Hampstead Scientific Society
Astronomy Section

Annual report

2007/08 session

During the early part of the 2007 session, Saturn was still reasonably placed for observations, but its altitude is declining and like Jupiter it will soon be absent from the winter skies and only available towards the end of the session. The ring system is now beginning to close and the planet's prominent south equatorial belt had a distinct reddish tint, well seen in a webcam image taken by the Astro.Sec. with a 16.5-inch Cass.

Website

After a gestation period lasting a full year, the section's new web pages were finally connected to the Society's web-site in late July. Our thanks to *Dan Pooley* for the enormous amount of work that he has put into this project which proved to be an instant success. Just 24 hours after going on-line I was contacted by Time-Out Magazine who had browsed it and were inspired to feature the Observatory in an article published on 15th August. Similarly, the Magazine Super-Collider sought permission to reproduce one of the Astro.Sec's photographs in their publication. Then, the Astro Sec. was interviewed by the magazine Limited Editions for a feature article that was published in November. All excellent publicity for the Society.

Whilst on the subject of the website we must not forget the contributions made by *Martin Williams*, for financing the site and providing unlimited space, and all the work put in to it over the years by *Julie Atkinson* to keep it up to date. The web-site has become an increasingly important publicity organ for the Society.

Perseid meteor shower

Despite the fact that the 2007 Perseid meteor shower took place under favourable conditions, with no moon and largely clear skies, we decided not to open the Observatory. The observatory site is not the ideal location for a meteor watch due to the light pollution and as the shower maximum was not due until 03.00 hrs. BST, it would have made it effectively an all-night session, for which I received no requests. However, *Simon Lang* decided to seek out a dark location in Sussex and was rewarded with fine views of the shower. He even managed to capture two Perseids on the same frame of a short exposure guided photograph reproduced on the web-site.

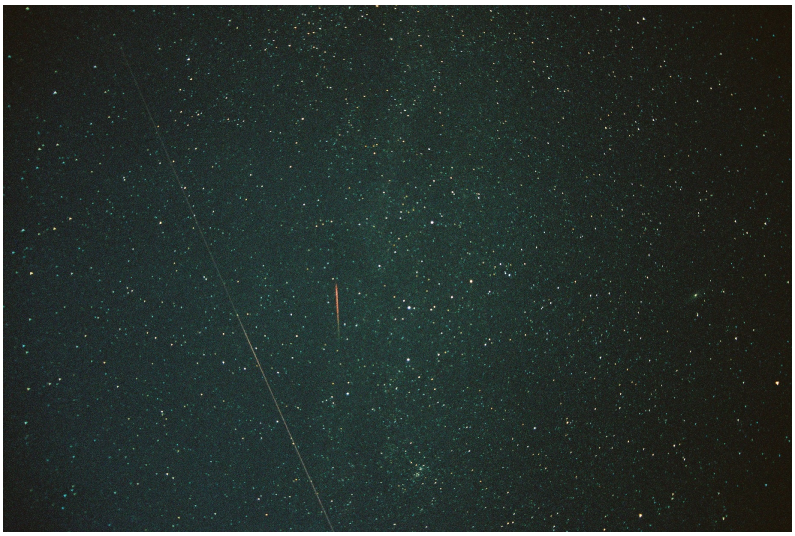

Figure 1: Two Perseids Cross Cassiopeia. Taken by Simon Lang.

Working party

The observatory working party took place on Sunday 9th of September, deliberately arranged late to avoid the high temperatures that normally bedevil this event. After a cool wet summer, September featured some fine warm days, including the 9th but it was not so hot as to be uncomfortable. The volunteers consisted of the *Astro Sec.*, the *Assistant Astro. Sec*., *Nayna Kumari* and *John Tennant*. The path and steps were cleared of weeds, the telescope was cleaned, the observatory and annexe, cleaned and tidied up. *Simon* fitted the refurbished illuminated 'Open' sign and replaced the step lights with low energy consumption bulbs. Despite the low attendance this year, the volunteers put in a good day's work and we thank them for their support.

David St.George. 1920-2007

During the last week in September, we received the sad news of the death of David St.George at the age of 87. David was a long-standing member of the Society, having joined in 1959. He served on the Society's Council and was an assistant demonstrator at the Observatory for many years where his technical expertise with electronics was put to good use maintaining the Observatory electrical installation. A full obituary appears on the Society's website.

New Session

The winter session of public open nights resumed on Friday October 12th, predictably a cloudy night. The weather improved slightly on the 13th but thin hazy cloud and high light pollution levels

resulted in a limiting magnitude of +3. With no bright planets or moon on view, the 25 visitors who turned up had to be content observing a few double stars.

Comet C/2007 F1 (LONEOS)

During early October, we were alerted to the discovery of Comet 2007 F1 (LONEOS).

On the evenings of 19th and 20th of October it passed close to the star eta Bootis at which point it was predicted to attain a magnitude of 6.3. Despite clear skies, neither *Terry Pearce*, observing from CAMBS. nor the *Astro.Sec.* could detect it in the twilight sky. Perhaps the predicted magnitude was not achieved.

Comet 17/P 2007 HOLMES

During October we received news that Comet Holmes had suffered a sudden outburst. The comet, first discovered in 1892 is one of the Jupiter family of comets with a perihelion of 2.2AU and it has experienced similar outbursts before. Between 23-24th of October, it was reported to have increased in magnitude from 17th to approx +2 rendering it visible to the naked eye. That is a million-fold increase in brightness! At the time of the outburst, the comet was situated in the constellation of Perseus, roughly between alpha (Mirfak) and Capella, placing it near to the zenith at midnight. Unfortunately, cloud cover was total on the 25th and 26th. We had high hopes that the sky would be clear for the occultation of the Pleiades on the following night when we could have seen the comet as well; but the sky remained totally overcast.

Figure 2: Comet Holmes in Perseus (Doug Daniels).

After two days of relentless cloud and rain, the sky finally cleared late on Sunday 28th. Comet Holmes was an obvious naked eye object not far from alpha Persei (Mirfak) despite the presence of a moon two days after full and close by. To the naked eye it appeared to be about 2nd magnitude, at least as bright as Algol (mag. 2.3).

Through the Astro. Sec's 16.5-inch Cassegrain it appeared as a huge pale circular disk with a brighter central area with an off-centre nucleus, and two field stars could be clearly seen shining through the comet. The overall angular diameter of the dust disk was about 15 arc/minutes and as it was at a distance of approx 2.2 AU, this equates to a physical diameter *as large as the Sun!* It was the strangest comet that I have ever seen. I managed to take many images with the DSLR. The comet continued to loop in Perseus throughout November/December 2007. By January 2008 it had faded and expanded to such an extent – over ¾ degree, that it was difficult to detect in binoculars. Holmes has been continually monitored by members of the section and a full illustrated report was prepared and observations sent to the BAA and SPA comet sections.

Comet 8/P Tuttle

Comet Holmes was not alone traversing northern skies. During November and December, Comet Tuttle was slowly moving south through Cepheus, Cassiopeia and Andromeda, passing Earth at .25 AU and reaching perihelion in Jan. 2008. This was its closest approach to Earth since its discovery in 1790. It was predicted to just about attain naked eye visibility. In the event it was only visible in binoculars with great difficulty.

Mars

Throughout November and December, Mars was steadily climbing away from the eastern horizon, coming to opposition on Christmas Eve when it presented a disk diameter of just 16 arc/minutes but well situated on the Gemini-Taurus borders.

In December we received news of a possible impact on Mars by asteroid 2007 WD/5. Had the impact occurred, it would have been in the region of the Martian equator. The event, predicted for January 30th 2008, initially had a probability of a 1 in 135. This was later refined to 1 in 75. Such an impact would have been equivalent to an explosion of 15 megatons of TNT and would have produced a crater ½ mile across. In the event, the impact did not take place.

Mercury

Mercury's greatest eastern elongation occurred on 22 January when it was some 19° from the Sun. A bright, clear sunset on Jan. 21st allowed the *Astro. Sec.* to find it with binoculars.

Total Lunar Eclipse Feb. 21 2008

There was a total lunar eclipse in the early hours of February 21st. Prior to this date we had enjoyed

several fine clear evenings, but not on the night of the eclipse. Totality was due to begin at about 03:30 hrs. No plans were made to open the observatory at this early time, but in the event the weather prevented any observations.

The Sun

During the early part of the session, the Sun was observed on several occasions and it continued to present a totally blank disk. However, towards the end of the session one or two small sunspots were seen perhaps heralding the start of the new solar cycle.

The session ended on April 27th, a wet Sunday morning, continuing the record of poor weather conditions that have been a feature of this session. Despite this, the public open nights that were clear attracted a total of around 500 visitors during the session, indicating that the Observatory continues to provide a valuable interface between the Society and the general public.

Hampstead & Highgate Festival

As usual, the Society participated in the annual Hampstead & Highgate Festival with three sessions at the Observatory on the evenings of May 12th, 16th and 17th. All three sessions were fully booked but unfortunately only the 12th was partially clear. However, all those who attended seemed to enjoy the experience.

I would like to take this opportunity to thank the Assistant Secretary, *Simon*, for organizing the roster, the section Treasurer, *Julia*, for keeping us solvent, *Dan Pooley*, for the huge task designing the section web-site and putting up with my panic e-mails while learning how to edit it, and to all Demonstrators and Assistants for their continued support providing what may still be regarded as a unique service to the public.

Doug Daniels (Astro.Sec)