professor Sir
Arnold Wolfendale and history of the SAS with our own
Graham Darke

Sunday 07 July: Solar observing session

Saturday 13 July: Visit to **National Space Centre**, Leicester

All Society events

- are free,
 - are held in the Washington WWT facilities, and
 - evening meetings start at 7:00pm
- unless otherwise noted.**

Please bring a torch and warm clothing to any night-time observing sessions.

All observing sessions are dependent upon favourable weather and **may be subject to cancellation.**

Editorial: As we approach 20 years of the SAS...

Dear Members,

While the weather hasn't known what to do with itself, there have been some clear spells that have allowed decent observing. I hope that, like me, you have managed to get out and make the most of the clear sky before the nights become just too light to see the faint stuff. Jupiter is still shining in the west after sunset, Saturn is high in the south, and we have an interesting conjunction of planets later this month (see *Space Place*, this issue). Will many of you be able to spot Mercury? It's normally the hardest planet to spot from this latitude.

I'm sure that Gary Fildes, the former SAS Secretary, mentioned at our last meeting that he was off to Chile for three weeks for a grand tour of the many observatories in that country. While he's away, yours truly is doing his best to help look after Kielder Observatory . which keeps me out of mischief and within reach of a twenty inch telescope. Can't be bad! But it does partly explain the late appearance of this issue, for which I apologise. (Grovel, grovel)

This may be the last issue of SAS News before we hold the **Society's 20th Birthday Party on 29th June**, although I'm sure we will also be issuing invites before the event. If you haven't already done so, please put the evening of 29th June in your diary. Please come along and help us celebrate 20 years of the Sunderland Astronomical Society . a milestone that represents two decades of hard work and success by all of our members over the years. I'd love to think we'd still be around to celebrate its 40th birthday too! (I suspect that we will have a celebration of some sort next year too when the Society comes of age at its 21st!)

Don't forget to bring your images along to the **Astrophotography Competition** on Sunday!

Hope to see you there, Dave N., Editor.

SAS Yahoo Forum

The Society's Yahoo group provides a forum for members to exchange ideas, ask questions, and a place to post their pics:

<http://tech.groups.yahoo.com/group/SunderlandAstronomicalSociety/>

Triple Treat

By Dr Ethan Siegel

The solar system is a busy place, with five wandering planets visible to the naked eye alone. When any two pass close by each other from our point of view, we see an astronomical *conjunction*, but on very rare occasions, three planets will find themselves grouped together: a *triple* conjunction. Towards the end of May, Mercury, Venus and Jupiter will treat us to the best triple conjunction in years.

On May 25th, Mercury will pass within 1.4° of Venus, then two days later Mercury comes within 2.4° of Jupiter, and finally on the 28th, Jupiter and Venus approach within 1° of one another. If it weren't for the slight orbital tilt of our solar system's planetary orbits, these conjunctions would all be *occultations* instead. During the nights of May 26th-27th, all three planets are visible immediately after sunset within the same 3° field of view, with the triple conjunction peaking in a triangular shape on the 26th. (For scale, the full Moon subtends about 1/2°.) The three planets appear close together for a few days more, making a line in the sky on the 30th/31st.

How does this happen? Mercury and Venus race around the Sun far faster than Earth, with Mercury completing more than four revolutions around the Sun for each one that Earth makes. At the same time, Jupiter is far slower, taking 12 years to orbit just once around the Sun. Jupiter's been high in the sky during the early parts of the night, but steadily lowers throughout May as Earth continues to move away from it, approaching its maximum distance from Earth. Mercury and Venus, meanwhile, begin to move out from behind the Sun during May: Venus at the beginning of the month and Mercury in the middle.

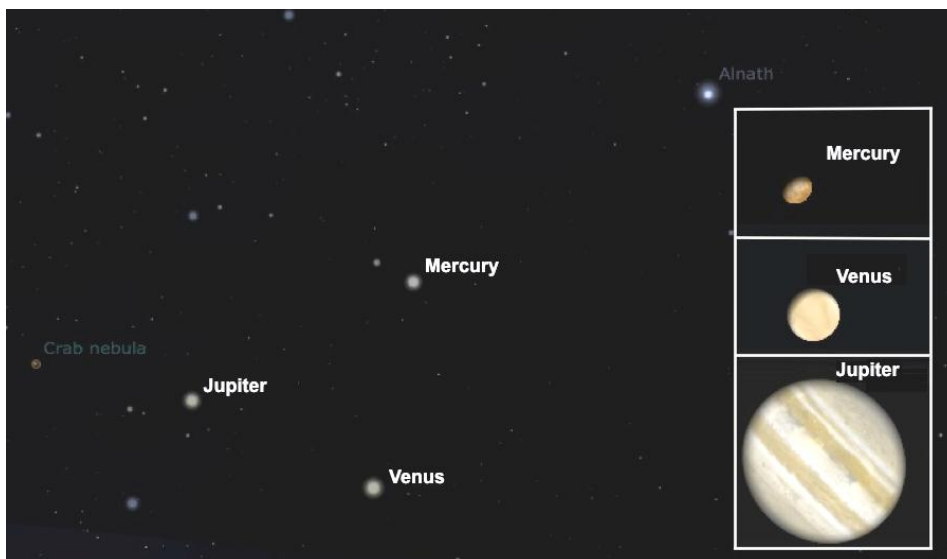
Thus, during this triple conjunction, *all three* planets will be on the far side of the Sun, something that happens just 25% of the time in triple conjunctions involving Mercury and Venus! If you telescopically resolve these planets into disks, you'll see our inner worlds in a nearly-full gibbous phase. Jupiter will appear largest in

terms of angular diameter, followed by Venus and lastly by Mercury. Just a year ago, during its now-famous transit, Venus took up more than a full arc-minute in the sky; during this conjunction, it will just *one-sixth* that angular size and less than a third the apparent diameter of Jupiter.

Nevertheless, Venus will still be more than **six times** as bright as Jupiter during this time, outshining all night-sky objects other than the Moon. Closer conjunctions of two naked-eye planets are frequent, but getting three or more like this happens just once or twice per decade, so don't miss your chance to see it.

And speaking of occultations, The Space Place has a great kid-friendly explanation of the Venus transit and solar eclipses of 2012 at spaceplace.nasa.gov/venus-transit.

Dr. Ethan Siegel, a theoretical astrophysicist, is a professor at the University of Portland (OR) and Lewis & Clark College.



Left: The image shows the configuration of Mercury, Venus, and Jupiter in the western sky just after sunset on May 26, 2013. Insets show the relative size appearance of the planets on that date.



elliptical fuzzy glows. But see how many of the other NGC designated galaxies in the chain you can spot.

The Galaxies of Spring

Spring is a time when amateur astronomers attempt Messier Marathons due to the fact that this time of year is conducive to trying to track down nearly all of the Messier objects in one long night. The soundtrack is often the bleating of new born lambs as nature is starting to reawaken from its Winter slumber. Messier Marathons are fun, but this column rarely advocates looking at Messier objects, instead directing the keen observer towards some of the more obscure, overlooked or less fashionable objects. Spring is a great time for hunting down galaxies in the area around Coma Berenices and Virgo. Anyone at the recent Kielder star camp fortunate enough to get clear skies might have tracked down some of these island universes. I know I went along hoping for the opportunity but alas the clouds....

Galaxy hunting is best done from a reasonably dark site. With a few notable exceptions, galaxies are very difficult to make out in light polluted areas, and to pick them out visually at the eyepiece can take good, transparent conditions, a decent sized telescope, patience and some practice. I remember the frustration I felt as a teenager trying to navigate the Virgo/Coma Galaxy Cluster with a three and half inch reflector from my parents suburban back garden in Sunderland in the 1980s. My star atlas was telling me that the eyepiece field of view should be full of galaxies but I didn't spot any, not one! Our usual observing haunt, Derwent Reservoir, is plenty dark enough to spot all of the objects in this month's tour with a 6 inch refractor or a 10 inch reflector and most of them with smaller equipment than this. What better excuse could you need to join us at Derwent?

Markarian's Chain (top, right) is a string of galaxies on the Coma/Virgo border which can be found between the bright stars Vindemiatrix in Virgo and Denebola in the hind quarters of Leo. Often, from a dark site, up to a dozen galaxies may be seen in one wide eyepiece field. The Chain is centred around the giant galaxies M84 and M86 which resemble two



Of particular interest are the pair NGC 4435 and NGC 4438 which are an interacting pair which together are often referred to as the eyes. The Chain is named after an Armenian astrophysicist called B. E. Markarian who discovered the common proper motion of the galaxies in his chain in the 1960s although the structure had been known about for some time before then.

The Mice is the name given to two interacting galaxies in Coma Berenices which are catalogued as NGC 4676. The name comes from the unusual appearance of the galaxies which due to tidal interactions have formed long tails of stars which have been stripped away from the galaxies' main disks. The Hubble Space Telescope has taken a fantastic image of this pair.



You might imagine when looking at some of the breathtaking images which the HST has produced down the years that many objects are simply beyond amateur owned

equipment, but you'd be wrong. You are not going to see the colour or vivid detail but you can certainly see them and one of the tails is quite clear. The other is, admittedly, hard to spot. A 10 inch or bigger telescope will show both components as quite distinct from each other with a hint of a tail on one of them. The overall magnitude for the pair is given as 14.4 and 14.7, which is pretty faint. How small a telescope can you see them in?

Next on our target list for the month is NGC4565 again in Coma Berenices. This is a large edge-on spiral galaxy with a pronounced dust lane running across it. I have seen the galaxy easily in a 6inch reflector but I've always needed a bit more light grasp to see the dust lane. A 10 inch reflector will show it from a dark site away from streetlights.



At the eyepiece the galaxy looks like a long thin pointed spindle. The dust lane runs right across it from tip to tip. Start at a fairly low magnification of between 50x and 75x and work up to between 150x and 200x once you have the galaxy centred. This helps to darken the sky background and helps it to stand out better.

Another edge on spiral galaxy, this time located higher up in the sky in the constellation of Canes Venatici is Caldwell 29 (NGC5005).



At the eyepiece this one looks like a fainter and larger version of the galaxy M82. This one is

easy to spot in a 6 inch reflector from Derwent filling half of the field of view at 75 times magnification.

Now we're moving away from galaxies to take a look at a couple of pretty double stars. Gamma Virginis or Porrima is a tight double star with components of roughly equal magnitude (around 3.5). Both components are a cream colour. Because the separation of the two components is so small (around 6 arc seconds) this is a challenging object for small telescopes and will require a night of very steady seeing to split. Those with larger telescopes should fare better as long as the seeing co-operates.

The double star 24 Coma Berenices is a nice colour contrast double, showing green/blue and yellow components. It is easily split with small telescopes. It appears to be a member of the Coma Star Cluster, Melotte 111, but actually it isn't. The cluster lies at a distance of around 280 light years away. 24 Coma Berenices is more than twice as far away at close to 600 light years.



Do make the most of the remaining dark nights to try and spot a few of these objects. Perhaps we might see some images of some of them in this year's photography competition? And remember that Saturn is currently placed in the constellation Libra, next door to Virgo, adding another dimension to your Spring galaxy hunt.

Back soon with more obscure gems from the observing memory banks!

Clear Skies,

Some Old Controversies in Transactions



With "Old Boots"
{An old and esteemed
correspondent continues
his reminiscences of the
controversies which
raged in the earlier
numbers of this journal.}

"...And another thing, Miss Chatterley; how is it that Simpson only knows the way to your house after dark?..."

Norton Internet Security

The lecture of 1859 March was given by "Old Bystander" and entitled; "Washington New Town and Its Connexions with Early South American Civilizations." A lively debate followed as he tried to prove beyond reasonable doubt that connexions did in fact exist!

Old Bystander was a long standing archaeologist and harmonium player who had explored much of South America in his early days. It appears that during the construction of an observatory in Washington New Town, a large Meso American stele was excavated while preparing the foundations! Needless to say, Transactions received many letters concerning stele from subscribers around the globe.

"Cacti Peyote" a foreigner from Las Mestenas, Republic of Mexico, had the most to say and in one of several letters stated; "Si Gringo(!); It may be fact or fiction, but your claim of finding stele in the North-East of England only goes to prove that plagiarism is rife within the Society. No archaeologist worth his nachos' has the right to the exclusive discoveries made by others."

In one issue, Cacti Peyote had four letters, totaling nearly twenty closely printed columns, for the type was smaller than it is now and finishing with a word on the situation re. Aficionado ("Plan View" replied saying that the Aficionado was in a satisfactory condition and sitting upright in a hospital bed, although with devices to support him).

Sunny Spells Expected

Old Bystander's specialties were archaeoastronomy, rigging and the Norwegian harmonium, but he also wrote extensively on graduated chucks for cutting nuts, sewing machines and the angle of teeth for circular saws (to be corrected by a note on page 285). The subject was taken over in Volume 5 by the masonry section however and ran for a good few issues. The controversy was closed when that old loose cannon known as Sigma stated;
"If the Romans were at Hylton Bridge, then South

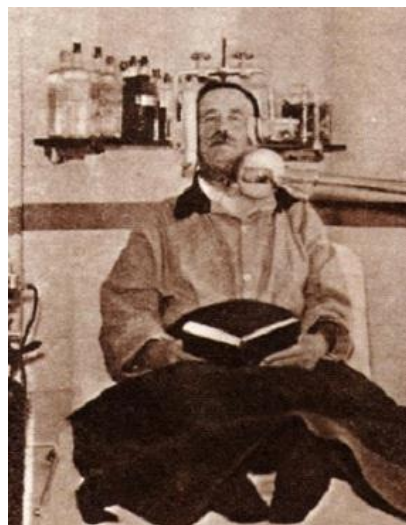
Americans 'must' have been at Washington. How else would the Mayans have learnt their masonry and brick-laying skills?"

The volume closed with solid but varied opinions on stove-pipe hats, the benefits of vegetarianism and how ladies of convention should ride their velocipedes side-saddle.



Above: The stele 'discovered' by Old Bystander in Washington New Town. Celestial alignment corresponds to the star *a Lyrae*.

Below: *Aficionado*, sitting upright in bed with devices and reading the latest *Transactions*.



{To be continuedö }



20 YEARS OF THE SAS!

It may be hard to believe but the Sunderland Astronomical Society is rapidly approaching the twentieth anniversary of its foundation.

A chance meeting of Don Simpson and Dave Newton in the spring of 1993 led to the idea of possibly forming a new society in the Sunderland region. Following up on this idea, Don drafted a letter to the Sunderland Echo at the end of June 1993, which appeared in print a few days later. This letter and a follow up to the Sunderland Star both received a warm reception from the astronomers in the city and the first official meeting of the new Sunderland Astronomical Society was not long in coming.

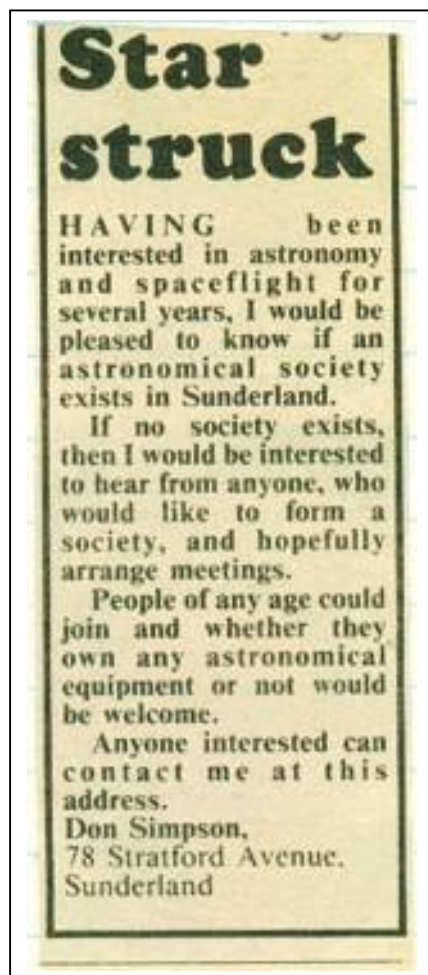
The first meeting was held in the tea rooms at Ryhope Engines Museum with about thirty people attending. Over the next couple of years meetings were held at a variety of locations, including The Victoria Gardens pub, The Ashbrooke pub, Witherwack Primary School and many members' living rooms. Eventually a settled home was found in the Quaker Meeting House opposite Roker Park. The Society remained there until the Cygnus Observatory was built and meetings moved to the Washington Wildfowl & Wetlands Trust.

To celebrate this milestone, the SAS is holding a 20th birthday party at Washington WWT on Saturday 29th June, starting at 7pm.

Amongst the celebrations, a special guest on the night will be the former Astronomer Royal, Professor Sir Arnold Wolfendale, giving a presentation on Comets and Asteroids and things that go bump in the night.

SAS founding member Graham Darke is also scheduled to give a presentation on the history of the Society.

We would love to see as many members of the Society, old and new, on the night – So please put this date in your diary and we'll hope to see you there!



Above: This letter in the Sunderland Echo on 3rd July 1993 marks the first public suggestion of a new astronomical society.

Below: The follow up letter which appeared in the Sunderland Star on 15 July 1993.



Heavens above!

Starry-eyed Sunderland lads are hoping to prove the night sky's the limit with their latest mission.

They are aiming to boldly go where no man has ever gone before and set up the city's first astronomical society.

The aim is to link like-minded people across Wearside to swap star-gazing tips and plot planetary action.

And the society's founders will be quite happy to share their expensive

By NICK SPEED

equipment with beginners and old-timers alike.

"With telescopes, size is everything," said Don Simpson, the society's secretary. "We can give advice on buying your first telescope, or making one yourself."

Don, 29, of Stratford Avenue, Grangetown, Sunderland, is currently building a radio telescope to track meteors.

The founders are eager to send the popular image of all astronomers as being like Patrick Moore, or

Coronation Street's Curly Watts rocketing down the nearest Black Hole.

"We'd hate everyone to think that we're like that," said 22-year-old insurance clerk Graham Darke, of Belford Road, Ashbrooke.

"Patrick Moore's no Chippendale, but at least he does something for astronomy. Curly Watts? Well, just look at him."

Graham was first introduced to astronomy when Halley's comet paid its last flying visit past Earth. He has inherited his telescope from his grandfather.

"I'd rather be watching the night sky than Coronation Street," said Don.

Permanent

Ultimately, the society would like to be able to have its own observatory in the city.

"Every other city and large town in the area has one," said Don.

A permanent home would save members constantly transporting the heavy and expensive telescopes and refractors.

It would also allow them to fix special drives for taking photographs of new inter-galactic finds.

But, for the moment, the society hopes to hold meetings twice a month and provide an information and advice service to keen astronomers.



● Stargazers, left to right, Graham Darke, Don Simpson, Dave Newton and Peter Blackwood.
Echo Express No. 20332

FactFile

□ Six things you can see with an astronomical telescope:

- Different seasons on Mars
- Changing belts on Jupiter
- Shifting positions of Jupiter's moons
- Saturn's rings changing place
- Supernova – exploding stars
- Space shuttle missions.

Space news

□ Amateur astronomers everywhere will have a field day later this year, according to Harvard University experts.

Stargazer George Field is predicting a giant comet 100,000 miles long will smash into Jupiter on July 16.

He says each of the comet's 21 segments will cause an explosion on the planet millions of times more powerful than the biggest atomic weapon.

