

**Astronomical Society of Southern Africa**  
**Report of the Comet, Asteroid and Meteor Section for the year ending June 2025**  
***Tim Cooper, Director***

The following observations are reported for the full year ending 30 June 2025.

**Comets**

Kos Coronaios imaged Comet 12P/Pons-Brooks. A report on all observations and images of this comet was published in MNASSA Vol 84, pp41-54. Images were received of Comets C/2023 A3 (Tsuchinshan-ATLAS) and C/2024 G3 (ATLAS) from Kos Coronaios, Johan le Roux, Lafras Smit, Angus Burns, Willie Koorts, Wim Filmalter and Oleg Toumilovitch. Magda Streicher and Tim Cooper observed both comets visually. Both comets reached naked eye visibility, and full reports will be published separately in MNASSA.

**Meteors**

Visual meteor shower observations were conducted by Tim Cooper and Magda Streicher as follows:

<b>Meteor shower</b>	<b>Tim Cooper hours</b>	<b>Magda Streicher hours</b>
Geminids	1.33	--
Eta Aquariids	8.67	4.78
<b>Total</b>	<b>10.0</b>	<b>4.78</b>

Observations of the eta-Aquariids confirmed the 2025 return was at normal ZHR levels with no occurrence of enhanced activity.

**Cameras for Allsky Meteor Surveillance (CAMS)**

CAMS@SA operates sixteen cameras as part of the global CAMS network with eight cameras at Bredell (BR) and eight cameras at HartRAO (HA). CAMS@SA captured and determined orbits for 8237 meteors during the past year, including contributing observations of an outburst of 3-Sagittarids during 11-23 June 2025 [1].

**Global Meteor Network (GMN)**

The South African coverage increased to eleven cameras including those operated by Paul Ludick, Andre Bruton, Louw Ferreira, Johan Swanepoel, Laingsburg High School and Touwsrivier Primary School. The GMN cameras participated in the discovery of two new showers: that of M2025-F1 in Puppis in March 2025 [2] and that of M2025-K1 in Octans in May 2025 [3]. In addition, they also participated in detection of an outburst of meteors possibly related to the tau-Herculids and connected to comet 73P/Schwassmann-Wachmann in May/June 2025 [4].

Pierre de Villiers and Tim Cooper continue to serve on the Global Project Team for the GMN Outreach Project, which aims to provide cameras to schools to promote STEM education and to create a network between schools and meteor scientists. Derek Duckitt also serves on the local organizing team. Four cameras, kindly sponsored by a private individual and completed by Istrastream in Croatia were installed at Touwsrivier Primary School and Laingsburg High

School with grateful assistance from Radim Stano, Project Lead, GMN Outreach Team. Plans are in place to expand the coverage to further schools.

## Fireballs

Thirty-nine fireballs were reported to the Director, all of which were analysed before adding to the Southern African Fireball Catalogue (SAFC), bringing the total number of investigated events in the Catalogue to 522. The most notable event was the daytime bolide of 25 August 2024, which resulted in the Nqweba Meteorite. Daniel Cunnama fielded immediate requests from the media. Peter Hers and Tim Cooper represented ASSA on a team that investigated the bolide, including Prof Roger Gibson, Ms Robyn Symons and Dr Leo Vonopartis (all University of the Witwatersrand), Dr Carla Dodd (Nelson Mandela University) and Dr Peter Jenniskens (NASA Ames and Seti Institute). A total of 150 eyewitness reports were collected including six videos, and analysis of all reports is continuing. The team published a Commentary in the South African Journal of Science [5]. Roger Gibson [6] and Robyn Symons [7] presented talks on behalf of the team at Geocongress 2025 held in Bloemfontein from 23-27 June 2025. Further science papers are planned and a full report with all eyewitness accounts will be published in MNRAS in due course.

## Asteroids

Louw Ferreira (MPC station L68) conducted positional astrometry on 12 asteroids and photometry on 3 asteroids in order to measure rotation rates. No asteroidal occultations or close approaches were observed in the past year. There remains an opportunity for observers to become involved in these activities.

All members who contributed observations are warmly thanked.

Tim Cooper

Director, Comet, Asteroid and Meteor Section

## References

1. CBET 5573, *3-Sagittariids Meteor Outburst 2025*, Central Bureau for Astronomical Telegrams, issued on 2025 June 26, Green D. W. E. ed.
2. CBET 5535, *New Meteor Shower M2025-F1 in Puppis*, Central Bureau for Astronomical Telegrams, issued on 2025 April 1, Green D. W. E. ed.
3. CBET 5559, *New Meteor Shower in Octans*, Central Bureau for Astronomical Telegrams, issued on 2025 June 2, Green D. W. E. ed.
4. CBET 5561, *Two Meteor Shower Outbursts with Potential Connection to Comet 73P*, Central Bureau for Astronomical Telegrams, issued on 2025 June 6, Green D. W. E. ed.
5. Gibson, R.L., Cooper, T., Vonopartis, L. C., Dodd, C., Hers, P., and Ashwal, L.D. *A first report on the Nqweba bolide and meteorite fall event in the Eastern Cape Province, South Africa, on 25 August 2024*. S Afr J Sci. 2025;121(5/6), Art. #21600. <https://doi.org/10.17159/sajs.2025/21600>.
6. Gibson, R., Cooper, T., Hers, P., Dodd, C., Vonopartis, L., and Jenniskens, P. *The Nqweba Bolide of August 25, 2024 – Scientific Observations, Analysis and Recommendations*, Geocongress 2025, Bloemfontein.

7. Symons, R., Hers, P., Cooper, T., Dodd, C., Gibson, R. and Vonopartis, L. *Content Analysis of the Nqweba Fireball Observer Reports and the Role of Public Engagement*, Geocongress 2025, Bloemfontein.