

# Planetarium News

August 2023

## A Weekend Feast of Shooting Stars!

The Earth is now entering a stream of dusty debris strewn along the orbit of a periodic comet known as 109P/Swift-Tuttle. The comet was last seen in 1992 and won't be back again for about a century, but dust grains from the comet can be seen every year as they burn up in the Earth's atmosphere as meteors or 'shooting stars.'

The meteors from this shower all appear to radiate outwards from a small region of the sky in the constellation of Perseus. Hence the shower is known as the Perseids. In ancient times they were called 'The Tears of St. Lawrence'. The Perseids are one of the most reliable meteor showers of the year, producing an abundance of fast, bright meteors, many with persistent trains. This year, conditions are almost perfect because there will be no bright Moon in the sky to spoil the show.



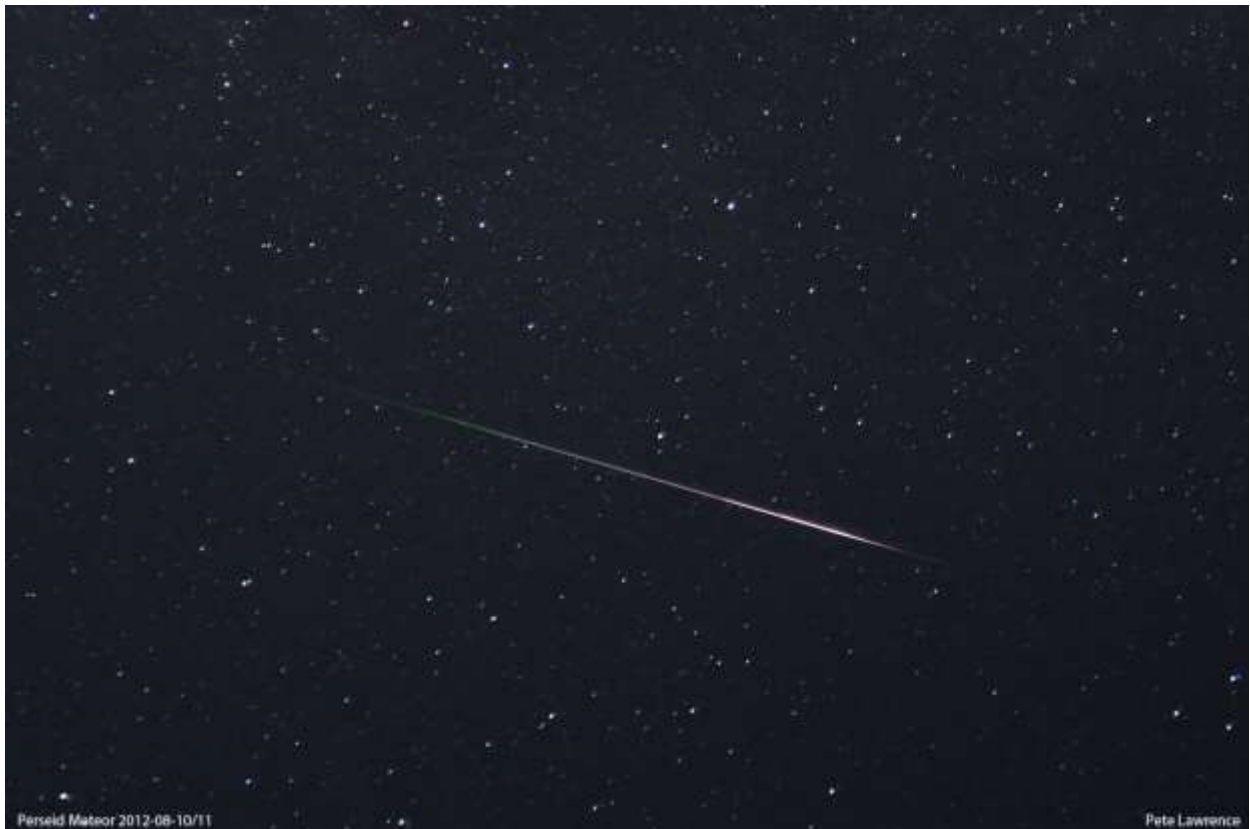
*Meteors streaking out from the radiant in the constellation of Perseus at the height of the annual Perseid meteor shower. Image courtesy of Pete Lawrence.*

Always the summer's main attraction for meteor enthusiasts, the Perseid meteor shower is expected to peak on the early morning of Sunday, August 13<sup>th</sup> so the Saturday night into Sunday morning will provide the best opportunities for observers this year, but there will

still be very respectable numbers of meteors on the preceding night of Friday, 11th into Saturday, 12<sup>th</sup> and the following night of Sunday, 13<sup>th</sup> into Monday, 14<sup>th</sup> August –

### **A Weekend Feast of Shooting Stars!**

Observers watching after midnight on the Saturday night into Sunday morning (August 12-13) should experience increasing activity towards dawn, as the shower radiant (the region in the sky from which Perseid meteors appear to emanate) climbs higher in the eastern sky. There should also be good activity before dawn, early on the Saturday morning, and in the late evening on both Saturday and Sunday.



*A Perseid meteor streaking across the summer night sky. Dust grains from the Perseid shower hit the atmosphere at a speed of almost 133,400 mph – that's 37 miles per second! Image courtesy of Pete Lawrence.*

All else being equal, the best observed rates are found when the Perseid radiant is highest in the sky during the pre-dawn hours. Under cloudless skies, and in a dark viewing site, observers can expect to see between 50 and 70 meteors each hour near the peak. Even in light polluted towns or cities observed rates may still be around ten an hour in the early morning hours when the radiant is high. It doesn't matter in which direction you look, because Perseids may be seen in any part of the sky. Near the radiant the trails will tend to be short, whereas on the other side of the sky the meteors will appear as streaks with long paths.

To get the best view you must try to find a dark viewing site, preferably with an unobstructed horizon, away from city lights – the darker the better. Then you must hope that the weather behaves! Clouds could completely spoil the show. Do wrap up warm because it can get quite chilly late on August nights. Good luck!

## James Webb Space Telescope Celebrates a Highly Successful First Year of Science Operations

From our cosmic backyard in the Solar System to distant galaxies near the dawn of time, the NASA/ESA/CSA James Webb Space Telescope (JWST) has delivered on its promise of revealing the Universe like never before in its first year of science operations. To celebrate the completion of a successful first year, a new JWST image was released of a small star-forming region in the Rho Ophiuchi cloud complex. This is the nearest star-forming region to us. Its proximity at 390 light-years allows for a highly detailed close-up, with no foreground stars in the intervening space.



*JWST image of a small star-forming region in the Rho Ophiuchi cloud complex. Image courtesy of NASA, ESA, CSA.*

The showcased region contains approximately 50 young stars, all of them similar in mass to the Sun or smaller. The darkest areas are the densest, where thick dust cocoons still-forming protostars. Huge red bipolar jets of molecular hydrogen dominate the image, appearing horizontally across the upper third and vertically on the right. These occur when a star first

bursts through its natal envelope of cosmic dust, shooting out a pair of opposing jets into space. In contrast, a star called S1 has carved out a glowing cave of dust in the lower half of the image. It is the only star in the image that is significantly more massive than the Sun. Some stars in the image display tell-tale shadows indicating protoplanetary disks – potential future planetary systems in the making. JWST is an international partnership between NASA, ESA and the Canadian Space Agency (CSA).

## **A Major New Building Project for the Planetarium**

Since it opened in July 2001, the South Downs Planetarium has welcomed over 290,000 visitors and is currently visited annually by around 9000 children of school age and 6000 adults. The objectives of the Planetarium Team have always been to stimulate an interest in science, technology, engineering and mathematics, to encourage more students to take up careers in these areas which are vital to the national economy, and to inspire children and adults to understand more about our Earth, its place in the wider universe and the many exciting developments taking place in space exploration at the present time. Since its establishment, many local students have been encouraged to study physics and astronomy at university. The enormous success of the Planetarium over the past 22 years may be judged by the appreciative feedback we receive from teachers, and the moving letters frequently received from school pupils and other visitors.

At the heart of the Centre is the main auditorium with its dome, excellent star projector, and airline seating which has been recently completely refurbished. The auditorium also features a state-of-the-art air conditioning system. Our dedicated and expert volunteers continue to raise the funds and carry out much of the work themselves to furnish and equip the Planetarium.

However, after 22 years of successful operation, there is now an urgent need to enhance the Centre's facilities through the construction of a new expanded, modern entrance foyer and an enlarged and modernised exhibition area. This will be the single most significant upgrade to the Planetarium's facilities since the original construction phase.

### **Expected benefits of the modernised and expanded entrance foyer and exhibition area**

- Improved visitor satisfaction and improved impressions of the Centre overall. Modern audiences expect the latest in facilities and exhibit technology.
- Enhanced visitor experience for all, including school pupils, college and university students, adult and youth groups, and the general public.
- A more inviting and immersive entrance foyer that creates a positive first impression and sets the tone for the entire visit.
- Additional space for school pupils to enjoy their packed lunches and for group activities aimed at enhancing the educational value of the visit.





- An expanded exhibition area showcasing a wider range of astronomical imagery, hands-on exhibits and educational displays.
- Increased engagement and knowledge-sharing opportunities for all visitors, fostering a deeper understanding of the universe.
- Improved accessibility for disabled visitors through enhanced access and automatic entrance doors.
- A more inclusive and accommodating environment, ensuring that all visitors can fully enjoy and participate in the Planetarium experience.
- Enlarged exhibition space allowing for more in-depth exploration of the exhibits and presentations.
- Promotes scientific literacy and curiosity among visitors of all ages and backgrounds.
- Provides a modern and visually appealing setting that captures the imagination and inspires a love for astronomy and space exploration.
- Reinforces the South Downs Planetarium's position as a leading educational and cultural venue in Chichester and beyond.

Work on the new project began on Monday, 24<sup>th</sup> July 2023 and is expected to be completed by the end of January 2024.

## **Planetarium To Remain Open During Building Works**

The South Downs Planetarium will remain open throughout the major building works which are now underway.

Audience sizes at public shows will be slightly reduced and throughout the summer holiday period afternoon shows will only take place on Sundays and Bank Holiday Monday - but there will be evening shows on other days.

Bookings for school visits and for adult and youth groups will be accepted as normal from September onwards.

We look forward to seeing you! Take a look at our forthcoming public shows listed below and please do visit our website at [www.southdowns.org.uk](http://www.southdowns.org.uk) for more information.

### ***Our Forthcoming Public Shows – Book Soon!***

- Tuesday, 1<sup>st</sup> August, 7:30pm – All Aboard, A Tour of the Planets
- Thursday, 3<sup>rd</sup> August, 7:30pm – Summertime Stars, Moon and Planets
- Sunday, 6<sup>th</sup> August, 3:30pm – Summer Nights, Shooting Stars
- Tuesday, 8<sup>th</sup> August, 7:30pm – Our Galaxy, the Milky Way
- Thursday, 10<sup>th</sup> August, 7:30pm – August Skies Around the World
- Sunday, 13<sup>th</sup> August, 3:30pm – Summer Nights, Shooting Stars
- Tuesday, 15<sup>th</sup> August, 7:30pm – Our Galaxy, The Milky Way
- Thursday, 17<sup>th</sup> August, 7:30pm – Summertime Stars, Moon and Planets
- Monday, 28<sup>th</sup> August, 1:30pm – All Aboard, A Tour of the Planets
- Monday, 28<sup>th</sup> August, 3:30pm – All Aboard, A Tour of the Planets
- Wednesday, 30<sup>th</sup> August, 7:30pm – Amazing Moons of the Solar System
  
- Friday, 1<sup>st</sup> September, 3:30pm – Summertime Stars, Moon and Planets
- Sunday, 3<sup>rd</sup> September, 3:30pm – Seven Wonders of the Solar System
- Friday, 8<sup>th</sup> September, 7:30pm – JWST: A Year of Amazing Discoveries
- Sunday, 10<sup>th</sup> September, 3:30pm – The Northern Lights
- Friday, 15<sup>th</sup> September, 7:30pm – The Northern Lights
- Sunday, 17<sup>th</sup> September, 3:30pm – Our Galaxy, The Milky Way

Please visit [www.southdowns.org.uk/events.html](http://www.southdowns.org.uk/events.html) to book.

***We look forward to welcoming you to the South Downs Planetarium in Chichester very soon.***

*Copyright © 2023 South Downs Planetarium, All rights reserved.*

**Our mailing address is:**

South Downs Planetarium, Sir Patrick Moore Building, Kingsham Farm,  
Kingsham Road, Chichester, West Sussex PO19 8AE