WEYMOUTH ASTRONOMY

Trips / Events

Ideas for trips and events always welcome!

events@weymouthastronomy.co.uk

- **20 Sept CADAS– Richard Miles: The Mystery of Comets Unveiled**
- **3 Oct WAS—AGM and Mike Witt: Tales from the Dark Side of the Universe**
- **18 Oct CADAS—Ask the Experts Evening**
- **7 Nov WAS—David Strange: Norman Lockyer and the NLO**
- **15 Nov CADAS—Bob Mixon—8 Great Astronomers**
- **5 Dec WAS—Andrew Coates—Looking for Life on Mars**
- **20 Dec CADAS—Christmas Social and members short talks**

Programmes for many local Societies will be available in the near future. Check their websites for more details.

If you are interested in giving a talk or workshop, let the organisers know.

WAC Upcoming Events:

13 Oct—Binocular Astronomy: Stephen Tonkin

10 Nov—Impacts: Bob Mizon

8 Dec—Christmas Quiz Night

Plans for informal viewing nights will take place after the monthly meetings, weather permitting.

Sky Watcher

Volume 12, Issue 5
8 September 2017

WAC News—

Left: Idaho using a phone through ETX70.

The 2017 Eclipse in the USA was a complete success according to all accounts. My brother and his girlfriend drove from San Diego to Shelley Idaho for totality. They had my original Meade 70ETX setup in a park sharing the view with lots of people. Technology was amazing as they were able to stream through skype to me back here in Aberdeen for an hour and a half the build up and the event! Phone held to the sun streaming during totality and listening in to all the emotion of the crowd and especially my brother. His voice wavering in the description of totality and really absorbing the moment. So amazing to share this experience from half way around the globe! Watching the eclipse 'from the ground' from a variety of locations through NASA TV was actually quite a neat experience as well. Never to match 'being there' but being able to see the eclipse ingress through my brother's scope while watching a nearby broadcast in CaK and Ha zoomed to see the solar activity was very exciting too. Looking forward to 8 April 2024 to see it in person! Until next month ~SK

CICLOPS
Cassini Imaging
Central Laboratory for OPerations

Nevertheless, It Moves

NASA/JPL-Caltech/Space Science Institute
Released: September 4, 2017 (PIA 21344)

The heavens often seem vast and unchanging as seen from Earth, but movement in the skies is the norm. The relative motions of both Cassini and Enceladus over a 15-minute period create the movement seen in this movie sequence.

Cassini has monitored Enceladus (313 miles or 504 kilometers across) with a particular interest in the plumes and the geology of the south polar region for many years. Different viewing geometries give scientists different information, and the resulting animation gives us a unique "spacecraft's eye" view of the flyby.

The movie is a composite of six images taken with the Cassini spacecraft narrow-angle camera on Aug. 1, 2017 using filters that allow infrared, green, and ultraviolet light. The image filter centered on 930 nm (IR) was is red in this image, the image filter centered on the green is green, and the image filter centered on 338 nm (UV) is blue.

The view was obtained at a distance of approximately 112,000 miles (181,000 kilometers) from Enceladus. Image scale is about 0.6 mile (1 kilometer) per pixel.

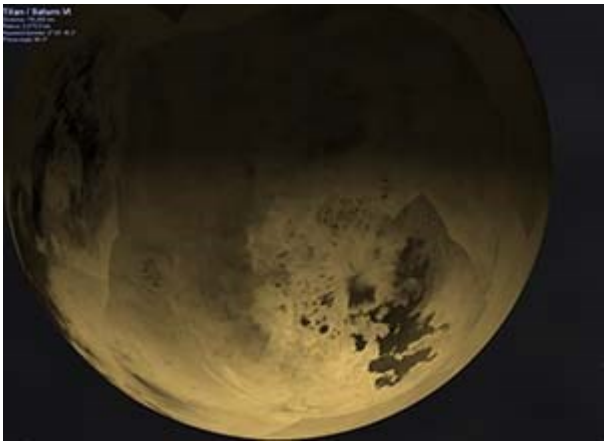
The Cassini Solstice Mission is a joint United States and European endeavor. The Jet Propulsion Laboratory, a division of the California Institute of Technology in Pasadena, manages the mission for NASA's Science Mission Directorate, Washington, D.C. The Cassini orbiter was designed, developed and assembled at JPL. The imaging team consists of scientists from the US, England, France, and Germany. The imaging operations center and team lead (Dr. C. Porco) are based at the Space Science Institute in Boulder, Colo.

For more information about the Cassini Solstice Mission visit http://ciclops.org, http://www.nasa.gov/cassini and http://saturn.jpl.nasa.gov.

http://ciclops.org/view_media/42936/Nevertheless-It-Moves links to an animated gif.

Cassini fly-by of Enceladus: Nevertheless, It Moves Released 4 September 2017 Image Preparation: Steve Mullins Figure Caption: John Moore-Weiss

Cassini at Saturn (more!)



On September 9 at 00:16 UTC, Cassini will reach periapse for Rev 292 at an altitude of 1,628 kilometers (1,012 miles) above Saturn's cloud tops. This is the last of five final passes where Cassini dips into Saturn's upper atmosphere. On the inbound leg, VIMS will acquire a near-infrared map of Saturn's northern hemisphere. Afterward, VIMS will conduct a similar remote measurement of Saturn's upper atmospheric composition by observing a stellar occultation by Saturn and its rings of the red giant star Gamma Crucis. Earlier, CIRS will observe the same longitude on Saturn sampled by VIMS to measure helium abundance. At closest approach to Saturn, INMS will conduct another direct measurement of Saturn's upper atmospheric composition at closest approach, measuring the densities of molecular hydrogen, helium, and various ions. ISS will ride along with INMS, taking a Wide-Angle Camera (WAC) movie of the rings from between the rings and Saturn. Outbound, UVIS will acquire its last observations of Saturn's south polar auroral oval. On September 10, ISS will observe a half-phase Titan from 724,600 kilometers (450,250 miles) away to monitor clouds across Titan's northern, sub-Saturn hemisphere. VIMS and CIRS will then acquire a pair of observations of Saturn's atmosphere.

More information on each of the final days plans can be found on the CICLOPS Site http://ciclops.org/view/8604/Rev-291-293

Cassini will enter Saturn's atmosphere at 10:44 UTC on September 15, or 12:07 UTC Earth-Received Time. Loss-of-signal is expected a minute later as the density of Saturn's atmosphere increases around Cassini, inducing torques on the spacecraft too strong for the on-board thrusters to counteract and keep the antenna pointed at Earth. Shortly afterward, Cassini will be no more as it burns up like a meteor in Saturn's sky.

The Telegraph

Science

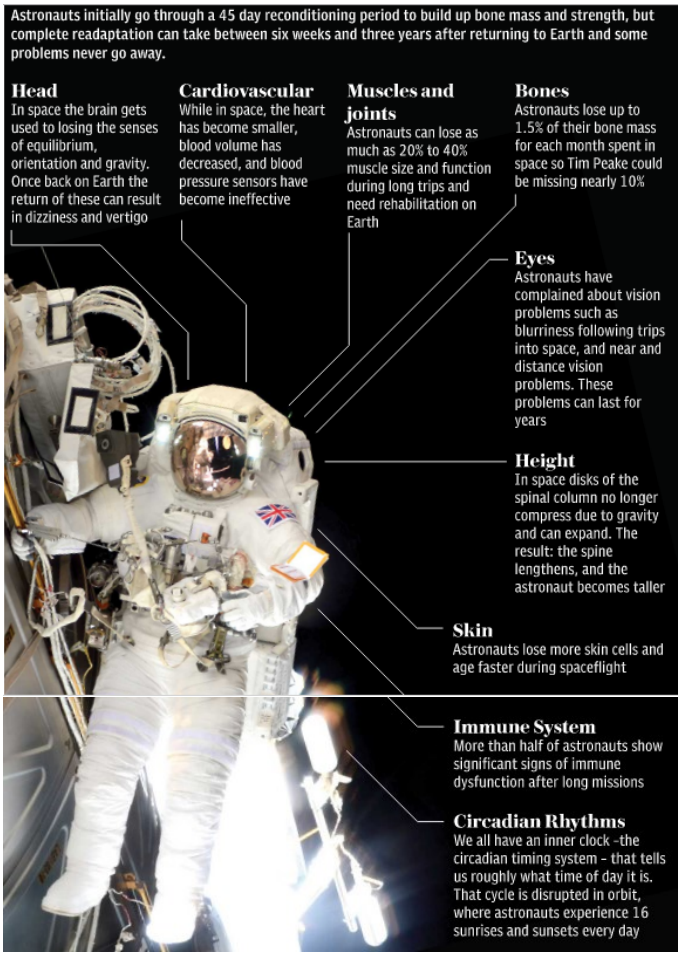
How our immune systems could stop humans reaching Mars

By Sarah Knapton, science editor

The astrophysicist Neil DeGrasse Tyson commented that 'dinosaurs are extinct today because they lacked the opposable thumbs and brainpower to build a space programme' Yet although we now have the technological ability to leave Earth, scientists have found another stumbling block to colonising new worlds - our own immune system. Although it is said we are all made of 'star stuff' when it comes to travelling away from our home planet humans are far more vulnerable to the rigours of space than our interstellar origins might suggest. Billions of years of evolution has effectively backed mankind into a corner of the Solar System that it may be now be tricky to leave.

A team of scientists from Russia and Canada analysed the effect of microgravity on the protein make-up in blood samples of 18 Russian cosmonauts who lived on the International Space Station for six months. They found alarming changes to the immune system, suggesting that they would struggle to shake off even a minor virus, like the common cold. "The results showed that in weightlessness, the immune system acts like it does when the body is infected because the human body doesn't know what to do and tries to turn on all possible defense systems," said Professor Evgeny Nikolaev, of Moscow Institute of Physics and Technology and the Skolkovo Institute of Science and Technology.

The effects of spaceflight on the human body have been studied actively since the mid-20th century and it is widely known that microgravity influences metabolism, heat regulation, heart rhythm, muscle tone, bone density, the respiration system. Astronauts are fitter than the general population and have access to the best medical care, meaning that their health is usually better than the general population. Those of comparable age but who never flew, or only achieved low Earth orbit, had less than a one in 10 chance of death from cardiovascular disease. But the chance of death rose to 43 per cent for those who reached the Moon or deep space, probably because of the impact of deadly space radiation.



You can read more at
http://www.telegraph.co.uk/science/2017/09/02/immune-systems-could-stop-humans-reaching-mars/