



MINUTES OF THE IRISH ASTRONOMICAL ASSOCIATION 49th ANNUAL GENERAL MEETING: Wednesday 12th April, 2023.

The 49th Annual General Meeting of the Irish Astronomical Association was held on Wednesday 12th April 2023 in the Larmour lecture theatre, Physics Building, Queen's University of Belfast.

Council members in attendance were: Andy McCrea, Tony Kempston, Eve Kempston, Terry Moseley, Pat O'Neill, Paul Bates, Simon Hearne, Danny Collins and John McClintock. A total attendance of 29 persons was noted.

1. AGM:

The AGM started at 7:30pm with President Andy McCrea chairing the meeting.

2. APOLOGIES:

Apologies were received from: Paul Evans and Mary Kirwan-Mackey.

3. PRESENTATION:

Andy McCrea presented the Fitzgerald Medal to Professor Alan Fitzsimmons for his outstanding support for the work of the Irish Astronomical Association over many years. Applause were given and a photograph was taken of Professor Fitzsimmons with Andy McCrea.

4. MINUTES OF PREVIOUS AGM:

The minutes of the previous AGM were read and approved.

The minutes are available to download from the IAA website.

Proposed: Andy McCrea. Seconded: Simon Hearne.

5. SECRETARY'S REPORT:

The Secretary's report was read in which Paul Bates paid tribute to all the IAA council members for their help in running the association and to all IAA members for their support of the association over the past year. A summary was given of each of the lectures on the programme between September and April together with a summary of the work of the observing section.

The Secretary's report for the year 2022-2023 is available to download from the IAA website.

Proposed: Simon Hearne. Seconded: Tony Kempston.

6. TREASURER'S REPORT:

The Treasurer's report was read in which Pat O'Neill indicated that IAA income was approximately £4500 (mostly comprising membership subscriptions) and IAA expenditure was approximately £5700, giving a net loss of approximately £1200. However approximately £750 of this is a carry-over of one edition of Stardust magazine from last year. Another exceptional expense this year was approximately £650 for Zoom fees over the previous four years. The closing balance is approximately £11,300. The council will consider some options to improve the state of the association's finances in the year ahead.

Pat thanked Mary Kirwan-Mackey for her work as Membership Secretary which involves collecting and banking the membership subscriptions and maintaining the membership database. Pat also thanked Professor Alan Fitzsimmons for making the venue available to IAA free of charge.

The Treasurer's report for the year 2022-2023 has been signed by the auditor, Erin Wigston, and is available to download from the IAA website.

Proposed: John McClintock. Seconded: Danny Collins.

7. MEMBERSHIP SECRETARY'S REPORT:

The Membership Secretary's report for the year 2022-2023 is available to download from the IAA website. In Mary's absence, Pat reported that the current membership stands at 199 members (compared to 202 last year). 14 new members have joined since the last AGM. The council will consider introducing a reduced subscription rate for students in Sept. 2023. The report was read and approved.

Proposed: Terry Moseley. Seconded: Paul Bates.

8. PRESIDENT'S REPORT:

Andy McCrea mentioned that observing sessions have now moved to the Clandeboye Estate where a run-off shed houses a reflecting telescope which, with an attached camera and Wi-Fi, allows images to be transferred to a nearby classroom to be viewed on a screen. John McClintock and David Stewart were thanked for helping with these events. Andy highlighted key events during the year, including increased solar activity, first images of the disk at the black hole in the centre of our galaxy, the launch of 'Our Place in Space' by Stephen Smart and Oliver Jeffers, first images from the JWST, Jupiter and Saturn well placed for observation, the DART mission to Dimorphos, a partial solar eclipse, Mars well placed for observing, Geminids display, the appearance of a green comet, outreach event at Lough Neagh Discovery Centre, some good Aurorae views and a conjunction of Venus and Jupiter.

9. ELECTION OF COUNCIL MEMBERS/OFFICERS:

The 2022/2023 IAA Council were proposed on block and the proposal was unanimously agreed by all member:

President & IAA Webmaster:	Mr Paul Evans
Vice President & Stardust Editor:	Dr Andy McCrea
Vice President:	Mr John McClintock
Membership Secretary:	Ms Mary Kirwan-Mackey
Hon. Secretary:	Mr Paul Bates
Hon. Treasurer:	Mr Pat O'Neill
PR Officer & Meetings Organiser:	Mr Terry Moseley
Council Member:	Ms Paula Wallace
Council Member:	Mr Tony Kempston
Council Member:	Mr Simon Hearne
Council Member:	Mr Danny Collins
Junior Vice President:	Ms Eve Kempston
Junior Vice President:	Ms Poppy Hearne

Ex-Officio Members: Prof. Mike Burton, Dir. Armagh Observatory and Planetarium
Prof. Mark Bailey, Emeritus Director Armagh Observatory
Prof. Alan Fitzsimmons, Astrophysics Research Centre, QUB
Prof. Stephen Smart, Astrophysics Research Centre, QUB
Prof. Francis Keenan, Astrophysics Research Centre, QUB
Mr Robert Hill, NI Space Office

Proposed: Geoffrey Bowman. Seconded: David Stewart

10. AOB:

No other business was noted.

11. LECTURE: INTRODUCTION TO COMETS

After the business of the AGM, a short talk was given by Fraser Gillan, PhD student from the Astrophysics Research Centre, QUB, entitled 'Introduction to comets'.

Fraser began by referring to comet C/2022 E3 (ZTF), a long period comet: the third comet discovered in the first half of March 2022, at the Zwicky Transient Facility. It became more easily visible in January and February of 2023, showing a characteristic green colour caused by the interaction of the solar wind with diatomic carbon molecules which break apart to emit a green light.

Fraser went on to explain the basic characteristics of comets. They exist in two zones in the outer solar system, the Kuiper Belt (at a distance of 40 – 50 AU) and the Oort Cloud (at a distance of 10,000 – 100,000 AU). Comets have a nucleus of ice and dust and generally follow a highly elliptical orbit around the Sun. As they approach the Sun, at the perihelion of their orbit, their temperature increases and they typically emit two tails: one is a gas/ion tail which points away from the Sun under the influence of the solar wind and the second is a dust tail which points backwards along the orbit of the comet.

Comets are of interest to researchers as they are very old and have remained unchanged since the formation of the solar system. By studying comets we can learn about conditions that existed in the outer solar system at that time and observations can also inform our modelling of exoplanet systems. As comets can potentially pose an impact risk, causing serious damage on Earth, their tracking is important.

Fraser then briefly described his research project investigating the dust production rates of fifty Jupiter-family comets that reached their perihelion in 2020 and 2021, using data from the Asteroid Terrestrial-impact Last Alert System (ATLAS). ATLAS is a network of four ½ metre telescopes based in Hawaii, South Africa and Chile that have been surveying the sky for more than six years since 2016 and has generated a vast amount of data. The Jupiter-family comets originate in the Kuiper Belt, with short orbital periods (less than 20 years) and low inclinations to the ecliptic (less than 30 degrees). Most comets have elliptical orbits and sublimate as they approach the Sun, producing a coma and dust and gas tails. The maximum level of dust and gas is observed after perihelion due to thermal inertia (resistance to temperature change). Two 'out-lying' comets have been observed in the data set which have almost circular orbits and the effect of perihelion is therefore less pronounced.

Paul Bates.

Hon. Secretary

12th April, 2023.