

The perfect shot

by Ryan Gilkes

Barbados has been playing a major role in mapping the latest development in space on planets like **Mars** and **Saturn**, and the moon.

It has also been following the cosmos and doing its part in charting the evolution of **Jupiter** and its two moons — thanks to British astrophotographer Damian Peach, who, for the last few years, has been photographing **Jupiter**, the fifth planet from the sun and the largest planet in the solar system.

This dedication has so far resulted in one of the shots he took of the planet, along with two of its 64 known moons, **Io** and **Ganymede**, showing the surface of the gas giant streaked with colourful bands and dotted with huge oval storms, copping a major global award from **Nature**, **The International Weekly Journal Of Science**.

The photo, which helped to make up this composite image, was taken from the location where he sat down to talk to **Barbados TODAY**: Culpepper Development, St Philip, his home base for the last few weeks.

"Barbados is a particularly good place for doing high-resolution photography because it is a very small island surrounded by a huge expanse of ocean and you have constant winds that blow here — the north-east trade winds. [They] keep the atmosphere extremely settled and still. It is these conditions that you need to get these extremely sharp pictures.

"In 2010, I arranged to come here specifically to photograph **Jupiter**. At that time it was

Jupiter with Ganymede & Io
September 2014



This photograph of Jupiter with two of its moons Io and Ganymede copped a major global award from Nature, The International Weekly Journal Of Science.

particularly close to the earth. It was during the course of those few weeks that I managed to get some extremely sharp images of the planet. One in particular ended up becoming a winning picture," he recounted. Close to four years later, that image, along with

the further work he and others have done to gain images, came again into sharp focus just a matter of weeks ago with **NASA** — The National Aeronautics and Space Administration in the United States, looking at some of the changes that were taking place on the planet.

"... The famous spot on Jupiter, that big red storm ... it was estimated to have been about two or three times the size of earth at one time ... It has actually shrunk very rapidly. Just this past week, professional astronomers have actually targeted the **Hubble** space telescope on the planet to get a very, very clear photo to see what is going on and to try to better understand why it is shrinking.

"[This] is probably a good example to show how the images that I take are not just pretty pictures. There is a lot of interesting science that comes from this kind of work."

But exactly how did Damian, who by profession is an electronics engineer, become involved in the area of astronomy and photographing the planets?

"I very first became involved in astrology

from about the age of about nine or ten at primary school and it was from around that time that I became interested from reading books; also, through the famous British astronomer the late Sir Patrick Moore, who had a programme, the sky at night which would be broadcast every month.

"And I just found it absolutely fascinating, the heavens, the night's sky, the planets. It was really from that that led to the present day. My interest is very long-lived," he said.

As we talked, a glance out in the yard to where Peach has set up shop revealed his stargazing equipment — a 356mm reflecting telescope manufactured by Celestron USA, with a high-speed video camera called a **Flea3**.

"Basically it is a high-speed video camera so the images are being taken very quickly. With a conventional SLR you are just taking snaps slowly, but with this kind of technology you are taking images, about a hundred images every second. It is obtaining images very rapidly and it needs to do that because earth's atmosphere is shimmering and a fraction of light is coming through it.

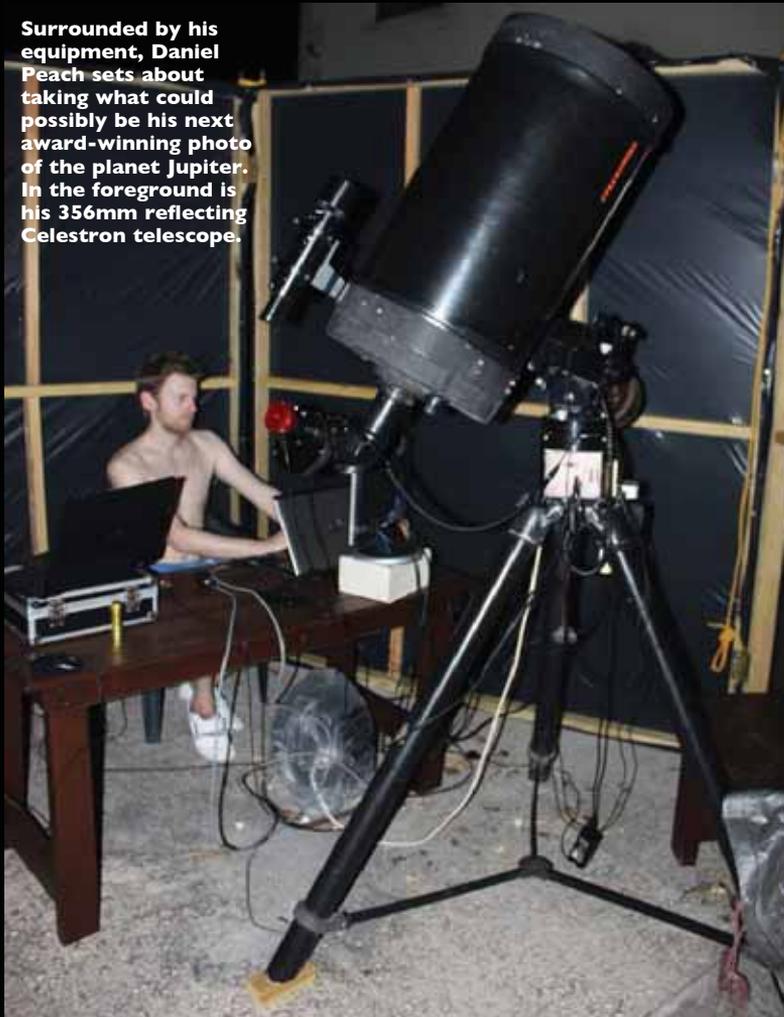
"That is why the **Hubble** telescope was put up in space; to escape this effect ... [But] basically what these cameras do is allow you to get around that turbulence by imaging so very quickly, and what you do is stack all of the images you take into one picture, and that gets rid of all the graininess and just leaves you with detail and that is the basic process of taking those images."

Looking to the future, Peach says he will be spending the next few months deciphering and cleaning up the data that he has collected here in Barbados, after which he will send it to others in the global scientific community for study. However one thing is certain, he will be back, as he continues to plan for what will be a major astronomical event in a few years' time.

"In 2018, we have a very, very close approach of **Mars** to **Earth**. What that means is that the planet will appear larger and brighter than pretty much any time in our skies, and it will be especially well placed here in Barbados.

"I will certainly be returning to photograph that, and I think it will result in perhaps the most detailed ground-based images of **Mars** ever taken, simply because [it] will be so close, and the technology we have now is so advanced." **ryangilkes@barbadostoday.bb**

Surrounded by his equipment, Daniel Peach sets about taking what could possibly be his next award-winning photo of the planet Jupiter. In the foreground is his 356mm reflecting Celestron telescope.



British astrophotographer Damian Peach.