

Trips / Events

Ideas for trips and events
always welcome!

events@weymouthastronomy.co.uk

- ◆ **17 May CADAS—Dan Oakley: Dark Skies: South Downs National Park and beyond**
- ◆ **3 June BNSS—Martin Griffiths: Astronomy and Philosophy**
- ◆ **6 June WAS—David Boyd—Spectroscopy: What? How? And Why?**
- ◆ **21 June CADAS—Steve Tonkin: Ten ways the universe tries to kill you**
- ◆ **14 July WAS—David Bacon: Probing the Dark Universe**
- ◆ **19 July CADAS—Mike Witt: Tales from the Darkside of the universe**
- ◆ **1 Aug WAS—Guy Hurst: Guest Stars, Ancient and Modern**
- ◆ **16 Aug CADAS—Bill Combes: The International Space Station**

[More events to come...](#)

WAC Upcoming Events:

- 9 June—Ask the Panel
 - 14 July—Strife among the canals: James Fradgley
 - 11 Aug—Open evening at SACC
 - 8 Sept—USA Eclipse of 2017: Chris Bowden
 - 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

 WAC News—

A group of aurora enthusiasts have found a new type of light in the night sky and named it Steve.

Testing showed it appeared to be a hot stream of fast-flowing gas in the higher reaches of the atmosphere.

The European Space Agency (ESA) sent electric field instruments to measure it 300km (190 miles) above the surface of the Earth and found the temperature of the air was 3,000C (5,432F) tter inside the gas stream than outside it. Inside, the 25km-wide ribbon of gas was flowing at 6 km/s (13,000mph), 600 times faster than the air on either side. Relatively little else is known about the big purple light as yet but it appears it is not an [aurora](#) as it does not stem from the interaction of solar particles with the Earth's magnetic field. Until next month ~SK



NOAA's Joint Polar Satellite System (JPSS) to monitor Earth as never before By Ethan Siegel

Later this year, an ambitious new Earth-monitoring satellite will launch into a polar orbit around our planet. The new satellite—called JPSS-1—is a collaboration between NASA and NOAA. It is part of a mission called the Joint Polar Satellite System, or JPSS.

At a destination altitude of only 824 km, it will complete an orbit around Earth in just 101 minutes, collecting extraordinarily high-resolution imagery of our surface, oceans and atmosphere. It will obtain full-planet coverage every 12 hours using five separate, independent instruments. This approach enables near-continuous monitoring of a huge variety of weather and climate phenomena.

JPSS-1 will improve the prediction of severe weather events and will help advance early warning systems. It will also be indispensable for long-term climate monitoring, as it will track global rainfall, drought conditions and ocean properties.

The five independent instruments on board are the main assets of this mission:

The Cross-track Infrared Sounder (CrIS) will detail the atmosphere's 3D structure, measuring water vapor and temperature in over 1,000 infrared spectral channels. It will enable accurate weather forecasting up to seven days in advance of any major weather events.

The Advanced Technology Microwave Sounder (ATMS) adds 22

microwave channels to CrIS's measurements, improving temperature and moisture readings.

Taking visible and infrared images of Earth's surface at 750 meter resolution, the Visible Infrared Imaging Radiometer Suite (VIIRS) instrument will enable monitoring of weather patterns, fires, sea temperatures, light pollution, and ocean color observations at unprecedented resolutions.

The Ozone Mapping and Profiler Suite (OMPS) will measure how ozone concentration varies with altitude and in time over every location on Earth's surface. This can help us understand how UV light penetrates the various layers of Earth's atmosphere.



Caption: Ball and Raytheon technicians integrate the VIIRS Optical and Electrical Modules onto the JPSS-1 spacecraft in 2015. The spacecraft will be ready for launch later this year. Image Credit: Ball Aerospace & Technologies Corp.



JPSS (continued)

The Clouds and the Earth's Radiant System (CERES) instrument will quantify the effect of clouds on Earth's energy balance, measuring solar reflectance and Earth's radiance. It will greatly reduce one of the largest sources of uncertainty in climate modeling.

The information from this satellite will be important for emergency responders, airline pilots, cargo ships, farmers and coastal residents, and many others. Long and short term weather monitoring will be greatly enhanced by JPSS-1 and the rest of the upcoming satellites in the JPSS system.



New Images of Pan, Saturn's Walnut Moon, in Unprecedented Detail By: JoAnna Wendel



[Extracted from EOS article 10 March 2017] The Cassini spacecraft, which has been orbiting Saturn since 2004, will crash into Saturn later this year. But its final descent brings the spacecraft closer than ever before to Saturn's rings and offers scientists a wealth of new research opportunities.

This is because the spacecraft has entered its "ring grazing orbits," Carolyn Porco, leader of the imaging science team for Cassini and current visiting scholar at the University of California in Berkeley, told Eos. Throughout its orbit around Saturn's poles, Cassini passes Saturn's equator and is now "just skimming the outer portion of the rings," she continued.

This close orbit allows the spacecraft to take close-up pictures of moons like Pan, which orbits Saturn at a distance of 134,000 kilometers. The new images of the 35-kilometer-wide moon feature a resolution as fine as 150 meters. "It's just startling. The detail is startling," Porco said of the new images.

Scientists have known about Pan's tutu-shaped waistline for a long time. Ten years ago, Porco and her team wrote [two papers](#) describing how the bulge could have formed. From computer models, the researchers suspect that as the moon coalesced, material from Saturn's rings fell onto the tiny moon's equator and built up its disklike silhouette.



 **Carolyn Porco** 
@carolynporco

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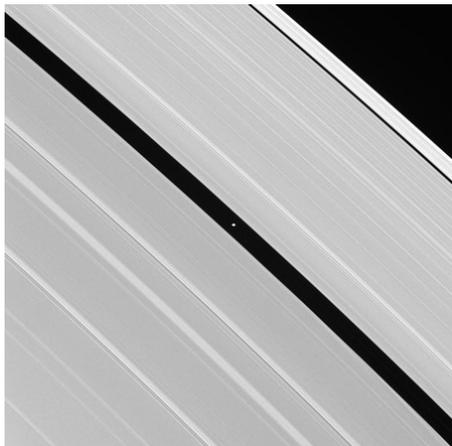
Nearing its end, Cassini delights again. Here is 35-km Pan in mind-blowing detail with its unmistakable accretionary equatorial bulge.

2:44 PM - 9 Mar 2017



Another raw image of Saturn's moon Pan, with its bulging equator at an angle.

Credit: NASA/JPL-Caltech/Space Science Institute



Can you spot Pan? It's the

tiny, bright dot in the middle of the Encke Gap, in Saturn's A ring. For millions of years, Pan has been gathering material onto its surface and kicking material out of its way to form the 325-kilometer-wide gap. Credit: NASA/JPL-Caltech/Space Science Institute

Over millions of years, Pan blazed a trail through Saturn's A ring, clearing what's now known as the [Encke Gap](#). The influx of material onto Pan's equator has decreased but likely continues to some degree to this day, which is why the bulging belt itself looks smoother than the rest of the moon, Porco noted.

"Aside from just the sheer joy of seeing something so alien at such a level of detail," the images will be helpful to scientists studying small moons, asteroids, or comets, Porco continued. Particularly, studying Pan will be helpful when scientists think about how material builds up on a small body that has very weak gravity.

So images like these have "an extension beyond the Saturn system," she said.

https://eos.org/articles/new-images-of-pan-saturns-walnut-moon-in-unprecedented-detail?utm_source=eos&utm_medium=email&utm_campaign=EosBuz2031717