



The CHESTERFIELD ASTRONOMICAL SOCIETY Newsletter DECEMBER 2014

CAS website www.chesterfield-as.org.uk

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**Subscriptions - full membership £60
or £6 per month by Standing Order (10 months)**

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or £4 per month by Standing Order (10 months)**

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(All juniors must be accompanied by an adult who must be a fully paid up member).**

Welcome to the December issue of the CAS newsletter

CAS News

Car Park

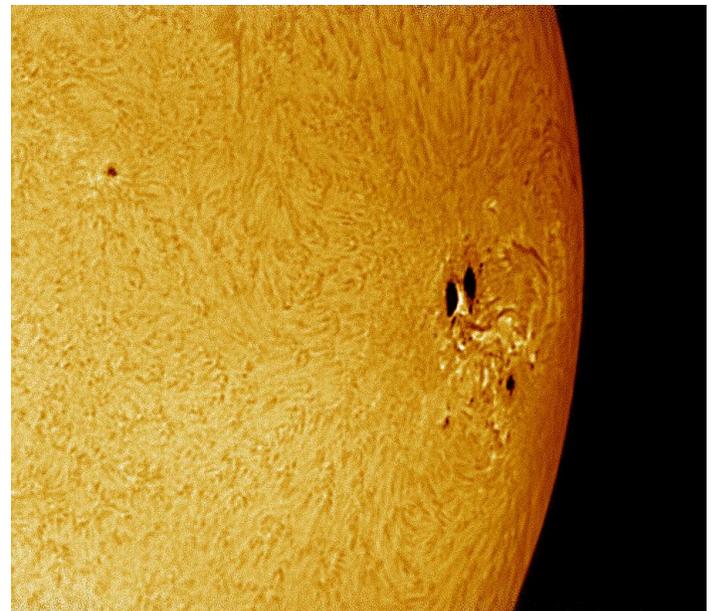
Work is due to start on the car park on Monday 1st December. It is being reinforced with BodPave. This should make the ground less water logged and muddy. This work is scheduled to take about a week so please be mindful if this is still underway the following Friday but WE ARE STILL OPEN as usual on Fridays.

Open Day/Evening – Saturday, January 24th 2015

We are hoping to organise an open day/evening on Saturday 24th January. This in part will substitute for the Stargazing Live open evenings which usually take place in January. This year, we believe, Stargazing is planned for some time in March.

We will need membership support to help organise this (you just have to be paid up members). All ideas welcome. If you can help with this please put your name on the white board in the lecture room. Thank you. Further information will be given in next month's letter.

Photo gallery.....



These are from Graham Leaver



This is from Simon Moore.....

After finally getting Uranus and Neptune I thought I'd make a picture with all the planets together. I don't remember the exact setup for each one as they were all taken at different times. Mercury and Venus were taken through a 10" Dobsonian at the same time a few years ago, I used Venus to find Mercury and used a digital camera faced up to the eyepiece for these. The other planets were taken on a 4.75" refractor using a DSLR camera at prime focus. I think Mars and Saturn have had a few photographs stacked.



*Many thanks for
this
Simon.....looks
impressive.*

Things to see in December

- Monday 1st** Jupiter now reaches its highest point in the sky in complete darkness. Look due south around 05:00 to see the planet high in the sky. At mag. -2.1 it's difficult to miss.
- Tuesday 2nd** The waxing gibbous Moon (77% lit) makes a close pass of Uranus around midnight. The Moon starts getting close to the planet from 22:00 on the 1st December; at 00:30 on the 2nd its southern limb is just 20 arcminutes away from the planet.
- Saturday 6th** A bit of Jovian magic occurs this evening as the giant moon Ganymede occults Io. The event starts at 22:11 and ends seven minutes later at 22:18. Jupiter is low in the east during this event.
- Saturday 13th** Jovian moon Europa will occult its inner neighbour Io this morning between 01:15 and 02:24.
- Sunday 14th** The Geminid meteor shower reaches peak activity at 12:00.
- Jupiter's moon Ganymede partially occults Io from 01:06 to 01:15 and totally occults Io from 1:00 to 21:55.
- Friday 19th** Magnificent Orion dominates the sky now. At midnight this most iconic of constellations lies due south. The beautiful Orion Nebula, M42, is a highlight of the region located right in the middle of the Hunter's sword.
- Saturday 20th** Jupiter's moon Europa occults Io between 05:31 and 05:15.
- Monday 22nd** The evening twilight contains a very thin waxing crescent Moon. With clear skies it may be visible 8.5° to the right of mag. -3.8 Venus.
- The annual Ursid meteor shower reaches its peak tonight with a rate of 10 meteors per hour.
- Sunday 28th** Although still rather low mag. +8.5 comet C/2014 Q2 Lovejoy is climbing higher in the sky. At 23:00 it can be found less than 1° southeast of globular cluster M79 in Lepus. The comet closes in on the cluster for the remaining part of the night.
- Monday 29th** The shadow of Ganymede eclipses Callisto between 05:52 and 06:04 this morning.
- Tuesday 30th** Europa will occult Io from 21:38 until 21:49 this evening.

ASTROSTUFF

World's First Zero-Gravity 3D Printer Installed on Space Station

It may not be a "Star Trek" replicator, but the first zero-gravity 3D printer is set up and ready for action on the International Space Station.

Station commander Barry "Butch" Wilmore of NASA installed the space 3D printer inside the orbiting lab's Microgravity Science Glovebox on Monday morning (Nov. 17). The machine and its software are in good operating condition, and the first test items will likely be printed sometime Monday, NASA officials said. "This is a very exciting day for me and the rest of the team," Mike Snyder, lead engineer for California-based startup Made in Space, said in a statement. "We had to conquer many technical challenges to get the 3D printer to this stage."

The "Potsdam Gravity Potato" Shows Variations in Earth's Gravity

People tend to think of gravity here on Earth as a uniform and consistent thing. Stand anywhere on the globe, at any time of year, and you'll feel the same downward pull of a single G. But in fact, Earth's gravitational field is subject to variations that occur over time. This is due to a combination of factors, such as the uneven distributions of mass in the oceans, continents, and deep interior, as well as climate-related variables like the water balance of continents, and the melting or growing of glaciers.

Now, for the first time ever, these variations have been captured in the image known as the "Potsdam Gravity Potato" – a visualisation of the Earth's gravity field model produced by the German Research Centre for Geophysics' (GFZ) Helmholtz's Centre in Potsdam, Germany.

As you can see from the image above, it bears a striking resemblance to a potato. But what is more striking is the fact that through these models, the Earth's gravitational field is depicted not as a solid body, but as a dynamic surface that varies over time. This new gravity field model (which is designated EIGEN-6C) was made using measurements obtained from the LAGEOS, GRACE, and GOCE satellites, as well as ground-based gravity measurements and data from the satellite altimetry.

FUN STUFF



If a 747 can carry the Shuttle then what's with the baggage excess charges????



Oooooohhhhhh!!! Don't look at this before eating!!



That's all folks.

Sue



This newsletter is sent out to all present members without whom the Society could not survive. Also to previous members and people with an interest in astronomy in the hope that they may wish to join/re-join the Society.

If you no longer wish to receive this newsletter by e-mail please let us know. Thank you.