Star Gazer News

Astronomy News for Bluewater Stargazers
Vol 9 No.4 Apr 2015

Apr 2015 Contents

EDWIN HUBBLE'S CAR

Think about it. Receding galaxies are red shifted. Approaching galaxies are blue shifted. The mirror warns of objects approaching quickly from behind...get it?

Rare Species of Ice Turtle Observed

Chelydra glaciata (common name: Canadian Ice Turtle)

Climate change has allowed a species of Canadian Ice Turtle to extend its range considerably further south. Chelydra glaciata (common name: Canadian Ice Turtle -a tortoise to be more precise) inhabits more northern regions (they prefer areas with glaciers - hence the name) but has apparently migrated south as climate change has dropped the temps in Southern Ontario. This pair (male and female?) was observed in a heavily iced-in area under the cliff of the Inglis Falls in Harrison Park, Owen Sound ON.

These tortoises develop a heavy coat of hollow hairs for protection from the cold (the white coating seen in the image) and it is speculated that they can survive the sub-zero temperatures by creating an anti-freeze like substance that they metabolize from the aromatic compounds in spruce and pine needles - an internal chemical protection from cold that is also observed in some other species like frogs and toads. The difference in C. glaciata is that they stay relatively active during the coldest months of the winter foraging under the snow at the base of pines and spruce trees.

Research on the internet indicates only one expert on Canadian Ice Turtles, a Prof. Petro Middelvin of the Soviet Academy of Sciences in Vladiavostok. In Russia they are called Russian Ice Turtles. When contacted, he expressed mild surprise that they had never before been seen in Canada since environmental conditions are perfect for them here. "These remarkable creatures should have been seen long ago", he said. On the other hand, he added, they are "wary and well camouflaged". If the turtles below are, in fact, a mated pair, then, maybe baby ice turtles???...

This April 2015 issue continues the monthly tradition of providing **serious astronomy news** and information about local BAS events. However, being an April issue, some of the articles herein are on the lighter side or even **totally bogus**. After all, spring has sprung and the silly season is upon us.

READER BEWARE.

Nevertheless, ALL ASTRONOMY AND BAS EVENTS ARE CORRECT AND SO IS THE SKY CALENDAR. 'No Foolin' with those!

The editor takes NO responsibility for anything that may befall you as a result of taking anything you might find on this or in any of the following pages seriously. (EVEN THIS DISCLAIMER MAY BE BOGUS). Once again: "Caveat Emptor"]

DISCLAIMER

NEWS

YOU CAN TRUST!

Or maybe not...

BAS Executive 2015 -2016

President:	TBA	
Vice-President:	Zoë Kessler	zoe@zoekessler.com
Secretary:	Lorraine Rodgers	lrodgers@bmts.com
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BAS Elections Deadline March 31

As indicated in the previous (March 2015) issue, email voting for BAS executive runs from March 5, 2015 to March 31, 2015. So when you receive this issue, there is still a week or so left before the deadline. As the positions of v-p, secretary and treasurer were acclaimed at the Mar 4 meeting, the only position which has candidates is the spot of president. Aaron Top and John Hlynialuk are in the running and you have probably already seen their election platforms which were communicated by an email from the secretary. These statements are also available on our website in the sidebar on the BAS **HOME** page. Click on each image for the respective platforms.

Note that **you must be a current member (2015 dues paid) to vote or stand for executive position**. Membership fees are payable before you can cast your ballot.

As mentioned last month, there are also appointed positions some of which have been filled by volunteers. Public Outreach chair is still unfilled and BAS exec would welcome a volunteer to take on that post. Current appointees in social media and membership (the two filled positions) will continue in those positions until they decide to opt out of their duties.

Also, as mentioned last month, BAS has an associated executive position called Member-at-Large for which members can put in their names. Duties are light and involve tasks that are technically not done by other exec members but which need to be done from time to time. The Member-at-Large can also suggest to the BAS executive items that he/she feels might enhance the club experience. It is a chance to contribute and have a say in the direction of the club without the obligations of taking on a full exec position. Exec welcomes volunteers for this position at any time.

And...since this is the April (Fool) issue of SGN...

"Voting in Ancient Rome Was a Rocky Experience: "Ballot" comes from the Italian word *"ballotta,"* meaning "little ball." In one early method of voting, Roman soldiers cast small rocks or marbles into helmets that doubled as portable ballot boxes. Those wealthy, well-off members of the Roman Senate also used beans (in case their slaves got hungry?) or colored balls to vote, rather than using their thumbs Coliseum style."

-from Lori Shapiro at the website: http://byallwrites.biz/

From the Editor: The note above gives you another perspective on the phrase "casting your ballot". If this practice had been maintained it would probably have significantly upped the voting percentages in our modern elections. I am sure that voters (the young ones anyway...) would have brought more than a few "pebbles" to cast at their not-so-favourite candidates. It would certainly make politics a lot more fun. The rocks raining down (on the Senate chambers, anyway) would have woken many of the occupants up, and I think we would be better served by our politicians.

Astronomy Events April 2015

Apr 4 FM **Total Lunar Eclipse** The first of two lunar eclipses this year but not the best. (Sep 27 is better). First umbral contact at 6:15 DST Saturday morning, Moon sets before start of totality at 7:02 am DST.

Apr 11 Sat Venus closest to M45 Pleiades -less than 3° visible to 11 pm DST in west. ideal photo op!

Apr 12 Sun LQ

Apr 19-22 Venus, crescent Moon, Mercury and Mars in west after sunset. Crescent Moon near Mars and Mercury on Apr 19, near Venus Apr 22. Daylight occultation of Aldebaran not visible locally. Mercury near Mars Apr 22.

Apr 22 Lyrid meteors peak at 7 pm DST Wednesday with a possible 20/h, The **Moon is favourable at** 20% illuminated. Sorry, Fox Observatory not available for viewing. Look NE as Lyra rises 9 pm DST.

BAS Events for April 2015

Apr 1 Wed **BAS meeting** at Grey Roots Museum, Astronomy Trivia Night. Teams rack up points for correctly answering astronomy questions of various difficulties. Prizes awarded.
New BAS executive will be announced today.

Apr 4 FM **Total Lunar Eclipse** The first of two lunar eclipses this year but not the best. First umbral contact at 6:15 DST Sat am but Moon sets before totality starts 7:02 am DST. Observing from Sauble Beach location as before. Contact John H. for details.

Apr 18 Sat NM **BAS viewing Night at the Fox Observatory:** More **Messier Marathon** viewing? Notification by email. Contact stargazerjohn@rogers.com for info. Come prepared (warm clothing, lawn chairs. Snacks, refreshments provided. Please park near the Learning Centre and walk to Observatory.

Apr 25 Sat FQ Moon and **Astronomy Day -**Free public viewing event starting at dark. Moon viewing and **Saturn at opposition. Public welcome.** Admission by donation. No charge for students.

BAS patch travels "millions of miles" on orbit

Canadian astronaut Chris Hadfield while serving on the ISS last year, brought a number of patches of famous astronomy clubs with him to the orbiting laboratory. He is shown here with the BAS patch that I smuggled into his flight bag when he was not looking. [We just happened to be sitting in adjoining seats when he was waiting for the Air Canada flight to Kazakhstan -its a long story...] Anyway when he noticed the patch and the polite note I attached to it when unpacking in his cubicle in the ISS, he contacted me by email and after a few chuckles, he agreed to take a photo of it while on orbit. I have never met a more gracious and cooperative fellow and am proud to be brought up in the same home town. This was another point of contact between him and me. Turns out we went to the same elementary school (at different times but the same school King Edward Elem. -small world, isn't it? -as Hadfield so aptly pointed out from orbit.]

Right:
Expedition 36/37 astronaut Karen Nyberg uses a fundoscope to blow dry her hair from the inside during her tour on the International Space Station in 2014. ***Credit: NASA***

Shoot for the Moon

www.xkcd.com

Amateur Stargazer Observes Heavenly Bodies in Portugal by John H.

Main attraction at the Loule Carnival

Loule, Portugal was a site where heavenly bodies appeared during the largest "Mardi Gras" festival in Portugal, the Loule Carnival. Rebecca and I had been planning to get away from the snow and cold for a time and eventually settled on a holiday in Portugal, at just the right time to catch the parade in the small town just a short drive away from our hotel. We picked Portugal as a destination after reports from a number of our friends indicated the prices were reasonable, the Portugese friendly (all spoke English) and the weather was at least 30°C warmer than Ontario in February. We literally went from -15°C to +15°C in an overnight flight.

Portugal is touted as a country with 300 sunny days a year but January and February are what passes for winter in that country. Still, flowers bloom and nights are rarely cooler than 8°C at that time of year on the warm southern coast where we stayed -the Algarve. Being in Portugal's clear skies promised that I had a better chance of seeing the Venus/Moon/Mars triangle on Feb 20 (but 5 hours earlier than from the cold snowy fields of home).

Contrary to expectations, however, the weather in Ontario cooperated. It was frigid back home all right, but clear enough at times that several intrepid astrophotographers managed to image the event on Feb 20, -in spite of cameras that froze and lenses that frosted over.

On the other side of the Atlantic, temperatures in Portugal were nowhere near freezing for the duration of our stay and better yet, there was only one night that a short-lived rain shower prevented my imaging the sequence of events over the whole week as Venus slipped past Mars. I got images Feb 13, Feb 20, Feb 21, Feb 22 and then on Feb 25 back in Canada. Rain fell in Albufeira, our home base, Feb 23 and we were having a nice farewell dinner Feb 24 (it was clear as Venus and Mars set) so I missed those two nights. On that last day in Portugal, the 24th, I thought it a better idea to forego imaging to drink wine with Rebecca and say our farewells to some of the other guests (and staff) we had befriended.

Good weather was accompanied by good luck in finding an imaging location since the hotel where we were staying turned out to be perched on top of one of the two main hills of Albufeira. The view to the west was over park land rather than over the old town with its illuminated apartments, homes and shops. At the spot I picked to set up my camera, the street lights were mainly hidden by trees. Moreover what I guess was an old silo (or maybe an ancient tower -I was not able to find out more) added a nice foreground to some of the wide-angle images I took. Image below left.

But, being in a strange country, I had some concerns about imaging in a dark place in a strange town. However, I managed to beat the odds this time. The only creature I disturbed on the first night was one of the feral dogs in town that had staked out the hill as his. There was also a human presence in a small shack (crossed tennis rackets on its outside wall indicated a high class of vagrant) but I only saw him briefly once in daytime and not again at night -thankfully. In all respects, things worked out well for me while I was out in the dark.

Weather-wise, more than 3/4 of the nights were clear (as were the days) and it rained briefly only twice. Most of the days were 15°C or over and it was light jacket weather during our outings. We plan to go back again next year for a longer stay.

A couple were actually robbed (at gun point!) in town during daylight on Feb 18 but we were told this is a very rare occurrence in Albufeira. The crooks were caught by police almost immediately -the bad guy with the keys to the getaway car dropped them in the run to the vehicle with police on their tail. Who says dumb criminals live only in North America? The couples belongings and money were recovered.

A silo (or an ancient Moorish lookout tower on the top of the hill??) dominated the view to the south and provided a nice shadow in which to hide from the lights. The view west was across the valley between the two main hills of the town of 40 000 people. Buildings on the ridge to the west provided a nice foreground for Venus, Mars and the Moon (top right image next page). Lights near the tower in the image at left look pretty over-whelming but in the tower shadow the view to the west was dark. Furthermore, a wonky streetlight mostly stayed off when I needed it to. Most of the Winter Hexagon is visible in the image left and Jupiter is the bright star near the tree. In spite of the cloud-free sky, in general viewing was not more than mag. 4 most nights because we were in a pretty built-up area with lots of ambient lighting.
Canon 60Da 1.0 s exp. 3200 ISO 10 mm lens at f/2.8, 7:54 GMT Feb 22

Image above on Feb 21at 7:09 pm GMT. Crescent is 10° farther along ecliptic than its position on Feb 20 when it was 4° below Venus/Mars. Exp.=1s, 3200 ISO, f.l100 mm f/5.6.

Venus Slips Past Mars (as seen from Albufeira, Portugal, 37.0° N, 8° 15' W) Canon 60Da exposure of 0.5 s at 7:54 GMT Feb 21. ISO 3200, 15-85mm zoom lens set at 32mm, f/5.6

Oenology Research

When I was not imaging, I took the opportunity of observing the properties of light filtering through various kinds of local red liquids (and some white ones, too, but the effect was not pronounced in the whites). Image above shows the necessary equipment to perform the experiments. There were so many liquids to get data on (transparency, viscosity, hue, etc.) that I am eager to go back next year. Science IS a hard task master but I think the research will lead to important results with many oenological applications.

Canon 60Da, 0.2 s exp. f/5.6 85 mm focal length ISO 3200.

Venus Mars and Moon as seen from two places on the Earth. Image left was taken in Tarifa, Spain (John H) while image right was taken in Grey-Bruce (Aaron T) on the same night. The Moon is in a different place because in the 6 hours between images it moved eastward 6 Moon diameters. (0.5° per hour). Add to this the fact that the two images were 6000 km apart and parallax adds more to the apparent position difference (by over a degree for the Moon in the largest case). Mars and Venus will also experience parallax but the shift in position is much smaller.

Canon 60Da, 56 mm focal length, exp= 0.4 s ISO 800, f/5.6 Aaron Top image

Everything in Motion!

The two images at right appear to show how much Venus moved in a short 24.5 h interval between photos, but Mars too, was moving upwards along the ecliptic. Mars moved 46 minutes and Venus moved 1°15 minutes up, so they kept pace with each other longer than they might have otherwise. If there is one truism in Astronomy, it is that everything is moving! The short exposures did not show bright background stars for reference but there is a faint star (mag. 6.3) to the right of Venus in lower image.

Enough images were taken on Feb 21, that they make an interesting video when time-lapsed together. The video was previewed at the March 4 BAS meeting.

Image left: ←

Venus/Mars at 7:40 GMT Feb 22 Canon 60Da 0.4 s exp. 3200 ISO, 400 mm lens at f/5.6. Separation of two planets = 29.1 minutes

Image right: →

Venus/Mars at 7:11 GMT Feb 21 Canon 60Da 0.4 s exp. 3200 ISO, 400 mm lens at f/5.6. Separation of two planets = 27.8 minutes. Both planets were moving upwards in the frame.

Crescent Moon from Albufeira Portugal looks just as interesting as it does from home. This image has a nice “Moon Man” profile look to it where sunlight illuminates the bright rim of Mare Crisium (my best guess) just above the head of the Lady in the Moon. Image was taken at the full extent of a 100-400 mm telephoto lens, 1/4 s exposure at 400 mm focal length, f/5.6 and ISO 3200. Image taken Feb 21 about 7:14 GMT.

Coincidentally, these were just about the same settings (maximum zoom!) used to take several images of the other heavenly body at the Loule Carnival upper left page 5.

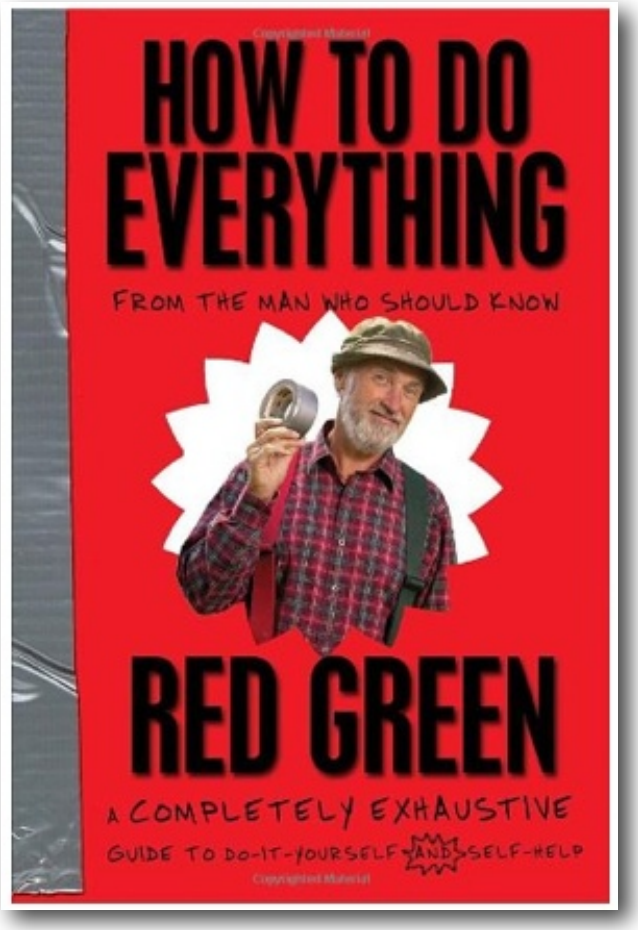
How to Have a UFO Sighting

Excerpt From Red Green's *How To Do Everything* Doubleday Canada (c) 2010

HOW TO HAVE A UFO SIGHTING

For anyone who enjoys science fiction, loves adventure or would just like to disprove every religion there ever was, there's something incredibly appealing about having your very own UFO sighting. It's not impossible, but it's also not easy. So if you're wondering if it could happen to you, here's a short list of some of the things you'll have to do to allow yourself to become one of the chosen few. Let's see if you've got the right stuff.

- Go to the highest hilltop in your area, away from the ambient light of the city, where you have a clear view of the night sky. While you're waiting for the sun to go down, eat every mushroom you can find.
- Live near an airport.
- When watching for UFOs always remove your glasses.
- Convince yourself that there is a superior intelligence on other planets and that it's only the stupid people on Earth who can't see their spaceships.
- Realize that you're a drab, boring person with no special skill or talent, but that all of that will change the minute you see your first flying saucer.
- Learn how to take pictures while jiggling the camera so that the resultant image could be anything.
- Always watch for UFO's alone. No two people have ever seen the same UFO simultaneously, which proves that the aliens are so clever they only reveal themselves to us one at a time.
- Don't go on and on to your co-workers about the existence of UFOs. Just pretend you know something (it won't be easy). Exercise your imagination. Stare at clouds until they look like large-breasted women. Try squinting at things to ry to make them look interesting. Like you do in the mirror.
- Use your diet. Many UFO sightings have occurred after a night of Indian food.
- Work on your credibility by pretending to have seen a UFO and watching people's reactions as you describe the experience. You will soon figure out how far you can go.



- Even after you see a UFO, be careful how you report it. Try to keep your language scientific and exact. Describing the shape as parabolic sounds way better than saying it looked like Elmer Fudd's ear.
- Don't embellish. The UFO sighting is enough. Don't add the part about how the aliens abducted you and took you bowling on Saturn.
- Don't' assume a sighting is taking place. If people start yelling "UFO" it might just be their way of telling you to leave.

UFO Hoax Photos -There's an App for that

Robert Sheaffer in his Psychic Vibrations column in Skeptical Inquirer Volume 37.6, November/December 2013 reveals that several photo apps for iPhones, etc. exist that will allow users to add UFOs of various types to an image. The applications allow you to add one or more (a fleet?) of UFOs to an image, position it in the photo, add fuzz to make it look more mysterious and send it to all your friends. You can also add aliens to your images! Don't laugh. Two stories with UFO images created by an app like this managed to get published in the mainstream media.

See for yourself at:
http://www.csicop.org/si/show/ufo_hoaxes_theres_an_app_for_that

Alabama Legislates Value of Pi to be 3.000

HUNTSVILLE, Alabama.
NASA engineers and mathematicians in this high tech city are stunned and infuriated after the Alabama state legislature narrowly passed a law yesterday redefining Pi, a mathematical constant used in the aerospace industry. The bill to change the value of Pi to exactly three was introduced without fanfare by Leonard Lee Lawson (Rep., Crossville) and rapidly gained support after a letter-writing campaign by members of the Solomon Society, a traditional values group. Governor Guy Hunt says he will sign it into law on Wednesday.

The law took the state's engineering community by surprise. "It would have been nice if they had consulted with someone who actually uses Pi," said Marshall Bergman, a manager at the Ballistic Missile Defense Organization. According to Bergman, Pi is a Greek letter that signifies the ratio of the circumference of a circle to its diameter. It is often used by engineers to calculate missile trajectories.

Prof. Kim Johanson, a mathematician from University of Alabama, said that Pi is a universal constant, and cannot arbitrarily be changed by lawmakers. Johanson also explained that Pi is an irrational number, which means that it has an infinite number of digits after the decimal point and can never be known exactly. Nevertheless, she said, Pii is precisely defined by mathematics to be 3.14159..., plus as many more digits as you have time to calculate".

"I think that it is the mathematicians that are being irrational, and it is time for them to admit it," said Lawson. "The Bible very clearly says in 1 Kings 7:23 that "the altar font of Solomon's Temple was ten cubits across and thirty cubits in diameter, and that it was round in compass."

Lawson called into question the usefulness of any number that cannot be calculated exactly, and suggested that never know|ing the exact answer could harm students' self esteem. "We need to return to some absolutes in our society," he said, "the Bible does not say that the font was thirty-something cubits. Plain reading says thirty cubits. Period."

Science supports Lawson, explains Russell Humbleys, a propulsion technician at the Marshall Spaceflight Center who testified in support of the bill before the legislature in Montgomery on Monday. "Pi is merely an artifact of Euclidean geometry." Humbleys is working on a theory which he says will prove that Pi is determined by the geometry of three-dimensional space, which is assumed by physicists to be "isotropic", or the same in all directions. "There are other geometries, and Pi is different in every one of them" says Humbleys. Scientists have arbitrarily assumed that space is Euclidean, he says. He points out that a circle drawn on a spherical surface has a different value for the ratio of circumference to diameter. "Anyone with a compass, flexible ruler, and globe can see for themselves," suggests Humbleys, "it's not exactly rocket science."

Roger Learned, A Solomon Society member who was in Montgomery to support the bill, agrees. He said that Pi is nothing more than an assumption by the mathematicians and engineers who were there to argue against the bill. "These Nabobs waltzed into the capitol with an arrogance that was breath-taking," Learned said. "Their prefatorial deficit resulted in a polemic stance at absolute contraposition to the legislature's puissance."

Some education experts believe that the legislation will affect the way that math is taught to Alabama's children. One member of the state school board, Lily Ponja, is anxious to get the new value of Pi into the state's math textbooks, but thinks that the old value should be retained as an alternative. She said, "As far as I am concerned, the value of Pi is only a theory, and we should be open to all interpretations". She looks forward to students having the freedom to decide for themselves what value Pi should have.

Robert S. Dietz, a professor at Arizona State University who has followed the controversy, wrote that this is not the first time a state legislature has attempted to redefine the value of Pi. A legislator in the state of Indiana unsuccessfully attempted to have that state set the value of Pi to three. According to Dietz, the lawmaker was exasperated by the calculations of a mathematician who carried Pi to 400 decimal places and still could not achieve a rational number. Many experts warn that this is just the beginning of a national battle over Pi between traditional values supporters and the technical elite. Solomon Society member Lawson agrees. "We just want to return Pi to its traditional value," he said, "which according to the Bible, is three."

The value of Pi to 1000 decimal places (assuming you care) is:

3.
1415926535 8979323846 2643383279 5028841971 6939937510
5820974944 5923078164 0628620899 8628034825 3421170679
8214808651 3282306647 0938446095 5058223172 5359408128
4811174502 8410270193 8521105559 6446229489 5493038196
4428810975 6659334461 2847564823 3786783165 2712019091
4564856692 3460348610 4543266482 1339360726 0249141273
7245870066 0631558817 4881520920 9628292540 9171536436
7892590360 0113305305 4882046652 1384146951 9415116094
3305727036 5759591953 0921861173 8193261179 3105118548
0744623799 6274956735 1885752724 8912279381 8301194912
9833673362 4406566430 8602139494 6395224737 1907021798
6094370277 0539217176 2931767523 8467481846 7669405132
0005681271 4526356082 7785771342 7577896091 7363717872
1468440901 2249534301 4654958537 1050792279 6892589235
4201995611 2129021960 8640344181 5981362977 4771309960
5187072113 4999999837 2978049951 0597317328 1609631859
5024459455 3469083026 4252230825 3344685035 2619311881
7101000313 7838752886 5875332083 8142061717 7669147303
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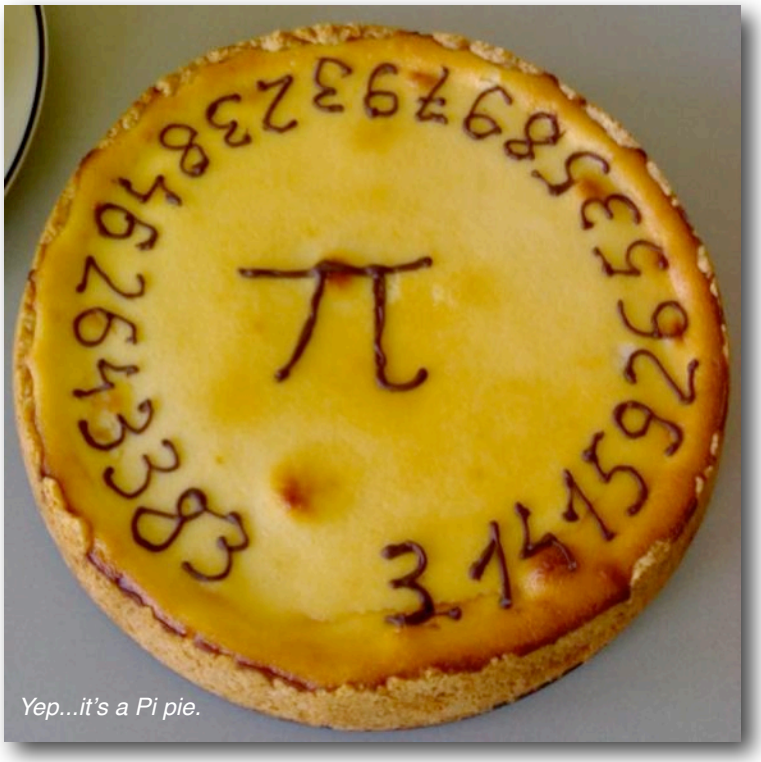


Yep...it's a Pi pie.

UK to open its first 'pub observatory'

Posted on Feb 5, 2015 3:46 pm By Michael Banks www.physicsworld.com

Fancy having a few pints while gazing at the stars? Well soon you will be able to, thanks to a new initiative at the Barge Inn at Honeystreet on the banks of the Kennet and Avon canal in Wiltshire, UK.

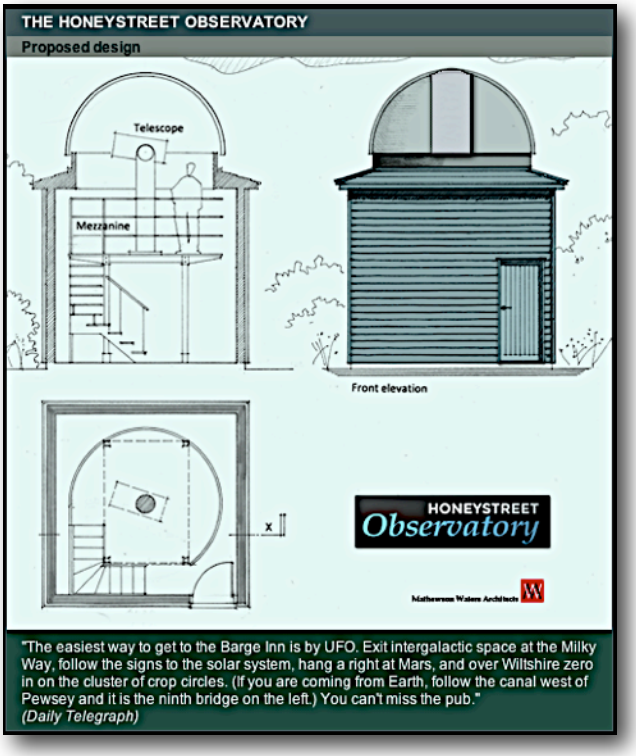
Known as "the most famous pub in the universe", the boozer is already a favourite among UFO aficionados and crop-circle hunters.

The Barge Inn. (Courtesy: The Barge Inn)

But now the free house, which has its own brewery making beers such as Alien Abduction and Roswell, is turning to the stars by creating the UK's first pub observatory.

The 205-year-old rural pub recently had planning permission accepted by Wiltshire county council for a 6 m-tall domed observatory to be constructed in the pub's neighbouring campsite.

Dubbed the Honeystreet Observatory, it will be able to accommodate groups of about twenty people and will feature a Celestron 14″ 1400 Pro telescope. The images from the telescope will also be relayed onto screens in the pub.

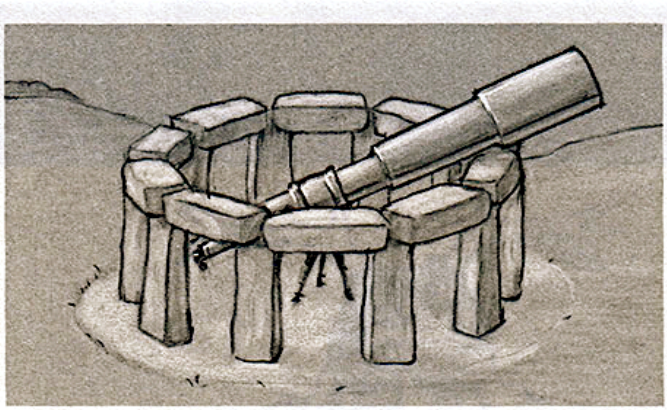


http://www.honeystreetobservatory.com/

It is hoped that the observatory will boost visitors, particularly in the winter months when there is less daylight and more time for observations – and drinking, of course.

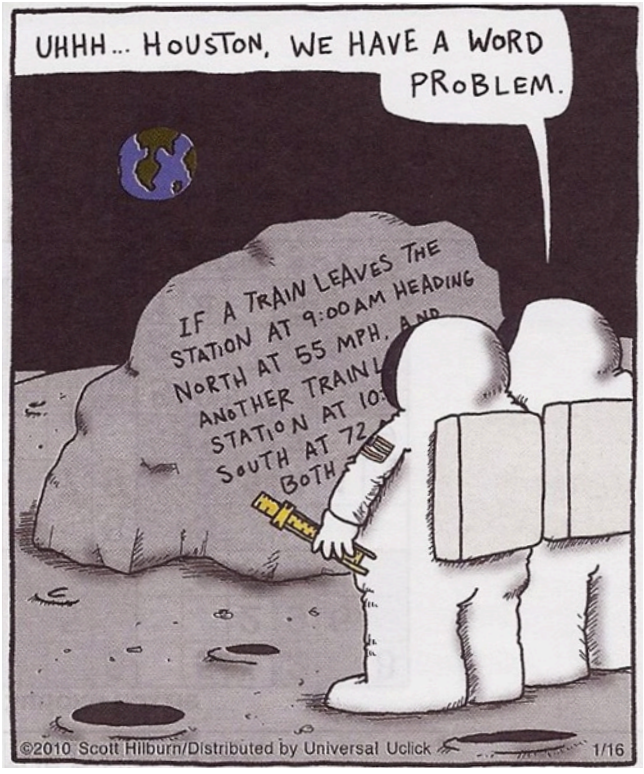
"We had originally intended to build the observatory next year but due to the great response since gaining planning consent, construction will commence next month." pub landlord Ian McIvor told physicsworld.com.

And will it be a good idea to mix alcohol with astronomy, particularly with the tricky ascent to the telescope? "You would be amazed at what some of the pub's customers can accomplish after a few pints," adds McIvor. "Gazing at the stars and falling down the stairs is a regular activity, so we think it will be business as usual!"



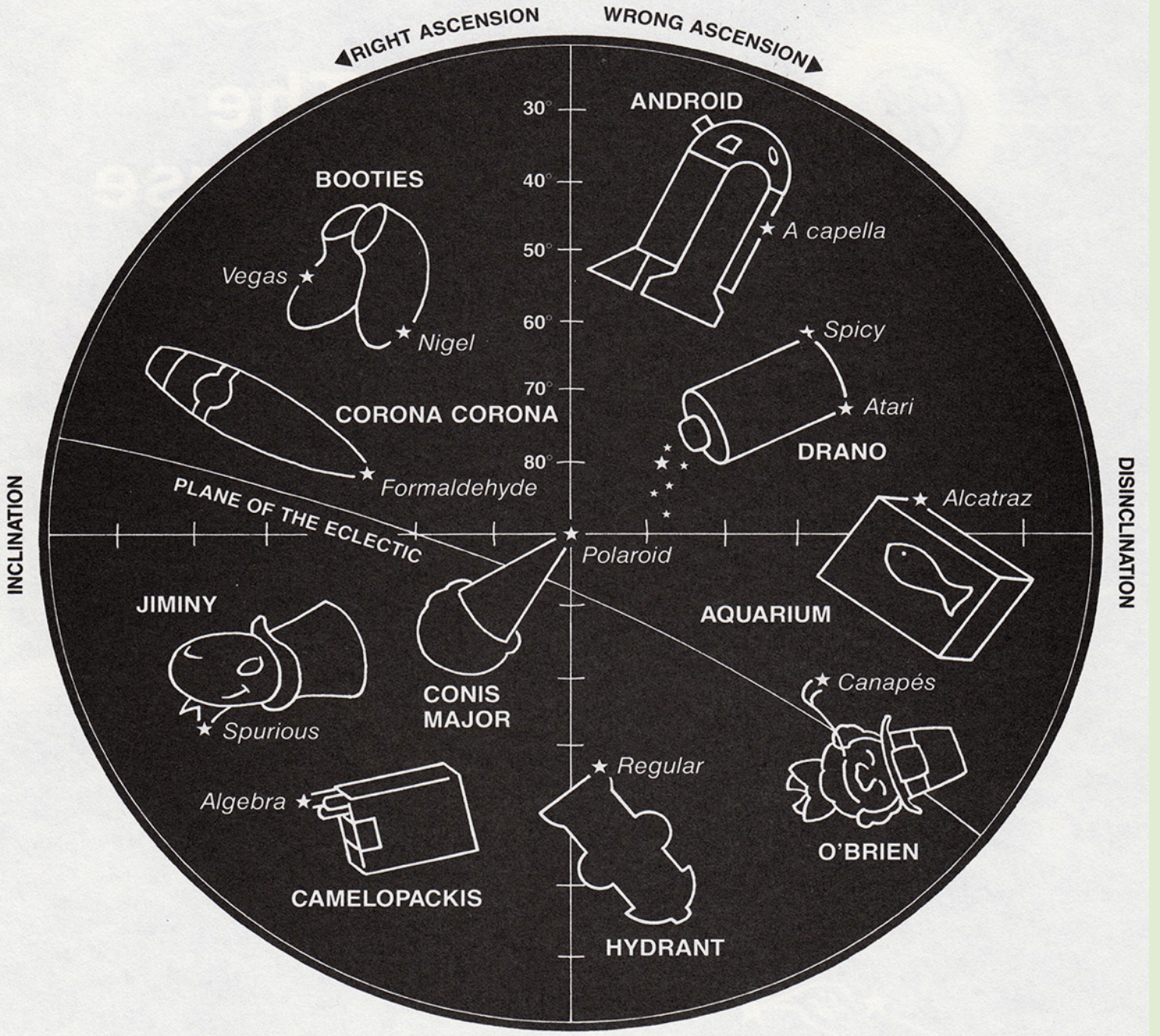
STONEHENGE Computer analysis of this structure has shown that the weight of its stones, in ounces, is precisely equal to the number of stars in the universe! It is shown here as it may have looked in use. Similar studies are under way at other sites, such as Brickhenge, Stuccohenge, and Masonite-henge.

From *Science Made Stupid* (Tom Weller) above and page 11



Pictures in the Sky

The ancients looked at the heavens and saw the shapes of gods and animals in the stars. This was probably due to widespread drug abuse in ancient times. Nevertheless, we still use the names they gave the constellations.



Constellations Visible from the Northern Hemisphere

Chart above shows the sky as it would appear around midnight in April. Note that O'Brien is setting in the West. An interesting feature is that his right ear is exactly on the Plane of the Eclectic so that O'Brien's ear rises and sets at the exact E and W points in our winter sky. Since this constellation is often located in countries near or surrounded by water, hence the expression "water on the ear".

It is not a surprise that another water constellation, Hydrant (or more correctly Hydrant-pis) is in the sky near Canis Major, "the Big Dog" which is just off-chart below O'Brien. (Note: the story that Canis is responsible for water in O'Brien's ear is apocryphal. Please see previous paragraph for the correct explanation).

Times for Events are in 24 hour clock DST

Apr 1 12:59 Moon at Apogee: 406 012 km
04 12:01 Partial Lunar Eclipse; U1 18:15 DST Moon sets 19:02
04 12:06 **FM** rises locally at 20:18 DST
08 13:08 Saturn 5° from Moon best just before dawn
08 14:34 Jupiter-Beehive: 5.0° separation all night long
11 15:28 Venus-Pleiades: 2.6° separation in west after sunset
11 03:44 **LQ MOON** rises locally at 02:02 DST
17 03:53 Moon at Perigee: 361 026 km
18 18:57 **NM** rises locally at 06:36 DST
19 20:00 Mercury, Mars 1.2-day old Moon in 5° circle low in west
20 to 22 Venus, Pleiades, Aldebaran Moon in W.
21 18:09 Venus 6.6° from Moon, 1.5° from Aldebaran
21 13:00 Aldebaran occulted in daytime (close miss locally)
22 17:00 Lyrid meteor peak 20/h Moon 20% illuminated
22 20:00 Mars and Mercury appulse 1.2° separation
25 23:55 **FQ MOON** rises locally at 12:20 DST
29 03:55 Moon at Apogee: 405 085 km

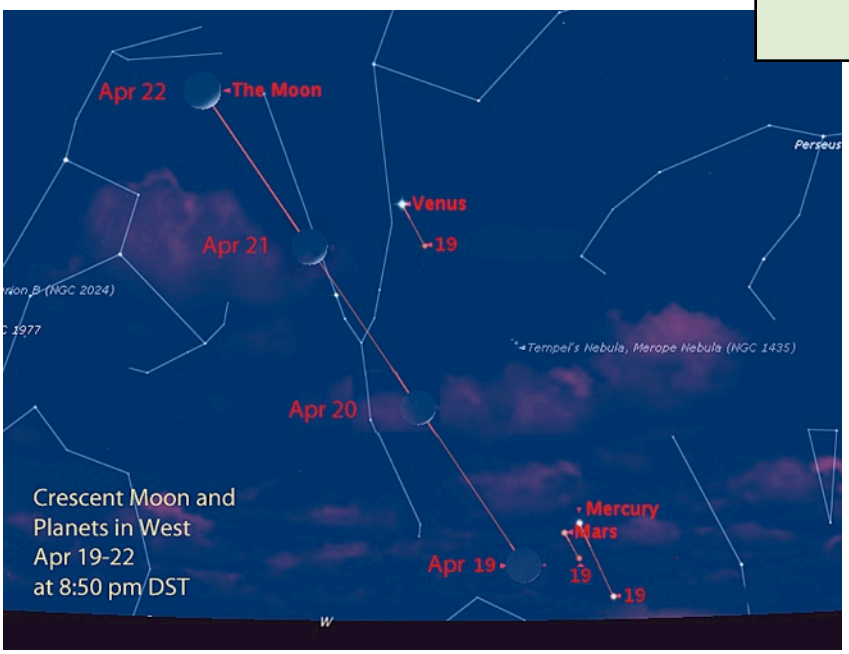
BAS Events

Apr 1 Wed **BAS meeting** at Grey Roots Museum, Astronomy Trivia Night. New BAS executive to be announced.
Apr 4 FM Total Lunar Eclipse First umbral contact at 6:15 DST Saturday morning, Moon sets before start of totality at 7:02 am DST. Viewing from usual place Sauble Bch
Apr 18 Sat NM **BAS viewing Night at the Fox Observatory: Messier Marathon** viewing?. Contact John H. at stargazerjohn@rogers.com for info.
Apr 25 Sat FQ Moon and **Astronomy Day -**Free public viewing event starting at dark. Moon viewing and **Saturn at opposition. Public welcome.** Admission by donation. No charge for school-aged children.

Special Events

Crescent Moon and Planets in West (again)

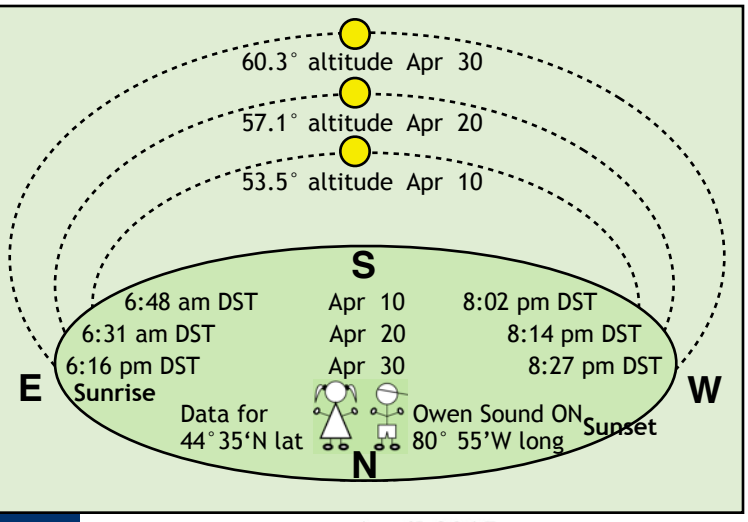
On Apr 19, Mercury, Mars and the 1.4 day-old crescent Moon are low in the west as shown below. The tracks show the paths of each object over the next 4 days with Mercury closest to Mars on Apr 22. But, don't miss the appulse of Venus and the Pleiades on Apr 11 when the two are only 2.7° apart. A nice wide field photo op!



Planets

MERCURY, is rounding the Sun this month and gets better near month end becoming an Evening Star in May along with Venus. Mars, Mercury and a 1.2-day old crescent Moon will group inside a 5° circle on April 19 above the western horizon, but this is a difficult observation. **VENUS,** is at magnitude -4.1 and well-placed all evening for viewing. It passes the Pleiades on Apr 11 and forms a nice group with the Moon and Hyades Apr 21 and 22. **MARS** (mag. 1.4) continues to hover about 5° above the western horizon all this month. **JUPITER**, (-2.3) is in prime position for evening viewing all month and slowly moves away from the Beehive Cluster this month. **SATURN,** (mag 0.3) rises about 10 pm in mid-April and is sitting just above the claw of the Scorpion in a pretty star field. Both **URANUS,** (5.7) and **NEPTUNE,** (7.8) are difficult in the dawn twilight an hour ahead of sunrise this month. Both **asteroid, Vesta (5.4)** and **dwarf planet**, **Ceres (6.5)** are dawn objects rising an hour before the Sun. Charts are available on the BAS website. **PLUTO** (mag. 14) is in dark sky for a few hours before dawn located in the "teaspoon" asterism of Sagittarius. Pluto finder charts for 2015 are now found on the BAS website.
The diagram below gives the sunrise/sunset times and the Sun's altitude on three dates this month. The Sun continues climbing in the sky as it heads for the June 21 Solstice. Happy Spring!

The April moon phase graphic below shows lunar phases for each night of the month. Times of moonrise for NM, FQ, FM and LQ are given in the Calendar listing at left.



April 2015

Sun	Mon	Tue	Wed	Thu	Fri	Sat
By permission Univ. of Texas McDonald Obs.			1	2	3	4 FM
5	6	7	8	9	10	11 LQ
12	13	14	15	16	17	18 NM
19	20	21	22	23	24	25 FQ
26	27	28	29	30		

BAS Member Loaner Scopes

Solar H-alpha scope now out on loan.

Our Lunt solar scope can be borrowed by BAS members but there is a waiting list! Contact Aaron to get your name on it. We now have a suitable mount for it as well. A short training session will be provided on pickup.

One 12-inch Dob available.

Only one 12-inch loaner telescope is available for free loan by members. The other is temporarily under repair. Other scopes like **8-inch dobsonians** are available, however. Contact John H. or Brett T. for availability. Scopes come in and out so keep checking with John or Brett if you are interested in a loaner.

SGN Classified Ads Section

(Now also on our website)

FOR SALE: Meade Lightbridge 16" Dobsonian

Azimuth bearing upgraded to Teflon and textured Formica bearing. Includes AstroZap shroud and Telrad unit finder. The truss tubes and castings were originally bright white! I recoated them in flat black header paint after a light sandblasting. I have also modified the Rocker/Base Assembly using "knock down" fasteners. This bulky assembly can be assembled or disassembled in about five minutes with one Allen key for flat storage in a car trunk. The Lower Optical Assembly will fit into the backseat of my Corolla. This is a relatively transportable "Light Bucket" priced at $1300. Make me an offer! Brett Tatton ph: (519) 389-6010 or: bretttatton@gmail.com Note: Actual scope does not have a handle under focuser or reinforced base (near eyepiece rack) as shown in image above.

FOR SALE: Canon EF 20 mm f/2.8 USM lens

Field of view = 94° (along diagonal) filter size = 72 mm (Skylight 1B filter included) lens caps included. Asking $400. Call 519-371-0670 or contact stargazerjohn@rogers.com. Review at: http://www.photozone.de/Reviews/151-canon-ef-20mm-f28-usm-lab-test-report--review

FOR SALE: Canon EOS T-adapter

Connect your Canon camera to other components with a T-adapter. Bayonet mount connects directly to camera body. Other end has a removable threaded section that can be replaced with a 2-inch barrel for a 2-inch eyepiece holder. Contact John at 519-371-0670 or at stargazerjohn@rogers.com. I can do some machining to customize this item to your telescope as well (for a small fee/materials cost).

FOR SALE: Televue Pronto

2 element E.D. Refractor, 2.7" / 70mm dia... 480mm, f/6.8. with 1-1/4" Star Diago...ree Prism diagonal (for terrestrial vie...e Red dot finder, complete with Tel...ontact Anton VanDijk 519 376-9912 ...gers.com

SOLD!

The Cartoon Corner

http://xkcd.com

Telescope Names:

THE VERY LARGE TELESCOPE	☑
THE EXTREMELY LARGE TELESCOPE	☑
THE OVERWHELMINGLY LARGE TELESCOPE	☑ (CANCELED)
THE OPPRESSIVELY COLOSSAL TELESCOPE	☐
THE MIND-NUMBINGLY VAST TELESCOPE	☐
THE DESPAIR TELESCOPE	☐
THE CATACLYSMIC TELESCOPE	☐
THE TELESCOPE OF DEVASTATION	☐
THE NIGHTMARE SCOPE	☐
THE INFINITE TELESCOPE	☐
THE FINAL TELESCOPE	☐

The Universal Label:

Hydrogen, Time

Comet Tempel-1 'huffin and puffin' but not a threat: NASA

NASA's Deep Impact spacecraft hurtled a 320 kg inert mass successfully at comet Tempel 1 on July 4, 2005.

The image left shows the comet shortly before impact (target location marked "X"). Luckily, the blow transferred enough momentum to deflect the comet from its path. Otherwise, the comet would have continued into the inner solar system and on April 1, 2006 would have appeared in Earth's sky as an object roughly twice the size of the full Moon.

The surprise appearance would undoubtedly have caused wide-spread concern, about the failure of American science education among other things!

There was an attempt by the Obama administration to recruit senior citizen ex-Hollywood actors for a mission to blow up the comet with nuclear bombs. Luckily this was not necessary in the end and humanity was saved once again by inaction.

Climate change deniers were especially happy with this result as it proved their point about inaction being the best course of action.