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AARGnews

The Newsletter of the Aerial Archaeology Research Group

Issue 73: October 2026



- AARG 2026 Conference Reports
- Mediterranean Landscape Archaeology Study Day
- Lidar Analysis of Malaventura Fortress
- Suboptimal Exposure Mode in Aerial Photography
- COVID-19 Dinosaur Geoglyphs
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aarg Aerial Archaeology Research Group

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AARGnews is the bi-annual newsletter of the Aerial Archaeology Research Group and is the only regular open access periodical dedicated to aerial archaeology. It is a diverse and open forum for the discussion and exchange of new (and old) ideas related to aerial archaeology, remote sensing, and landscape studies.

We welcome articles of any length and format. You can write about your research, methods, techniques, case studies, reviews, opinions, or anything else that might interest our readers. We would particularly welcome the inclusion of photographs, images, maps, plans, or other illustrations to support your article.

If you are not sure whether your idea is suitable for *AARGnews*, please get in contact and we will be happy to assist you in shaping or fine-tuning your contribution for a forthcoming issue.

Browse our public Zotero library at: https://www.zotero.org/groups/6701667/aargnews_editorial_team/library

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Cover picture: Taken from the poster designed by Andrea Devlahović for the AARG 2026 conference held in Pilsen, the photograph by Martin Gojda shows a part of the landscape around the Mount Říp, an historically important symbol of the Czech identity. This was the core area that was visited during the AARG 2026 conference field trip. A crop-marked Iron Age settlement located in the middle of the village green (not visible on this photograph) is one of a few prehistoric sites situated apparently close to the Mount.

Editorial

Martin Fowler [1]

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Welcome to the October 2026 issue of *AARGnews*. From reports of the AARG Conference and the benefits of suboptimal exposure modes in aerial photography to a medieval fortress lidar survey and dinosaur geoglyphs, we hope this issue offers something to interest every reader.

AARG Conference

The annual AARG meeting took place in Pilsen last month and, once again, the gods conspired to prevent me from attending. If you were also unable to attend—or would simply like to revisit the event—this issue includes two articles about the conference along with a series of 'Postcards' from the meeting. Recordings of the papers will also be available on the AARG YouTube channel once they have been uploaded in the coming weeks. Unfortinately, the mouth-watering catering seen in the photograph will remain an experience reserved for the delegates.



A selection of mouth-watering food at the welcome reception of the AARG Conference in Pilsen. Photo: Hana Kolihová.

All change 1

You may have noticed a subtle change to the layout of this edition of *AARGnews*. Microsoft's unilateral decision to discontinue their *Publisher* application on 1st October 2026 meant that this issue had to be produced using a new desktop publishing package, *Affinity*. This has provided an opportunity to improve readability by replacing the former three-column layout with a two-column format, thereby reducing hyphenation and word-spacing issues. The presentation of article titles and author details has also been revised, including the addition of ORCID iDs so that you can easily look up an author's profile. Hyperlinks have been toned down to a light blue colour so that they don't distract from the text and, as before, you can navigate back to the *Contents* page by clicking on the ***AARGnews* 73** at the top left of every page.

Although moving to *Affinity* has involved a frustratingly steep learning curve and a few issues remain to be resolved, I hope you will find the new format at least as good as its predecessor. Your feedback would be greatly appreciated and can be submitted using the online feedback form.

All change 2

Well, not quite. At the 2026 Annual General Meeting, several AARG Trustees and Committee members changed. Lenka Starková was elected as Chair and Łukasz Banaszek stepped sideways to become Vice Chair after three years as Chair. We said goodbye to Włodek Rączkowski, Sara Popović and Susan Curran, and welcomed Matthew Oakey and Zoltán Czajlik as trustees, and Sally Evans as our new Honorary Secretary. Many thanks to Łukasz, Włodek, Sara and Susan for all their hard work over the years.

Lidar, LiDAR or ALS?

As with any relatively new technology, terminology can be troublesome and the terms LiDAR and lidar are used interchangeably in the literature. For consistency, the *AARGnews* Editorial Team has adopted **lidar** as its preferred spelling in editorially produced content, rather than **LiDAR**. The term derives from *light detection and ranging* and, like radar (*radio detection and ranging*), originated as an acronym[2] but has become an established word in scientific and technical usage. The lowercase spelling reflects this linguistic development and is consistent with the European Archaeological Council's Guidelines for the Use of Airborne Laser Scanning (Lidar) in Archaeology (2025).

The terms lidar and airborne laser scanning (**ALS**) should also be distinguished. Lidar is the sensing technology, whereas **ALS** describes the survey method in which laser scanning is conducted from an airborne platform. **ALS data** refers to the resulting dataset. Although these terms are closely related, they are not strictly interchangeable.

The use of lidar is an editorial convention rather than a requirement imposed on contributors. *AARGnews* does not prescribe whether authors should use lidar or LiDAR in their

[2] Some may consider lidar to be a portmaneau rather than a strict single letter acronym.

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own submissions but nevertheless strongly encourages them to consider the use of the term **lidar** in order to be consistent with the EAC guidelines.

The hot dry summer of 2026

As described briefly on page 9, the UK's exceptionally hot, dry summer of 2026 was ideal for aerial archaeology, with buried features appearing as parchmarks and cropmarks. Similar heatwaves affected much of Europe, and western Europe recorded its hottest June on record. We hope to bring you some articles describing the archaeological discoveries made during the summer from the UK and further afield in the April 2027 issue of *AARGnews*.

Anticipating a good cropmark season, I kept my new palm-sized drone ready to photograph any features that I had previously seen from just above ground level in the fields on nearby Worthy Down[3]. Unfortunately, they did not reappear. Despite checking almost daily in the summer heat, I found that the wheat crops revealed nothing; the marks had previously appeared in oats but had not been not seen since in barley and wheat. All was not lost as I did manage to photograph some remains from Worthy Down's time as *HMS Kestrel*, a wartime airfield. These included the only surviving Dutch Barn aircraft hangar and perhaps the most extreme crop mark of all: a buried Pickett-Hamilton fort. This is a hardened field fortification designed to be lowered into the ground when not in use. I will continue my quest next year to observe crop marks on Worthy Down ... and hope the farmer chooses to plant oats!

In this issue

In this diverse issue, Łukasz Banaszek pens his final piece as AARG Chair and offers his perspective on his past three years in post. Lenka Starková, our new Chair, introduces herself and gives her initial thoughts on how she would like to take the organisation forward.

Our *In the News* section brings you a selection of items that may be of interest and is followed by a report of the AARG Conference in Pilsen by Eileen Kerhouant and Carmen Miu Bem together with a series of 'Postcards' from the meeting. The four student volunteers who helped run the conference, Adéla Hrabíková, Hana Kolihová, Josef Ulbrik and Tomáš Kroupa, also provide some of their thoughts and views of the conference and presentations.

Continuing the theme of meeting reports, Gianluca Cantoro describes a study day that was held in Rome to celebrate the achievements of Dinu Adamesteanu, one of the most important figures in postwar Italian archaeology. The day confirmed the enduring relevance of Adamesteanu's work and the contnuing importance of aerial photography, territorial analysis, and interdisciplinary approaches in archaeology.

In the first of three technical contributions in this edition, Antonio Jesús Oriz Villarejo examines the archaeological significance of the Malaventura fortification in Despeñaperros, Spain, near the site of the historic Battle of Las Navas de Tolosa (1212). His study presents the results of a lidar survey supported in part by a grant from the AARG Fund.

Geert Verhoeven argues that aperture-priority mode with Auto ISO and a maximum exposure-time limit offers a more controlled compromise than shutter-priority exposure mode for observer-directed archaeological aerial photography.



The ultimate crop mark? A Pickett-Hamilton hardened field fortification photographed in a field of wheat at the former wartime airfield of HMS Kestrel on Worthy Down, Hampshire, on 1st July 2026. Apart from the obvious tractor 'tram lines' and tracks left by dogs and other animals, no other featureas are visible in the crops. Photo: Martin Fowler.

And in what was originally considered a possible contribution to the whimsical *And finally…* section, your editor presents an article describing the dinosaur geoglyphs that were created by a family in Gloucestershire during the COVID-19 pandemic. Fortuitously captured in a satellite image on Google Earth, the image represents an archaeological trace of the social and material culture of the pandemic.

Continuing the series started a year ago, myself and Eileen Kerhouant present a roundup of 109 research publications from the past six months, curated especially for the aerial archaeology community.

In the AARG Annual Report 2026, the committee members report on activities and achievements over the past year.

To round things off, our *Noticeboard* is packed with essential information about AARG membership, available resources, and opportunities to access funding for your studies.

And finally, don't miss the photographs on page 62 of what the best-dressed aerial archaeologists are wearing in 2026.

AARGnews 74

AARGnews 74 is scheduled for publication in April 2027 and we welcome contributions to the issue. The closing date for submissions is **15th March 2027**, but please get your contributions in earlier if you can, as that will help with the production of the issue (and will also help ensure that your contribution is included in the issue!). *Notes for Contributors* can be found on page 63.

Reader feedback …

We value your feedback! So please consider completing this short reader feedback survey on the content of this issue: ***AARGnews* 73 reader survey**. It is totally anonymous and will only take a minute, but your replies will help us to improve future issues of *AARGnews*. Thank you!

[3] See: 'Fishing for crop marks' on Worthy Down, Hampshire. *AARGnews* 66: 27-36 (2023).

Outgoing Chair's Piece

Łukasz Banaszek [1]

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Three years ago, when I took over as AARG Chair, I spoke about continuity, community, and the importance of creating opportunities for members to connect through a shared interest in aerial archaeology and archaeological remote sensing. As I write my final Chair's Piece, I reflect on the collective efforts of AARG members, Committee, Trustees, event organisers and friends who have helped ensure that AARG continues to lead and influence the field.

One of the greatest pleasures of this role has been witnessing the continued growth of our community. Over the last three years, membership has increased from about 115 in the challenging years following the COVID-19 pandemic to over 170 in 2026. New members have joined us from across Europe and beyond, ranging from internationally recognised specialists to students taking their first steps in the field. The diversity of experience, expertise, and perspectives within AARG remains one of its greatest strengths, and I am delighted that the organisation continues to be an inclusive and welcoming space for everyone with an interest in aerial archaeology.

Our annual meetings remain at the heart of that community. Since 2023, we have returned to York and Pilsen and finally after years of struggle reached Trondheim, with preparations already underway for future meetings. Each conference has provided opportunities not only to learn and share new research, but also to renew old friendships, establish new collaborations, and remind ourselves why professional and personal networks matter. Seeing conference venues filled with discussion and enthusiasm is extremely rewarding for both the local organisers and AARG Committee.

I am particularly proud that AARG continues to invest in students and early career researchers. Through Bursaries, AARG Fund and organisation and support for international workshops, we have been able to welcome early career professionals and researchers as well as nationals from crisis-affected countries to our events, develop new skills, and present their work to an international audience. In addition, collaboration with ISAP and at the EAC and EAA level has born fruits in joint publications, research activities and demonstrates that our group has strong footing in the European archaeological landscape.

Another notable success has been the continued work of AARG Working Groups and interest in AARG Fund. These initiatives have demonstrated what can be achieved when members come together around shared interests and common goals. The Ukraine Working Group stands as a remarkable example of voluntary collaborative research that has generated significant outputs and strengthened connections across our community. AARG Fund continues to support our members' research and other professional activities.

The last three years have also encouraged us to think carefully about the future. Artificial intelligence has become a recurring topic in many discussions, publications, and conference presentations. While the technology presents exciting opportunities, it also reminds us that tools alone do not create understanding. The future of aerial archaeology will continue to depend on training, critical thinking, collaboration, and the ability to place technological innovation within meaningful archaeological and heritage questions. AARG is uniquely positioned to help shape those conversations.

No Chair achieves anything alone. I would therefore like to thank our Trustees, Committee members, conference organisers, working group coordinators, *AARGnews* editors, student volunteers, donors and the many members who contribute their time and expertise to make AARG successful. The organisation benefits enormously from your dedication and generosity.

As I step down from this role, I do so with confidence that AARG is in a strong position. Together with the Committee, Trustees and membership we strengthened the organisational governance including major revision of AARG Constitution, establishing strong work relationship between the Committee and Trustees, developing new functions and welcoming new members to both governance boards. The group is even larger, more connected, more internationally diverse, and better prepared for future threats and opportunities.

I look forward to remaining actively involved in AARG and supporting the new Committee as the organisation enters its next chapter.

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Incoming Chair's Piece

Lenka Starková [1]

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I am delighted to introduce myself as the newly elected Chair of AARG, although, of course, I have known many of you for many years. For me, AARG is something like a very important professional family. In many ways, I grew up professionally with AARG.

I attended my first AARG conference in Siena in 2009, while I was still a student, and I remember very well how much this meeting moved me forward and inspired me. Since then, whenever possible, I have tried to stay actively involved and attend AARG conferences.

Through AARG, I met people with whom I later spent research visits and internships during my PhD. They gave me not only the knowledge and information I needed, but also confidence, empathy and friendship. Some of these meetings led to collaborations, others to long-lasting friendships, and many of these people have remained an important part of my professional and personal life. This is why, for me, AARG has never been only about conferences, presentations or research, but above all about people and the relationships that grow from them.

My work is mainly in remote sensing, particularly the processing and interpretation of satellite data and their use in archaeology, with a focus on the Middle East. Since 2013, I have regularly participated in expeditions in Iraqi Kurdistan and Iraq. Again, the network of colleagues I first developed through AARG was enormously helpful in establishing this part of my professional career.

I currently work as an Assistant Professor at the Department of Archaeology at the University of West Bohemia in Pilsen and as an external lecturer at Palacký University Olomouc. In 2024, I founded the Centre for Digital Archaeology under the auspices of the Department of Archaeology in Pilsen. Its core consists mainly of our PhD and MA students, and I try as hard as I can to help them gain the knowledge, experience and contacts they need, but also a real chance of finding a stable position in academia in the future.

As I take on the role of AARG Chair, I am very aware that I am taking over an organisation in a strong position. I would therefore like to express my sincere thanks to Łukasz Banaszek and the outgoing Committee. Łukasz has given AARG the structure and direction it needed and moved the group another important step forward. During his term, AARG has grown considerably while maintaining its openness and strong sense of community. I am very grateful to inherit such a strong foundation.

My thanks go also to Sara Popović and Susan Curran for the enormous amount of time, energy and commitment they have given to AARG, as well as to all the other outgoing Committee members and Trustees.

When speaking about previous leadership, I certainly cannot overlook Sara's own term as Chair. She led AARG through the exceptionally difficult period of the Covid pandemic, when travelling, meeting and simply being together suddenly became impossible. Despite this, Sara and her Committee managed not only to keep AARG functioning at a very high level, but, perhaps even more importantly, to keep our community together. I have enormous respect for what they achieved.

I do not see my role as Chair as one of reinventing activities that already work well. We have our Annual Meetings, Working Groups, AARG Fund, *AARGnews*, workshops and international collaborations, and I very much want to continue and develop this excellent work. I also look forward to working with the new Committee and to continuing the strong relationship between the Committee and our Trustees that was further developed during the previous term.

At the same time, I would like to contribute something from my own professional experience. Having spent many years in the university environment, working closely with MA and PhD students, I would particularly like to think about how AARG can connect even more closely with education and the next generation of researchers.

AARG already does a great deal for students and early-career researchers through bursaries, the AARG Fund, workshops and Annual Meetings. I would like to build on this and explore how we can give younger colleagues not only knowledge, but also opportunities to meet people, develop their own networks, gain confidence and gradually become part of our wider professional community.

This comes directly from my own experience. As a young PhD student, it was extremely important for me to meet people who had much more experience than I did but were nevertheless willing to listen, discuss, help and encourage me. I would like AARG to continue to provide exactly this kind of environment.

I am very much looking forward to my new role, to continuing the tradition of our Annual Meetings and to working with the Committee, Trustees and all AARG members. I hope that the next three years will bring not only continuity, but also new ideas emerging from discussions among all of us.

When I look back at my first AARG conference in Siena in 2009, I certainly did not imagine that one day I would be writing my first piece as AARG Chair. AARG has given me knowledge, experience, contacts and opportunities, but above all people who gave me confidence, support, empathy and friendship. If during the next three years I can give at least some of this back and help create a similar environment for the students and younger colleagues joining our community today, I will consider my time as Chair well spent.

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In the News

Compiled by the *AARGnews* Editorial Team [1]

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AARG Conference

Last month, the 43rd AARG annual conference was held in Pilsen, Czech Republic. Attended by 63 delegates, the meeting was skilfully organised by Lenka Starková of the Department of Archaeology at the University of West Bohemia, with support from the West Bohemian Museum in Plzeň, the University of West Bohemia, the Faculty of Arts, the Department of Archaeology, and the Centre for Digital Archaeology (CDA). The venue for the meeting was the West Bohemian Museum, located near the historic centre of Pilsen. Four student volunteers, Adéla Hrabíková, Hana Kolihová, Josef Ulbrik and Tomáš Kroupa, helped with the smooth running of the conference.

Feedback from conference delegates was overwhelmingly positive, with the conference receiving an average rating of 9.5 out of 10. The respondents particularly liked the quality and variety of presentations, excellent organisation, welcoming and supportive atmosphere, and opportunities for discussion and networking. The single-session format, generous breaks and sociable conference dinner were also highlighted. Ideas for future activities included more workshops and online sessions, particularly on satellite and aerial imagery, multispectral UAV data and newer analytical techniques, as well as themes linking aerial archaeology with heritage, environmental change and landscape management.

More details of the conference can be found on pages 11-19 of this issue. For those of you who could not attend, abstracts of the papers that were presented can be found in the *Conference Information Booklet* available from the AARG Website and many of the presentations will be available on the AARG YouTube Channel in the coming months. The AARG Secretary will keep you posted on their release date.

AGM, Committee and Trustees

The AARG Annual General Meeting was held during the conference and saw elections for several Trustee and Committee positions. Lenka Starková was elected as Chair and Łukasz Banaszek moved sideways to become Vice Chair. We were sad to say goodbye to those stepping down (Włodek Rączkowski, Sara Popović and Susan Curran) but delighted to welcome our newly elected representatives (Matthew Oakey, Sally Evans and Zoltán Czajlik) and look forward to hearing



Poster designed by Andrea Devlahović for the AARG 2026 conference based on a photograph by Martin Gojda that shows a part of the landscape around the Mount Říp, an historically important symbol of the Czech identity.

AARG Trustees and Committee Members

As of the 2026 AGM, our Trustees and Committee members are as follows:

Trustees:

Chris Cox
Toby Driver
Matthew Oakey
Zoltán Czajlik

AARG Committee:

Chair - Lenka Starková
Vice Chair - Łukasz Banaszek
Treasurer - Rebecca Bennett
Honorary Secretary - Sally Evans
***AARGnews* Lead Editor** - Martin Fowler
Webmaster - Andrea Devlahović
Social Media Officer - Kimberley Teale

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AARG Socials round-up

Kim Teale, our Social Media Officer, writes:

In case you missed them, here's a review of AARG's socials for the past six months…

With the impending September 2026 AARG Meeting in Plzeň (Pilsen), Czechia, our socials were awash with calls for papers and speakers, and reminders to book a place to join us at the conference!

We broadcast the publication of the next fantastic edition of *AARGnews* 72, covering memories of Johanna Dreßler and John Haigh, reflections inspired by the 2025 TRAIL Workshop, the VISUALS web app, and modelling climate change risk in Donegal Bay, Ireland.

An *AARGnews Spotlight* focussed on the VISUALS web application (Visualising the Interpretation of a Satellite-based Ukraine Archaeological Landscape Survey) by a member of the AARG Ukraine Working Group.



Our colleagues in the CIfA Landscape Special Interest Group co-edited a book on archaeology and climate change, which got a superb reaction from our followers on *Facebook*.

We posted a reminder about our 'Beginners Reading List' on our website for those who need resources to help kick start their research!

With a hot summer and drought conditions under our belt, our colleagues at the Royal Commission on the Ancient and Historical Monuments of Wales had their work cut out capturing crop marks springing up all over Wales! We shared some of their incredible findings.

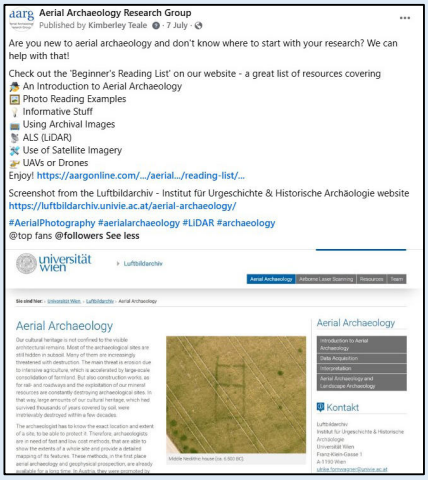
In September, we live 'tweeted' our way through the AARG 2026 Conference in Plzeň over on *BlueSky*! With 33 posts covering every session, we tried to keep members who were unable to attend the conference as involved as we could as the action happened.

And finally, we celebrated the election of our new Chair Lenka Starková! Lenka will guide AARG and our global community of experts over the next three years and we are delighted to have her on board.

Thanks to all our social followers for your likes and shares – we appreciate you. Until next time!







more from them over the next year. Huge thanks are due to Łukasz, Włodek, Sara, and Susan for their tremendous work over the past years.

Early Career Award

Congratulations to Filip Waldoch (Independent researcher, Poland), who was awarded the AARG Early Career Award for his paper along with Zuzanna Wygnańska and Hany Kahwagi-Janho on *Megalithic landscapes of Akkar (Lebanon) from the perspective of historic aerial photographs* and their poster *Reflections on the UAV survey in the Akkhar hinterland (Lebanon)*.

The award includes free registration for the next conference, tickets for the conference dinner and field trip, and a grant of up to €300 to support attendance.

AARG Fund

The Autumn call for applications to the AARG Fund is due to open soon. Details of how to apply for support for projects can be found on the AARG website.



Filip Waldoch receiving his AARG Early Career Award from Łukasz Banaszek at the AARG conference. Photo: Hana Kolihová.

The hot, dry summer of 2026

The UK's hot, dry summer of 2026 created exceptional conditions for aerial archaeology. It was the warmest summer in records dating back to 1884: temperatures peaked at 38.2°C, 54 weather stations broke their all-time daily maximum records, and parts of southern England went for up to 62 consecutive days without measurable rain. Buried walls, ditches, roads and former gardens became visible as cropmarks and parchmarks, leading to the discoveries reported below. The UK was not alone: repeated heatwaves also affected much of Europe, with western Europe recording its hottest June on record. (Source: Met Office).

Chatsworth House parchmarks Parchmarks were revealed of the Great Parterre beneath the South Lawn at the stately home of Chatsworth House, Derbyshire, England. Created around 1699 for the 1st Duke of Devonshire, the formal garden was replaced in about 1730, but its ornate beds and paths have reappeared because the grass above them has shallower roots and dries more quickly. (Source: Chatsworth News Blog).

Elsewhere in England Parchmarks were also revealed at several historic sites in southern England. At Blenheim Palace, the footprint of an extensive formal garden built in 1705 and dismantled in 1760 reappeared across the lawn. At Greys Court, Oxfordshire, marks traced 16th-century buildings associated with a medieval courtyard. Parchmarks at Portchester Castle, Hampshire, revealed a Tudor storehouse dating to about 1489–1540, and at Mottisfont, Hampshire, buried foundations related to medieval monastic buildings and later Tudor alterations were revealed. (Source: BBC News).

Wales: A season of revelations This summer's heatwave also produced exceptionally clear cropmarks and parchmarks across Wales, enabling RCAHMW aerial archaeologists to record both known sites and new discoveries despite turbulent weather, low cloud and smoke from wildfires. Highlights included fresh details of the Roman forts and surrounding settlements at Caerhun (*Canovium*) and Y Gaer (*Cicucium*), as well as a previously unknown Iron Age farmstead near Haverfordwest. The fleeting evidence provides valuable new information about Roman infrastructure and the density and sophistication of pre-Roman settlement in Wales. (Source: The Past – Insights from Above).

And probably further afield By late July 2026, the European Drought Observatory reported drought across half of the EU and UK, with 9% of the area at alert level, indicating severely depleted soil moisture and visible stress to vegetation. Similar conditions in 2018 and 2022 revealed many archaeological sites across Europe, so the summer of 2026 is also likely to have produced cropmark discoveries in several countries, although individual reports had yet to emerge at the time of writing. (Source: EU Joint Research Centre).



Parchmarks of the Great Parterre beneath the South Lawn at Chatsworth House, Derbyshire, England. Photo: Chatsworth House Trust.



Parchmarks of buried foundations of medieval monastic buildings and later Tudor alterations at Mottisfont, Hampshire, England. Photo: National Trust.



Severe parchmarks at Caerhun Roman fort, Conwy, north Wales, recorded on 17th July 2026. The parchmarks have even revealed internal room divisions in the barrack blocks. (© Crown Copyright RCAHMW, AP_2026_1446_01).

Drowned Villages of the Scheldt

Jaan Verliefden has drawn our attention to the *Drowned Villages of the Scheldt* project (https://drownedvillages.ugent.be/en), an interdisciplinary collaboration between Ghent University and the Universities of Vienna and Kiel, which investigates the exceptionally well-preserved but increasingly threatened drowned medieval landscapes of the Eastern Scheldt in the Netherlands. Drowned villages such as Tolsende and Nieuwlande, together with surrounding field systems, roads,

drainage features and traces of peat extraction, provide a remarkable record of medieval settlement, land reclamation and environmental change. With erosion and sea-level rise accelerating the loss of this intertidal archaeological heritage, the project is developing integrated approaches to its documentation and monitoring, combining historical aerial imagery and legacy remote-sensing data with UAV photogrammetry, lidar, UAV and terrestrial geophysical surveys, and multichannel sediment sonar.

In a recent open-access paper in the *Journal of Archaeological Prospection* (https://doi.org/10.1002/arp.70054), Jan Trachet, Sarah Bäumler, Stefan Krojer, Jeroen Verhegge,Wim De Clercq, Philippe De Smedt, Wouter H. Maes, Bente S. Majchczack, Immo Trinks, Dennis Wilken look at optimising strategies for non-invasive prospection of settlements in the intertidal zone. The case study from the centre of the drowned medieval village of Tolsende (Scheldt Estuary, The Netherlands) explores the potential and practical limitations of these methods in the challenging intertidal environment. UAV-based magnetometry has proved particularly useful for mapping buried settlement features and village topography, while UAV photogrammetry and lidar allow exposed remains and rapidly changing surface conditions to be recorded during low tide. Together with diachronic analysis of historical aerial photography, these approaches offer new ways not only to reconstruct drowned medieval landscapes, but also to monitor and manage coastal archaeological heritage that is rapidly disappearing.

Over 20,000 precolonial earthworks in the Southwest Amazonia

Lidar mapping has uncovered more than 20,000 ancient earthworks hidden beneath the forest in south-western Amazonia and show that this cultural area alone contains as many earthworks as previously estimated for the whole of Amazonia. The findings suggest that between 1.25 and 3 million people may have lived in the region around 100–300 CE. They also show that these communities changed the landscape in ways that may still affect the soil, forests and wildlife today. (Source: *Nature*).

Google Earth Pro desktop downloads to end

Google has stopped offering new downloads of Google Earth Pro for desktop from 25th June 2027, directing users towards Google Earth on the web and mobile. Existing installations will continue to work, so this is not an immediate shutdown, but the change will concern aerial archaeologists who rely on the desktop application for historical imagery, KML/KMZ data and established recording workflows. (Source: Google Earth versions).

A new way to train deep learning models

Archaeologists have tested a new way of teaching computers to find rare sites in lidar maps when too few real examples exist for conventional training. They created artificial versions of possible historic tar kilns, placed them in digital terrain from Louisiana's Kisatchie National Forest, and used them to train deep-learning models. The models found most of the target features but also produced many false matches, while field visits showed that the features were probably not tar kilns at all. Even so, the study shows that simulated examples can help archaeologists search large landscapes and guide follow-up fieldwork when real training data are scarce. (Source: *Advances in Archaeological Prtactice*).

Forthcoming Conferences and Meetings

2026

Theoretical Archaeology Group 2026, 14th-16th December 2026, Exeter, United Kingdom.
Conference website: https://tag2026.square.site/

2027

28th European Archaeological Council Annual Meeting, 18th-20th March 2027, Vilnius, Lithuania.
Conference website: https://www.europae-archaeologiae-consilium.org/annual-meeting-2027

Chartered Institute for Archaeologists Conference 2027, 27th-28th April 2027, Liverpool, United Kingdom.
Conference website: https://www.archaeologists.net/events-training/events/conference/2027

CAA 2027, 17th-20th May 2027, Santiago, Chile.
Conference website: https://2027.caaconference.org/

33rd EAA Annual Meeting 2027, 25th-28th August 2027, Leiden, Netherlands.
Conference website: https://www.e-a-a.org/eaa2027

AARG Annual Meeting 2027, September 2027, Kraków, Poland. Further details will be available on the AARG website in due course.

Google withdraws new Earth AI tool

Google paused the rollout of its Nano Banana 2 image-generation tool in Google Earth less than 48 hours after launch, following concerns that convincing fake scenes created over trusted satellite, aerial and 3D imagery could be downloaded and used to spread misinformation. BBC Verify demonstrated the risk by generating fabricated views of major landmarks and conflict zones, while Google acknowledged policy-violating examples and said stronger safeguards were needed—a development of particular relevance to the aerial archaeology community who rely on the perceived authority and evidential value of remotely sensed imagery. (Source: BBC Verify).

Blackbird camera details

For enthusiasts of historic aerial camera equipment, Rog Palmer has drawn our attention to a *YouTube* video produced by the *San Diego Air & Space Museum*. The video describes the camera used aboard the SR-71 *Blackbird* reconnaissance aircraft during the Cold War, the fastest crewed, air-breathing aircraft ever built, reaching an official record speed of over Mach 3.3 (roughly 3,500 km/h).

While readers will be familiar with the archaeological use of declassified satellite reconnaissance imagery from the U.S. CORONA, GAMBIT and HEXAGON programmes, photographs taken by high-altitude U-2 aircraft also have archaeological potential, as reported by Emily Hammer and Jason Ur suggesting a similar utility for the SR-71 photographs. Some photographs taken by the SR-71 are held in the U-2 collection in Record Group 263 at NARA, but their archaeological potential does not yet appear to have been investigated.

AARG 2026 Conference Report

Eileen Kerhouant [1] and **Carmen Miu Bem** [1]

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This year, from 9th to 12th September, the 43rd AARG conference was held in Plzeň, Czechia. It was a return to the city that previously hosted an AARG meeting ten years ago. The two-day programme featured 28 presentations, alongside a poster session showcasing 12 posters. Approximately 60 members and non-members registered for the conference and its social events, bringing speakers and participants together from around the world. The presentations covered a wide range of work in aerial archaeology and remote sensing, while a field trip and a guided tour offered opportunities to explore the city and its surrounding landscapes.

Welcome to Plzeň

The meeting was organised by Lenka Starková and Łukasz Banaszek with help from Martin Gojda and a team of volunteers, while local sponsors helped reduce hosting expenses. The University of West Bohemia and the West Bohemian Museum, respectively, provided the locales for the welcome reception and the conference itself. Plzeň is a historic city in West Bohemia, founded as a royal town in 1295, located southwest of Prague. It is known internationally as the birthplace of Pilsner beer and its protected centre includes landmarks such as St Bartholomew's Cathedral and the Great Synagogue.

The conference opened on Wednesday evening, 9th September, with a welcome reception at the University of West Bohemia's Faculty of Arts. It was a relaxed start to the meeting and a great chance to catch up with colleagues from across the international AARG community.

The two main conference days took place at the West Bohemian Museum, one of the largest research museums in Czechia, whose central location provided a fitting venue for a programme focused on archaeological landscapes and the ways in which we study them.

Day 1: Czech Perspectives, New Tools and Mediterranean Landscapes

The conference was opened by Łukasz Banaszek, the AARG Chair, and was followed by opening speeches by Prof. Pavel Vařeka (Head of the Department of Archaeology, University of West Bohemia), Prof. Monika Baumannová (Vice-Dean for Research and Science) and Dr. František Frýda (Emeritus Director of the Museum of West Bohemia in Pilsen).

The technical programme then began with a session on Czech perspectives on archaeological landscapes. Martin Gojda, Lenka Starková and Ondřej Baier traced the development of archaeological remote sensing in Bohemia, from the early years of aerial survey to today's digital approaches. Michaela Prišťáková and Martin Košťá then gave their presentation on extensive UAV lidar surveys in Bulgaria, highlighting the growing role of this technology in documenting large and varied archaeological landscapes.

The session on technical developments brought together papers on satellite imagery, lidar and the study of movement.



Welcome Reception - Faculty of Arts, University of West Bohemia. Photo: Hana Kolihová.



Conference venue. Photo: West Bohemian Museum in Pilsen.

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Topics included Filip Hájek's discussion of the detection of submerged ceramic scatters in shallow coastal waters in Cyprus, while Barbora Weissová and Katrin Dorfner discussed the value of low- and high-resolution lidar point clouds.Piotr Wronieck gave a humorous, yet thought-provoking presentation of his algorithm for rapid filtering of lidar data and José Ruiz Flores presented his team's research on movement, looking at the best techniques to detect ancient pathways and, to close this session, Rob Shaw discussed the use of UAV lidar to investigate Irish archaeological landscapes. Together, these papers showed how advances in data acquisition and processing are expanding the range of questions researchers can address.

In the second part of the day, attention turned towards Mediterranean landscapes. Talks explored Iron Age pathways in Iberia (presented by AARG's 2025 ECR award winner, Maria Lucrècia Centelles-Fullana) and Antonio Jesús Ortiz Villarejo's initial research results for the Malaventura Fortress in Spain (funded by an AARG 2025 grant). Roman land division and agricultural practices in Istria (Croatia) were highlighted by the individual presentations of Elise Fovet, Sara Popovic and Michael Doneus, focusing on the current research of these different international research teams. The session demonstrated how aerial laser scanning and other remote-sensing sources can reveal patterns that are difficult to recognise from the ground or from a single dataset alone.

Poster Session and the AARG Annual General Meeting

To complete this first day, a poster session provided an informal opportunity to discuss ongoing work while the AARG Annual General Meeting was hosted, both in-person and online, for all registered AARG members.

The posters covered a range of subjects including the development of historic agricultural landscapes; the transfer of automated mound-detection methods between regions; lidar-based mapping of charcoal production; hobby drone surveys; threatened archaeological sites; the integration of geophysical, lidar and multispectral data; and contract archaeology on Romanian highway projects. Together, these posters provided a useful opportunity to compare methods and exchange ideas.



Conference session in the West Bohemian Museum. Photo: Hana Kolihová.

At the AGM, board members discussed the work of the group and its activities. Elections were also held for several Trustee and Committee positions. Włodek Rączkowski, Sara Popović and Susan Curran stepped down, with AARG thanking them for their service over a number of years. The AARG Trustees are now Chris Cox, Toby Driver, Matthew Oakey and Zoltán Czajlik. The updated AARG Committee is composed of the following: Lenka Starková (Chair), Łukasz Banaszek (Vice-Chair), Rebecca Bennett (Treasurer), Sally Evans (Honorary Secretary), Martin Fowler (*AARGnews* Lead Editor), Andrea Devlahović (Webmaster) and Kimberley Teale (Social Media Officer).

Day 2: Landscapes Across Continents and Through Time

The second day opened with papers on archaeological landscapes beyond Europe. Bob Bewley introduced a new project in Jordan combining satellite imagery, aerial reconnaissance and field survey. Oliver Hatswell examined changing water availability and ancient occupation in Australia while Filip Wałdoch discussed megalithic landscapes in



Group photograph of the participants at 2026 AARG Conference. Photo: Jean-Paul Kerhouant.

Lebanon through historic aerial photographs. Finally, research on the material and cultural traces of nuclear disasters in the southern Urals was presented by Grzegorz Kiarszys. The session ranged from long-term environmental change to the recent past, showing how remote sensing can contribute to research across very different landscapes and periods.

The three European sessions were organised around water and fire, cemeteries, conflict and woodland, and the complexity of archaeological landscapes. Dave Cowley talked about the reconstruction of Scottish palaeolandscapes while Jaan Verliefden presented his team's research on medieval landscapes in a changing delta. Edward Pollard discussed climate-related risks to archaeological sites in Ireland and Sally Evans presented Historic England's aerial archaeological response to a moorland fire. In the second session, Máté Szabó examined cemeteries identified from space, Marcin Czarnowicz talked about landscapes shaped by the First World War and Jakub Sobko presented the challenges of 'translating' his research on conflict landscapes into actual heritage protection on a national level. Finally Daniel Hunt presented the results of Historic England's Epping Forest Aerial Investigation and Mapping Project. The third session brought together Mirosław Furmanek's discussion of the importance of aerial archaeology in understanding the cultural landscape of Southern Poland with Joel Goodchild's presentation of AOC Archaeology's experience with drone-based multispectral survey. It also focused on Hrvoje Kalafatić's talk about Neolithic settlement research in eastern Croatia, utilising both aerial archaeology and magnetometry. Susan Curran's introduction of a new project - the identification of Ireland's 'Tara' landscapes using aerial, geophysical and toponymic evidence - was an uplifting end to an extremely full programme of research presentations. Across the two days, the talks repeatedly showed the value of comparing different sources and methods, and of interpreting archaeological features within their wider landscapes.

Awards

The closing part of the meeting included recognition of contributions to AARG. Filip Wałdoch received the *Early Career Researcher Award*, while Włodek Rączkowski, Bob Bewley and Martin Gojda received awards for their long-standing contributions to the group. The award presentation and the recipients' reactions had the audience laughing and applauding. The three long-serving members were portrayed as the Three Wise Men: having shared their aerial knowledge over the years, they were now receiving a reward of their own. On the T-shirt design, Włodek looked just like Chuck Norris - a true guardian of aerial photography! Dave Cowley, the youngest of the three award recipients, received a pair of socks for now, with a T-shirt to look forward to once he has accumulated a few more years of AARG experience.



Dave Cowley being presented with his award of ... a pair of socks. Photo: Carmen Miu Bem.



The Three Wise Men examining their gifts. Photo: Hana Kolihová.

Conference Dinner

On Friday evening, participants gathered for the conference dinner at the Pilsner Urquell Brewery. It was an enjoyable end to the formal programme and another opportunity for conversation across the international group.

Field Trip and Final Thoughts

On Saturday, 12th September, participants could choose between a full-day field trip and a guided tour of Plzeň. The field-trip route included visits to Horní Beřkovice, Kostomlaty pod Řípem, Budyně nad Ohří and Terezín, with a stop at Václav Havel Airport in Prague on the return journey. The guided city tour offered an alternative opportunity to discover Plzeň and its history.

Kostomlaty pod Řípem

Guided by Martin Gojda, we explored the woodland near Kostomlaty pod Řípem, where several archaeologically documented burial mounds can be found. He explained the mounds and the research carried out in the area. We then visited the Church of Saints Peter and Paul, a Romanesque building dating to the 13th century. The church was altered in subsequent centuries, and its tower was rebuilt in the Baroque style in the 18th century.

Budyně nad Ohří

The group's next stop was Budyně nad Ohří, best known for its medieval water castle, built in the 13th century and once surrounded by a moat.



Kostomlaty pod Řípem forest. Photo: Tomáš Náhlík.



Church of Saints Peter and Paul. Photo: Carmen Miu Bem.

During our visit, our guide shared stories about the alchemists who worked at the castle in the 16th century and their search for the philosopher's stone.

We also heard the tale of the crocodile brought back from Egypt by a member of the Zajíc of Hazmburk family, which was said to have been released into the castle moat to guard it. Known as the "Dragon of Budyně", the crocodile is now displayed in the castle museum. A few visitors couldn't resist trying out the seats intended for the emperor, enjoying a brief moment in his place.

Terezín Fortress

As our guide explained, Terezín Fortress was built between 1780 and 1790 during the reign of Emperor Joseph II, to defend the route between Prague and Dresden. Designed as a major bastion fortress, its defences combined earth ramparts, moats and a system for flooding the surrounding land. Beneath the fortifications lies an extensive network of underground galleries, part of which we explored. Our guide gave us a detailed account of the galleries, including their layout and their planned defensive role: they could help the defenders monitor enemy activity and counter attempts to undermine the fortifications. We also heard about the site's darker history. During the Nazi occupation, the Main Fortress became a Jewish ghetto, while the Small Fortress was used as a Gestapo prison. In an earlier period, the Small Fortress held political prisoners, including Alexandros Ypsilantis, the Greek revolutionary leader and a prominent figure in the struggle for Greek independence.

One of the most memorable parts of our visit to Terezín Fortress was following a route of underground galleries lit by candles in special holders. As we made our way through the dark passages, it felt as though we were following in the footsteps of the fortress's ghosts - fortunately, they seemed happy to let us pass.

Final thoughts

The conference was very well organised! The field trips, the interesting presentations, the discovery of local pubs and the friendly, cohesive atmosphere all contributed to an enjoyable meeting. The organising committee kept participants well informed throughout, which was greatly appreciated. It was especially valuable to meet colleagues, exchange ideas and see the range of approaches currently being used in aerial archaeology and landscape research.

For future meetings, we would welcome more workshops, including online events, and presentations that compare aerial photographs, lidar and geophysical surveys more directly. The Plzeň conference offered an excellent setting for these conversations and we left with many ideas to take back to our own work and research projects.



Budyně nad Ohří moated castle. Photo: Tomáš Náhlík.



The Alchemist's Laboratory at Budyně nad Ohří castle. Photo: Carmen Miu Bem.

Postcards from the 43rd AARG Conference

10–12 September 2026

aarg Aerial Archaeology Research Group

PILSEN CZECH REPUBLIC



Photo: Eileen Kerhouant



Photo: Eileen Kerhouant



Photo: Eileen Kerhouant



Photo: Eileen Kerhouant



Photo: Eileen Kerhouant



Photo: Carmen Miu



Photo: Klára Hanáková



Photo: Klára Hanáková

Welcome reception

43rd AARG Conference

Faculty of Arts

University of West Bohemia

aarg Aerial Archaeology Research Group



Photo: Klára Hanáková



Photo: Klára Hanáková

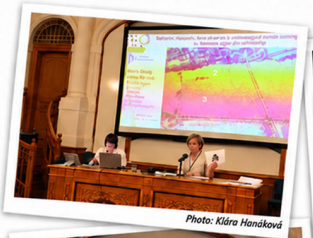


Photo: Klára Hanáková

Session themes

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- Czech perspectives on archaeological landscapes
- Technical developments
- Aerial approach to Mediterranean landscapes
- Archaeological landscapes beyond Europe
- Archaeological landscapes beyond Europe Part 1: Water and fire
- Aerial archaeology across Europe Part 2: Cemetery, war and forest
- Aerial archaeology across Europe Part 3: Complexity and consistency



Photo: Klára Hanáková







Photo: Klára Hanáková















Conference dinner

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The Pilsner Urquell Brewery



Photo: Magda Iacob





Photo: Eileen Kerkmann





Kostomlaty pod Řípem forest

Photo: Tomáš Náhlík



Kostomlaty pod Řípem forest

Full Day Field Trip

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- Kostomlaty pod Řípem forest
- Church of Saints Peter and Paul
- Budyně nad Ohří medieval water castle
- Terezín Fortress



Church of Saints Peter and Paul



Photo: Tomáš Náhlík



Budyně nad Ohří medieval water castle







Terezín Fortress





Photo: Tomáš Kroupa



Several pretty ghosts at Terezín Fortress.



The Guardian of the Buffet
No sandwich escapes his watch.

Photo: Klára Hanáková

Photo: Klára Hanáková

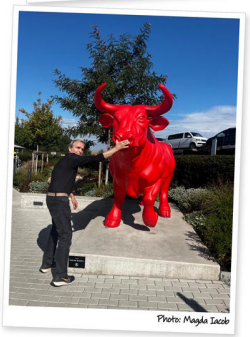
AARG Conference, Pilsen

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More than science: sharing ideas,
building friendships, and laughing together.


Photo: Klára Hanáková




Photo: Magda Jacob

***All photos are by Carmen Miu Bem unless otherwise credited**

Reflections on the AARG Meeting at Pilsen 2026

Adéla Hrabíková [1], **Hana Kolihová** [2], **Josef Ulbrik** [3] and **Tomáš Kroupa** [4]

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The four student volunteers who helped run AARG 2026 in Pilsen provide some of their thoughts and views of the conference and presentations.

Adéla Hrabíková – Hana Kolihová – Josef Ulbrik

Our participation in the AARG 2026 conference was our first experience of an international academic meeting of this scale. We would therefore like to thank the University of West Bohemia in Pilsen for giving us the opportunity to take part in the event and to contribute to its organisation.

As students about to begin a Master's programme focusing on spatial and landscape archaeology, we found the topics addressed at the conference highly valuable. The individual presentations and discussions allowed us to broaden our knowledge of current methods and approaches in archaeological research. At the same time, the papers presented at the conference gave us a deeper insight into subjects that we will explore further during our studies. It was also particularly valuable to observe the research approaches of scholars from abroad and to learn about the specific characteristics of archaeological research in different countries.

We therefore see the conference as a valuable experience that can inspire us in our further studies and future professional development. We are grateful for the opportunity to have been part of the event and hope that we will be able to participate again in the future.

Not Only the Presentations, but the Discussions That Followed – Adéla

I was particularly interested in the discussions following the individual presentations, which combined a friendly and open atmosphere with academic debate. While the presentations themselves introduced new findings and presented the results of specific research projects, it was the discussions that followed that helped me better understand how important the exchange of ideas and perspectives is as part of academic work.



Hana, Adéla and Josef. Photo: Hana Kolihová.

Methodological Inspiration – Josef

As someone interested in archaeological prospection, I was particularly drawn to methodological topics concerning the use of airborne laser scanning (ALS). Although it is already a well-established method in Czech archaeology, the conference presentations helped deepen my understanding of both its potential and its limitations, knowledge that I will certainly be able to apply in my future practice. A completely new and particularly inspiring topic for me was the use of machine-learning methods for the automated detection of archaeological features in ALS data.

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New Experiences and Knowledge – Hana

Participating in the conference gave me an opportunity to broaden my knowledge of landscape archaeology. What interested me most was the diversity of the presented papers and the insight they provided into research from different countries and historical periods. I found it particularly interesting to see the current possibilities and combinations of methods used in remote sensing. The knowledge I gained represents not only a new experience from an international conference, but also a valuable foundation that I can build upon throughout my studies.

So familiar, yet different… – Tomáš

Now that this year's AARG Meeting is done, one finally has some time to reflect on these hectic days. It was not my first meeting, but in many ways, it was so different. We were home. And we were the organizers. That's quite a different experience than the "regular" AARG conferences with which I became so acquainted. A lot of micromanagement and double-checking of stuff, dealing with occasional holdback or two. But we were a good team, and I firmly believe that we managed to create a pleasant environment for every participant of AARG Meeting 2026 in Pilsen.

It was different, yet so familiar. Seeing all the people after some time has one thinking – how is their research doing? That's something I came to realize this year. After 4 years of attending the meetings, for the 5th time I couldn't help but wonder: "What are these people up to?" In two days full of presentations, I got my answers.

It seems, based on Susan Curran's research, that the Hill of Tara, which I came to know through her papers, is not a single occurring phenomenon, but there is a whole *Tarascape* in Ireland. This offers a vast space for further investigation of these massive archaeological areas through remote sensing. There are also really interesting discoveries regarding the Roman centuriation system in Istria, which is something which was heavily discussed during this meeting.

This year's Meeting was simply put different, but familiar; and it certainly was a pleasure. There were many excellent papers, both methodological and case studies, all of them inspiring. And now I finally know what everyone is up to!



Tomáš. Photo: Hana Kolihová.

Dinu Adamesteanu and Landscape Archaeology in the Mediterranean: Study Day at the Museo Nazionale Romano

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In June 2026, a study day was held in Rome to celebrate the achievements of Dinu Adamesteanu, one of the most important figures in postwar Italian archaeology. The conference focused on his role in the development of territorial archaeology, aerial photography, and the study of ancient landscapes. Overall, the day confirmed the enduring relevance of Dinu Adamesteanu's work and the continuing importance of aerial photography, territorial analysis, and interdisciplinary approaches in archaeology.

The conference dedicated to Dinu Adamesteanu was organized by the DiVa (Dipartimento Valorizzazione Patrimonio Culturale, or Department for the Valorisation of Cultural Heritage), the Museo Nazionale Romano (National Museum of Rome), and the Embassy of Romania in Italy, within the framework of the Italy–Romania Cultural Year and the European Archaeology Days. The event, held on June 12th at Palazzo Altemps (piazza di Sant'Apollinare, 46 – Rome, Italy), was conceived as a tribute to one of the most important figures in postwar Italian archaeology, while also offering an opportunity to reconsider the scientific and methodological relevance of his work in light of current archaeological research. The event was intended for the general public, so not only academics and scholars. In particular, the day focused on Adamesteanu's role in the development of territorial archaeology, aerial photography, and the study of ancient landscapes.

The opening institutional greetings were delivered by Federica Rinaldi, Director of the Museo Nazionale Romano, together with Alfonsina Russo, director of DiVa, and Gabriela Dancu, Ambassador of Romania to Italy, Malta, and San Marino. These interventions framed the initiative as both a scholarly and a cultural-diplomatic event, emphasizing the international significance of Adamesteanu's career. The introductory lecture by Francesco D'Andria, titled "Dinu Adamesteanu un pioniere dell'archeologia territoriale,", (Dinu Adamesteanu a pioneer of territorial archaeology) provided a clear conceptual framework for the rest of the day, presenting Adamesteanu as a pioneering scholar whose work transformed the way archaeological landscapes are investigated and interpreted.

The morning sessions concentrated on the historical and scientific context of Adamesteanu's contribution. Alfonsina Russo highlighted the international dimension of his research, while Marcello Guaitoli examined his role in the disciplinary renewal of Italian archaeology during the 1950s and 1970s. These talks showed that Adamesteanu was not only an archaeologist of exceptional technical ability, but also an intellectual and institutional actor who helped shape the modern identity of Italian archaeology. His work was presented as a bridge between field investigation, academic debate, and heritage policy.

A second thematic block was devoted to aerial photography and archaeological survey. Giuseppe Ceraudo presented an introduction of aerial photography in Italy as a fundamentally



Opening talk for the Study Day on Dinu Adamesteanu. [left to right] G. Dancu, Ambassador of Romania in Italy; A. Russo, director of DiVA; F. Rinaldi, director of Museo Nazionale Romano. Photo: Gianluca Cantoro.

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Poster for the 2026 - Romania-Italy Year of Culture. Photo: Gianluca Cantoro.

new way of understanding ancient landscapes, while Lisa Foa (and Carlo Birrozzi, not present) focused on Adamesteanu as the first director of the Italian National Aerial-Photo Archive (Aerofototeca Nazionale). This section was especially significant because it highlighted the visual and documentary dimension of archaeological research, showing how photographic evidence can become an interpretive tool rather than merely a recording device. It also made clear that Adamesteanu's methodological intuition remains highly relevant in the context of remote sensing and digital archaeology.

The conference included an unexpected (but very welcome) guided visit to the wonderful cultural heritage present in Palazzo Altemps.

In the afternoon, the program shifted to Adamesteanu's work in Magna Graecia and Sicily. Aldo Siciliano discussed his relationship with the Institute for the History and Archaeology of Magna Graecia, while Michel Gras reflected on his research in Sicily. These presentations underscored the breadth of Adamesteanu's geographical interests and the depth of his contribution to the study of settlement patterns, agricultural systems, and the relationship between city and territory in the ancient Mediterranean. The continuity between regional research and broader interpretive frameworks emerged as one of the most important themes of the day.

The final thematic section addressed methodology and innovation. Nicola Masini discussed the transition from aerial archaeology to multisensor remote sensing, emphasizing the lasting influence of Adamesteanu's approach in CNR research, while Stefano Campana reflected on methodological innovation in landscape archaeology. This part of the program was particularly effective in demonstrating how Adamesteanu's legacy continues to inspire contemporary analytical methods, especially those based on GIS, remote sensing, and integrated landscape study. The scientific coherence of the day lay precisely in this dialogue between historical memory and present-day methodology.

The closing segment introduced a more personal and commemorative tone. Raffaello De Ruggieri (current Mayor of Matera, where Dinu operated for many years) offered a remembrance of Adamesteanu and his personal professional relation with him, Mihaela Adamesteanu (grand-daughter of the Romanian archaeologist) presented "the man behind the archaeologist," and the final conversation on "Storia d'amore e d'archeologia" (A story of love and archaeology) with Marinella Fiume (author of the presented book) added a reflective and human dimension to the event. This concluding part broadened the perspective beyond scholarship alone and gave space to memory, biography, and cultural interpretation. As a result, the day succeeded in presenting Adamesteanu not only as a major scholar, but also as a public and human figure whose influence extended well beyond academic circles.

From an analytical point of view, the event was carefully structured and intellectually convincing. Its main strength was the way it connected the history of archaeological research with the tools and questions of contemporary landscape archaeology. The program was balanced, with a clear progression from institutional tribute to methodological reflection, to a more intimate picture. Overall, the study day confirmed the enduring relevance of Dinu Adamesteanu's work and the continuing importance of aerial photography, territorial analysis, and interdisciplinary approaches in archaeology.

The organizers stated that proceedings will be published at some point, and this is a very good thing. Looking forward to reading it (and to keeping you informed).

Echoes of 1212: LiDAR Analysis of the Malaventura Fortress in the Shadow of Las Navas de Tolosa

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This article explores the archaeological significance of the Malaventura fortification in Despeñaperros, Spain. Located in the immediate vicinity of the historic Battle of Las Navas de Tolosa (1212), high-resolution LiDAR data reveals a complex multi-phase site that likely played a strategic role in monitoring the crucial mountain passes used by the Christian and Almohad armies.

Introduction

The Malaventura fortification sits at a strategic altitude of 989.5 m above sea level on the southern slope of Malabrigo mountain. Its location is not just topographically significant but historically charged, as it overlooks the very territory where one of the most decisive battles of the Middle Ages took place. Since the designation of the Despeñaperros Natural Park in the 1970s, dense vegetation has hidden the extent of this site, but new LiDAR technology is finally revealing its connection to the military landscape of 1212.

Malaventura and the Battle of Las Navas de Tolosa

The Battle of Las Navas de Tolosa (July 12–19, 1212) stands as a monumental milestone in Iberian history, pitting the Almohad Caliphate against a coalition of Christian kingdoms reinforced by European crusaders. According to historical chronicles, the conflict involved rapid and complex military manoeuvres through the Sierra Morena mountain range.

Key events of the campaign—such as the Christian army's crossing of the range, the capture of the fortress of Castro Ferral, and the settlement of the troops at the "Mesa del Rey"—occurred in the immediate surroundings of Malaventura. The fortification is situated on a spur that connects Puerto del Rey with Puerto del Muladar, providing an unparalleled vantage point to visually control the exit from Sierra Morena toward La Mancha. Scholars suggest that while archaeological excavations are needed for definitive proof, the site represents a highly probable defensive structure for the surveillance of the northern slope during this critical period.

Visualizing the Frontier via LiDAR

To overcome the dense vegetation that has irremediably affected the site's conservation, the project utilized a DJI Matrice 350 RTK drone equipped with a Zenmuse L2 scanner. By capturing approximately 5,000 points/m² and applying manual filtering to remove the thick forest canopy, researchers were able to document the site's microtopography for the first time (Figure 1).

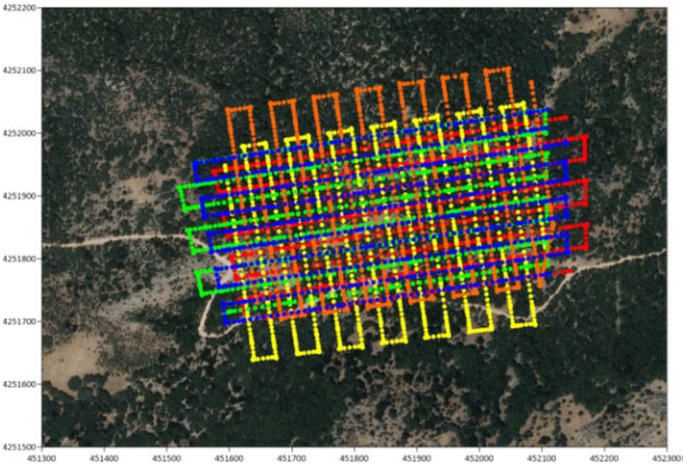


Figure 1. Recorded drone flight paths over the study area.

A Fortress of Two Worlds

The LiDAR analysis reveals a site defined by transformation, reflecting the shifting borders of the Reconquest:

1. **The Islamic Phase:** An early enclosure in the southern, highest zone of the spur, featuring a circular tower approximately 5 m in diameter. This early phase likely served as a watchpoint for Berber communities guarding the busy mountain passes as early as the 9th or 10th centuries (Figure 2)[2].
2. **The Christian Phase:** Following the Christian advance, the site was expanded into a rectangular "rocky castle". This

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[2] The chronology of the Islamic period is derived from the joint interpretation of the circular tower and the enclosure in which it is situated. If considered in isolation, the tower alone would suggest an 11th–12th century AD date; however, it is the courtyard that allows for a more precise, earlier dating.

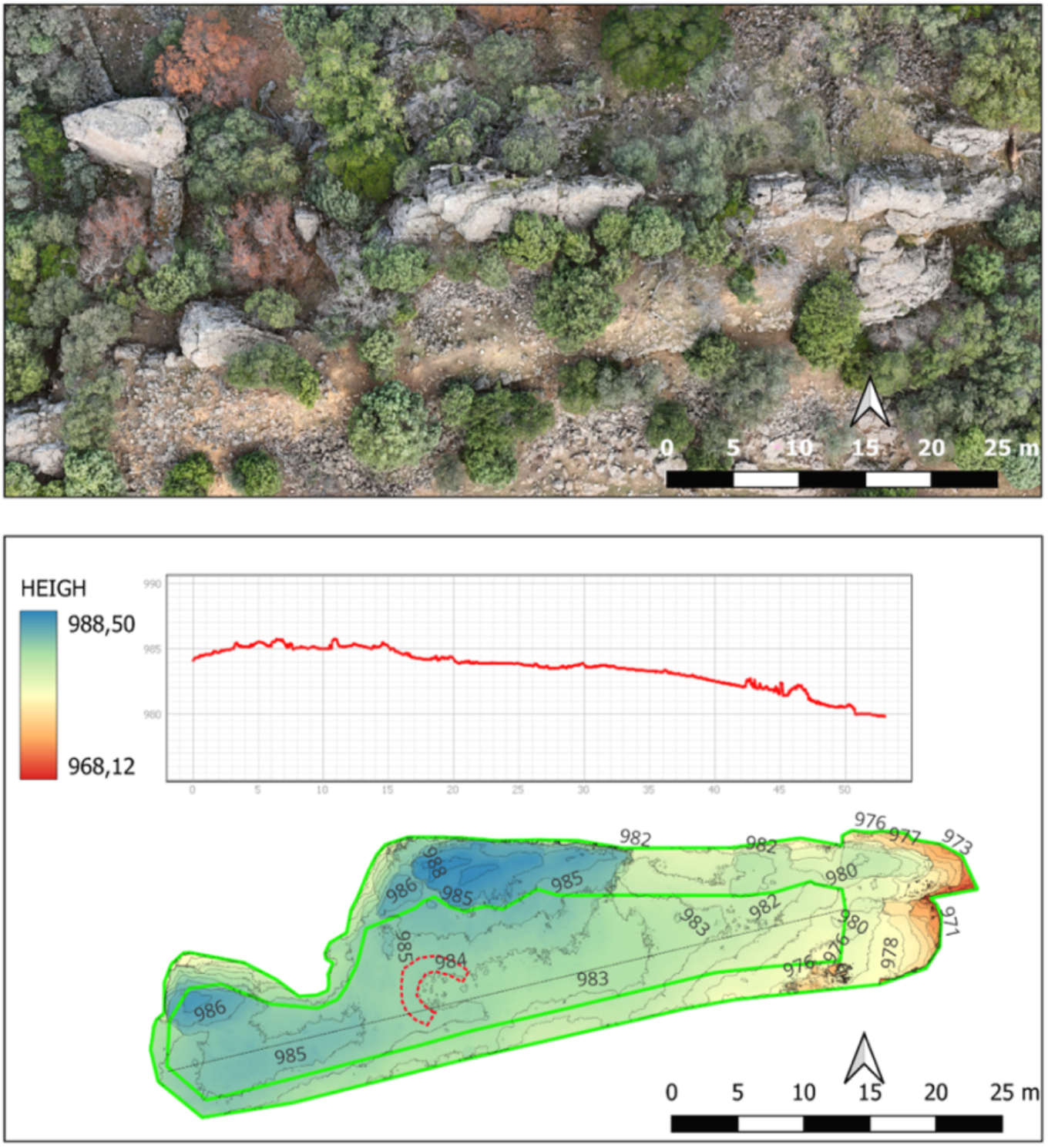


Figure 2. Detail of the structure of the first phase where the presence of the remains of a circular tower is highlighted and a study on the slope inside it is presented.

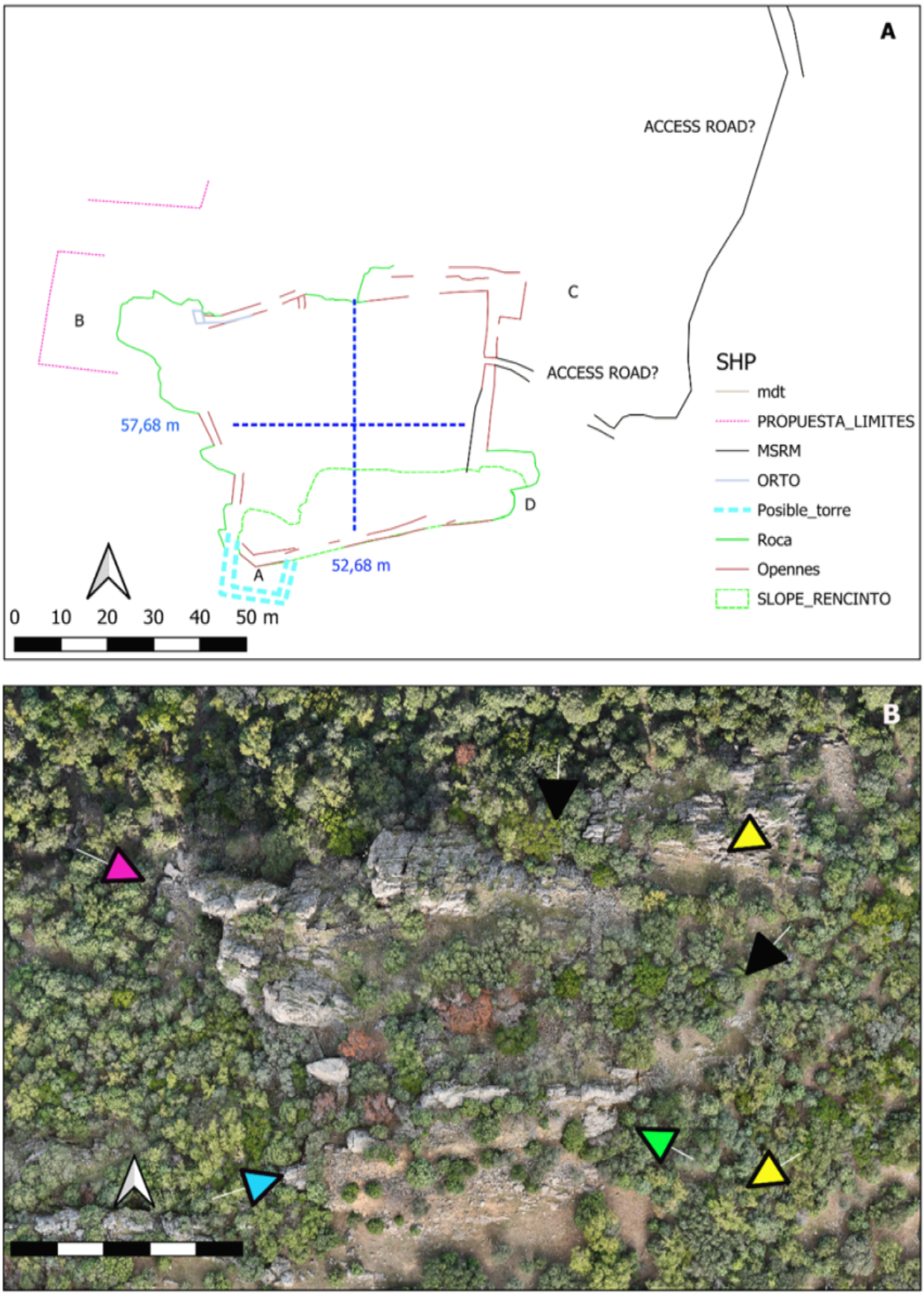


Figure 3. A. Interpretation of the evidence detected in the LiDAR data. B. Location of the evidence on the orthophoto. The color of the arrows corresponds to the visualization technique reflected in A. Source: Own elaboration.

phase features four quadrangular towers and a parade ground of roughly 3,038 m² (Figure 3). The layout and masonry techniques align with the activities of Military Orders, such as Santiago and Calatrava, who were tasked with consolidating authority in conquered territories after major victories like Las Navas de Tolosa.

The Quadrangular Towers of Phase 2

The Christian expansion is most clearly identified by the construction of four large quadrangular towers at the corners of the enclosure, which utilized the natural rocky outcrops for added stability and height:

Tower A (SW): Measuring 14.8 x 12.86 m with walls up to 2.30 m thick, it was built to reinforce the southwest angle, incorporating the earlier Islamic defences (Figure 4).

Tower B (NW): Dimensions of 17.25 x 24.79 m. It was identified through the precise cutting of the rocky outcrop visible in LiDAR visualizations (Figure 5).

Tower C (NE): Measuring 10 x 7.82 m, this tower is unique as it was created *ex novo*, without relying on pre-existing rock outcrops (Figure 6).

Tower D (SE): A polygonal structure that utilized masonry to finish its plan, also integrating parts of the earlier Islamic enclosure (Figure 7).

Defensive Innovation: The Elbow-Bend Gate

One of the most significant findings is the access gate located at the NE end, flanked by towers C and D. The entrance utilizes a 90º elbow-bend path—a defensive system likely added during the Christian reuse of the site (Figure 8). This "Mudéjar influence" was a specific defensive element in the Iberian Peninsula designed to hinder attackers by forcing them into a vulnerable turn before entering the main enclosure.

Walls

At the Malaventura fortification, the walls were strategically used to close the gaps between various rocky outcrops, effectively leveraging the natural topography for defensive purposes. These structures were constructed using medium-sized stones and feature thicknesses that typically range from 1.63 to 1.89 m, specifically reaching 1.9 m in the sections that connect the rock formations (Figure 8).

Conclusion

Malaventura is more than a ruin; it is a physical witness to the frontier dynamics of the 13th century. Its strategic positioning on the very paths described in medieval chronicles underscores its likely role as a surveillance post during the Almohad-Christian conflict. As we continue to analyse the LiDAR-derived digital terrain models, the fortification of Malaventura is emerging as a vital piece of the puzzle in the archaeology of the 1212 campaign.

Acknowledgement

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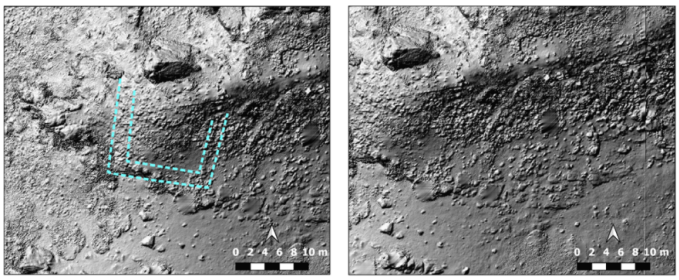


Figure 4. Tower A identified in Hillshade_A315_H35.

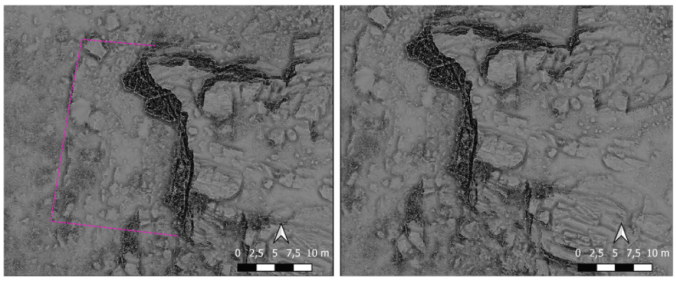


Figure 5. Tower B identified in Open-Pos_R10_D16.

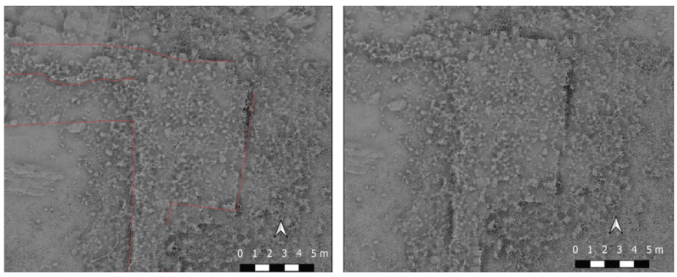


Fig. 6 Tower C identified in the Openness visualization.

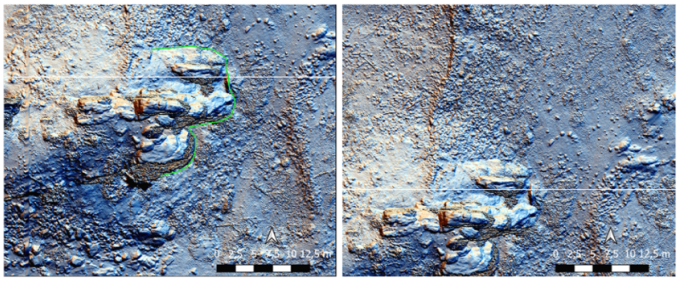


Figure 7 Tower D, identified in Multi-HS_D16_H35.

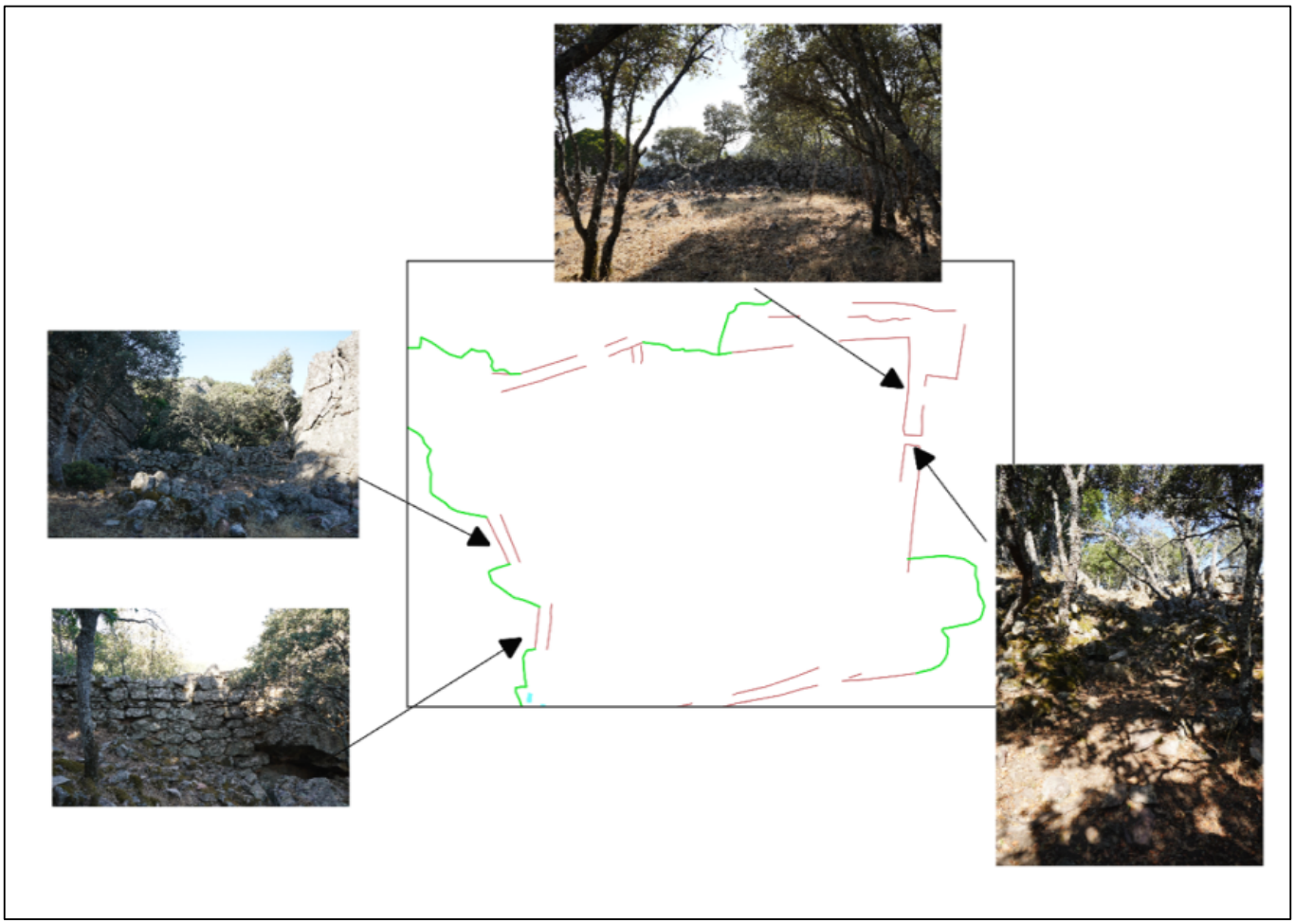


Figure 8. Remains of the wall and the entrance identified.

Bibliography

Cano, R. M. 2022. La poliorcética de los castillos medievales de la Región de Murcia. *Alejandría* 1, 91-107. https://www.um.es/cepoat/alejandria/wp-content/uploads/2022/11/marco.pdf.

Eslava Galán, J. 1999. *Castillos y Atalayas del Reino de Jaén. Jaén*: Ediciones Osuna.

Fernández Sánchez, J. 2020. Poliorcética Medieval: Puertas y sistemas de entrada en las fortificaciones de la provincia de Alicante. *Documentos de Arqueología y Patrimonio Histórico*, no. 5: 43–70.

López Cordero, J. A., F. Jiménez Rabasco, J. M. Cantarero Quesada, and J. González Cano. 2025. Arquitectura defensiva realizada en piedra seca en el Parque Natural de Despeñaperros. *Argentaria*, no. 29: 001–012. https://drive.google.com/file/d/1pqKLEAoXK214ISs7kfT9xyEKrh6vKJF1/view?pli=1

Ontalva, J. S. P. 2019. Cómo defender la frontera. Reflexiones sobre estrategias territoriales y poliorcética en el mundo hispano medieval. *Intus-Legere Historia* 13:1, 3-36. https://intushistoria.uai.cl/index.php/intushistoria/article/view/279.

Torres, I. M., J. C. C. Armenteros, J. P. B. Ruiz, M. Á. L. Chica, M. S. Civantos, V. S. Cuenca, M. N. Pérez, and M. R. Velasco. 2025. La batalla de las Navas de Tolosa: Arqueología de un hito historiográfico. (2025). Cuadernos de Prehistoria y Arqueología de la Universidad de Granada, 35(35). https://doi.org/10.30827/cpag.v35i0.33422

Velasco, M. R., and F. C. Guerra. 2017. Apuntes sobre los procesos constructivos de fortificación en el territorio de la Corona de castilla. In *Genius Loci. Lugares e significados/places and meanings*. Volume 2, 15-50. CITCEM – Centro de Investigação Transdisciplinar Cultura, Espaço e Memória. https://www.researchgate.net/publication/342881585_Apuntes_sobre_los_procesos_constructivos_de_fortificacion_en_el_territorio_de_la_Corona_de_Castilla

For non-Spanish readers, this website may assist in gaining an understanding of the battle: https://www.britannica.com/event/Reconquista. However, the primary corpus of data remains in Spanish because, despite its significant historical importance, the battle has been studied predominantly by Spanish scholars.

Exposing a Suboptimal Exposure Mode in Observer-Directed Aerial Photography

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In observer-directed archaeological aerial photography, the shutter-priority exposure mode may seem the obvious choice because it allows the photographer to guarantee a short exposure time. This paper argues that aperture-priority mode with Auto ISO and a maximum exposure-time limit offers a more controlled compromise: it keeps the aperture near the optical optimum, prevents the exposure time from becoming too long within the selected ISO range, and leaves ISO as the flexible exposure variable. Various scenario-based calculations show how the maximum acceptable exposure time varies with ground speed, flying height, focal length, photosite pitch, and the acceptable level of motion blur.

The exposure duo and the practical exposure triad

Among many parameters, photographic image formation is primarily governed by aperture, exposure time, and ISO. The close relationship among aperture, exposure time, and ISO is commonly described by the so-called 'exposure triangle', because all three influence how light or dark the final image appears. Strictly speaking, however, this terminology is incorrect: of this triad of variables, only aperture and exposure time determine exposure in the physical sense. Exposure refers to the amount of electromagnetic radiation received by the image sensor per unit area during image capture (in this text, exposure primarily concerns the visible part of the electromagnetic spectrum, commonly called light). Aperture controls the effective opening of the photographic objective and thus the irradiance reaching the image sensor, i.e. the electromagnetic radiant power arriving per unit area. Exposure time controls the duration over which that irradiance is collected. A larger aperture or longer exposure time increases exposure; a smaller aperture or shorter exposure time decreases it. ISO, by contrast, does not change the amount of electromagnetic radiation captured by the digital image sensor, but mainly controls how strongly the recorded signal is amplified; in analogue photography, changing ISO meant using a film with a different sensitivity. That is why ISO belongs to the practical control system of photography, even though it is not an exposure parameter in the strict radiometric sense. Aperture, exposure time, and ISO are nevertheless normally considered together because they jointly determine the appearance and usability of the final photograph. Changing one of them often requires compensation by one or both of the others.

Each of the three camera parameters also controls a specific trade-off in image quality. ISO mainly affects the visibility of image noise: higher ISO values (e.g. ISO 6400) usually make noise more visible, although modern image sensors and RAW-processing workflows can handle moderate to high ISO values

Glossary of Terminology

Circle of confusion. Even when perfectly focused, a lens images an object point as a small blur spot, because of diffraction and optical aberrations. For points nearer or farther than the focusing distance, defocus adds blur and can become the dominant contribution, depending on aperture and other variables. The total blur spot, typically approximated as a circle, is called the blur circle or circle of confusion. Most depth-of-field calculators, however, consider only the defocus blur and judge sharpness against a chosen maximum diameter: the **circle-of-confusion threshold**.

ISO setting. ISO is the internationally used short name for the International Organization for Standardization, which publishes standards across many fields, including photography. In film photography, ISO ratings describe the film's sensitivity to light. In digital photography, the ISO setting relates the exposure at the sensor to the camera's output image signal levels. Although often called 'sensor sensitivity', ISO itself changes neither the amount of light captured nor how efficiently the sensor converts it into electrical charge. Raising ISO generally amplifies the image signal, including the noise already present.

Optical aberrations. Departures from ideal image formation by a lens. Some enlarge or alter the shape of the blur spot formed by an object point (see circle of confusion); others distort image geometry. Real photographic lenses exhibit several aberrations to varying degrees, including spherical aberration, coma, astigmatism, chromatic aberration, distortion, and field curvature. Lens designers reduce and balance them, but some always remain (**residual aberrations**). Those that enlarge the blur spot generally diminish at smaller apertures.

Photosite. An individual light-sensitive element on an image sensor that converts incoming light into an electrical signal. Photosites are often misleadingly called pixels: a pixel (picture element) is the smallest element of the digital image, computed from photosite signals. A conventional 20-megapixel camera has about 20 million photosites contributing to the image. Photosites outside the image area may support colour interpolation at the edges or, shielded from light, provide black-level reference signals. The centre-to-centre distance between neighbouring photosites is the **photosite pitch**, usually expressed in micrometres (µm; thousandths of a millimetre). Projecting this spacing onto the photographed ground surface gives the local **ground sampling distance** (**GSD**).

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very well. Image sensor size and sensor technology also matter, because smaller sensors generally show more visible noise at the same ISO setting when framing, exposure settings, and output size are comparable.

The camera setting conventionally called shutter speed controls motion blur by determining exposure time. A short exposure time (e.g. 1/4000 s) can freeze motion, whereas a longer exposure time, such as 1 s, can smear moving detail across the image sensor. In aerial photography, this motion can come from the subject, such as vegetation moving in the wind. More often, however, it comes from the camera platform itself: the aircraft moves forward, vibrates, and changes attitude during exposure. The exposure time must be short enough to limit motion blur, expressed as image smear, caused by both the platform and the scene.

Aperture controls depth of field, diffraction, and the visibility of residual optical aberrations. Depth of field increases as the aperture is stopped down (e.g. from *f*/4 to *f*/8), meaning that more of the scene appears acceptably sharp. At wide apertures, the photographic objective uses a larger cone of light rays, including more marginal rays that pass through the outer parts of the optical system. Residual aberrations such as spherical aberration, coma, and astigmatism can then become more visible. Stopping down reduces the contribution of these marginal light rays and often improves image sharpness, but this benefit does not continue indefinitely. Once aperture-dependent aberrations have been sufficiently suppressed, further stopping down no longer improves the optical image; it increasingly replaces residual aberration blur with diffraction blur. Diffraction is the spreading of electromagnetic radiation caused by the finite aperture of the optical system. Even a perfect photographic lens cannot focus light to an infinitely small point, and the diffraction pattern grows larger as the aperture narrows. This creates a practical aperture balance: a wider aperture yields shallower depth of field and may make optical aberrations more visible, whereas a smaller aperture yields greater depth of field, less visible aberrations, but more diffraction softening. Between these extremes, many photographic objectives achieve their best overall performance roughly 1 to 3 stops down from maximum aperture. For example, a professional *f*/2.8 zoom may be close to its optical optimum around *f*/4 to *f*/5.6, where residual aberrations are already reduced but diffraction is still limited. Where available, online lens-test data (from websites such as DXOMARK, ePHOTOzine, LensTip, OpticalLimits/Photozone, and The Digital Picture) can be used to identify the optimum aperture more specifically. If such information is unavailable, stopping down by about 2 stops from maximum aperture is often a reasonable practice.

In aerial photography, this aperture balance differs from many forms of terrestrial photography. When photographing from several hundred metres above the surface, the focusing distance is very large. The depth of field, which depends not only on aperture but also on focusing distance, focal length, and the accepted blur criterion, is often already extensive, especially with moderate focal lengths. Stopping down to *f*/8 or *f*/11 may then add little useful depth of field, while it can visibly reduce image sharpness through diffraction. The aperture choice is then less about maximising depth of field than about keeping the objective within its best-performing aperture range, where residual aberrations and diffraction softening are both limited. That is why archaeological aerial photographers should choose an exposure time that minimises image smear and an aperture that avoids unnecessary softening of image detail. At the same time, the focal length must be chosen to provide the required spatial detail without causing excessive image motion at the aircraft speed and flying height.

Reflected-light metering and exposure modes

When a camera is pointed at a scene, its exposure system responds to the light reflected or emitted by that scene. The camera then records the radiation incident on the image sensor, according to the sensor's spectral sensitivities. However, it does not know what caused that sensor response: it cannot distinguish whether a particular response results from a highly reflective surface under moderate illumination or from a less reflective surface under stronger illumination. That is why reflected-light metering must apply a standard calibration assumption (International Organization for Standardization, 1974), commonly described photographically as rendering the metered scene near middle grey.

This assumption works as long as the frame is not dominated by a highly reflective object, such as snow, pale sand, or a white wall. In such cases, the camera underexposes the object, rendering it too dark and making the white object appear greyish. Conversely, if a low-reflectance object dominates the frame, the camera may increase exposure, rendering the image too bright and making that object appear greyish. The meter is not technically malfunctioning; it is solving an ambiguous radiometric problem by applying a standard photographic assumption.

In archaeological aerial photography, this problem is generally less critical because the photographed landscape usually contains a mixture of soil, vegetation, roads, buildings, and other surfaces. Modern multi-segment metering systems are also considerably more sophisticated than a simple average meter. As a result, the camera's exposure recommendation can often be trusted, and small exposure deviations can later be compensated for during RAW development.

All of this implies that if illumination remained constant, as it often does in studio work, one could use fixed manual exposure settings. In practical aerial photography, however, the scene may remain largely unchanged while the radiation reaching the image sensor changes substantially. These changes may result from haze, changing solar elevation, passing clouds, or the anisotropic reflectance behaviour of surfaces. For this reason, archaeological aerial photography is usually not conducted using a single fixed manual exposure setting throughout an entire flight. The exposure system should be allowed to respond to real changes in scene radiance, but it should not be allowed to choose settings that compromise geometric image sharpness.

Cameras address this trade-off through exposure modes, which determine which parameters the photographer sets and which the camera adjusts automatically. Manual mode represents the limiting case already mentioned: aperture, shutter speed, and, optionally, ISO are fixed, giving maximum control. However, it can be too rigid when illumination changes quickly during a flight. In aperture-priority mode, the photographer sets the aperture, while the camera adjusts the shutter speed and, optionally, ISO to achieve the metered exposure. In shutter-priority mode, the photographer sets the shutter speed, while the camera adjusts the aperture and, optionally, ISO. In program or fully automatic modes, the camera has broader control over

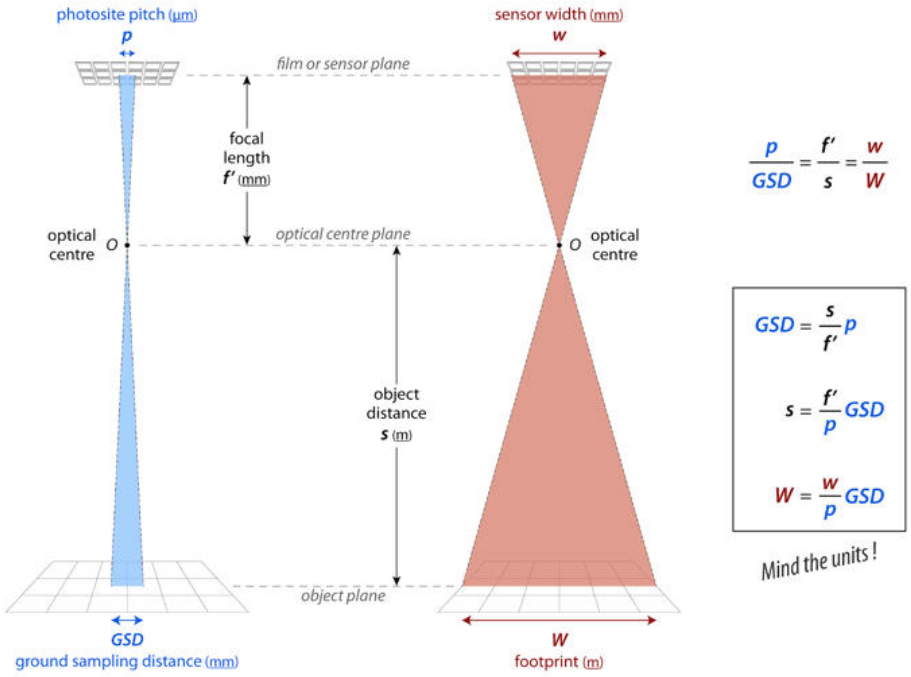


Figure 1. Relationship between photosite pitch p*, ground sampling distance (GSD), focal length* f*', object distance* s*, image sensor width* w*, and footprint* W *for the simplified near-nadir case over approximately flat terrain.*

exposure parameters, which can be convenient but is less suitable when aperture or exposure time must be constrained to maintain geometric sharpness. Program mode is less restrictive than fully automatic mode because the photographer can still control settings such as ISO and exposure compensation. Using program shift, the photographer can also select a different camera-proposed combination of aperture and exposure time that produces an equivalent exposure. However, the available combinations are still determined by the camera. Fully automatic mode is the least appropriate option for archaeological aerial photography, as it gives the photographer no direct control over aperture, exposure time, or ISO. It should be avoided when consistent image sharpness and predictable geometric quality are required.

Because an aircraft is moving, many aerial photographers understandably choose shutter-priority mode. They reason that a short exposure time is the most obvious defence against motion blur. This is not wrong, but it is incomplete. Shutter-priority mode has two separate weaknesses in aerial photography. First, it protects exposure time by giving up control over aperture. Second, it is often used with exposure times that seem short in ordinary photography but are still too long for aerial acquisition with modern, high-photosite-count (i.e. multi-megapixel) image sensors.

The first problem is one of control. In very sunny conditions, shutter-priority mode may stop the photographic objective down to *f*/8, *f*/11, or even *f*/16 at ISO 100 or ISO 200. For aerial photographs acquired several hundred metres above the surface, this is usually unnecessary. At such distances, the far depth-of-field limit of a 50 mm objective on a high-photosite-count full-frame camera is typically already at infinity near *f*/1, provided focus is set appropriately and a circle-of-confusion threshold of twice the image sensor's photosite pitch is adopted. Here, photosite pitch *p* indicates the centre-to-centre distance between neighbouring photosites on the image sensor (see Figure 1). A photosite pitch *p* of roughly 4 µm, typical of many high-photosite-count full-frame image sensors, thus yields a circle-of-confusion threshold of about 8 µm. This threshold specifies the maximum diameter of the image of an object point still considered acceptably sharp in depth-of-field calculations. This 2*p* criterion is more stringent than the traditional sensor-diagonal/1500 criterion, which equals about 30 µm for a full-frame image sensor and is used in most depth-of-field calculators (Nasse, 2010). The *f*/1 value merely demonstrates that depth of field does not require substantial stopping down. Since such a wide aperture is unavailable on most photographic lenses and many professional objectives perform best around *f*/5.6, the latter is a more realistic working aperture. At *f*/5.6, depth of field is already more than sufficient for virtually all observer-directed aerial reconnaissance, and stopping down further provides no useful gain when imaging terrain. Smaller apertures mainly increase diffraction softening. On high-photosite-count full-frame image sensors, diffraction becomes increasingly relevant from about *f*/8 and is clearly undesirable by *f*/11 when maximum sharpness is required. Conversely, if a very short exposure time is selected in low-light conditions, shutter-priority mode may keep the objective at its widest aperture, where residual aberrations can be more pronounced. In both cases, the problem is that the aperture is no longer controlled directly.

Before discussing the better alternative, it is useful to quantify the second problem: how short does the exposure time actually need to be?

How short must the exposure time be?

In ordinary photography, exposure times such as 1/500 s or 1/1000 s seem short. In aerial photography from a moving aircraft, they may still be too long. At a ground speed of 150 km/h, an aircraft travels approximately 41.7 m/s, so the camera moves about 8.3 cm during a 1/500 s exposure and about 4.2 cm

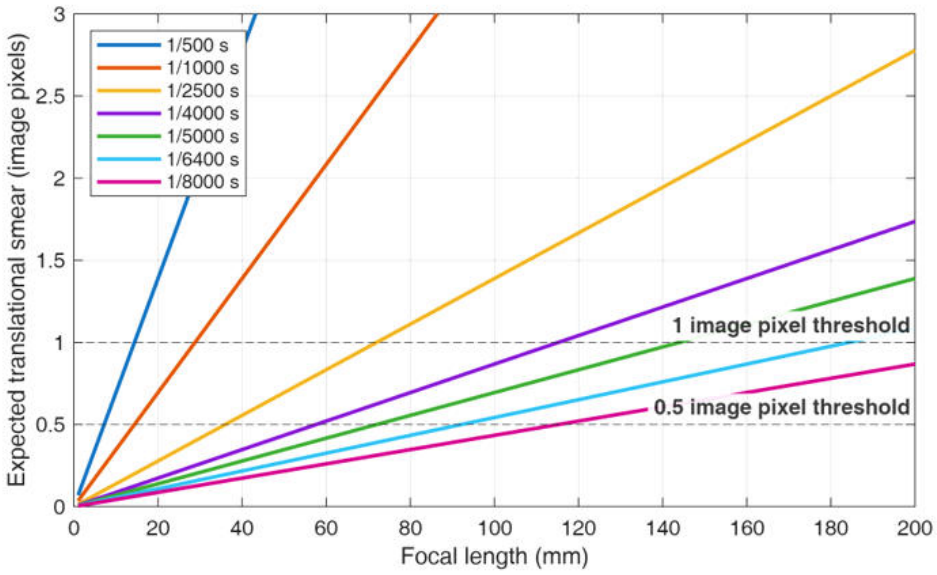


Figure 2. Expected translational image smear at common exposure times as a function of focal length, assuming a flying height of 300 m, a ground speed of 150 km/h, and a photosite pitch of 4.0 µm (as a representative round value for modern high-photosite-count full-frame image sensors).

during a 1/1000 s exposure. Whether this movement produces visible image smear depends mainly on the ground sampling distance (GSD), that is, the image sensor's photosite pitch projected onto the terrain. For a given photosite pitch, this projection depends mainly on the focal length f' of the photographic objective and the object distance s, which in the simplified near-nadir case corresponds approximately to the flying height above the terrain (see Figure 1). For a near-nadir photograph over approximately flat terrain, the ratio f'/s defines the image scale. In oblique photographs, image scale, and thus also GSD, varies across the frame. For the simplified near-nadir case, the expected translational smear in image pixels is motion during exposure divided by the GSD.

Using a 50 mm objective at a flying height of 300 m and a photosite pitch of 4.0 µm yields a GSD of approximately 2.4 cm. At 150 km/h, the 8.3 cm travelled during 1/500 s corresponds to about 3.5 image pixels of smear (8.3 cm / 2.4 cm), while the 4.2 cm travelled during 1/1000 s still corresponds to about 1.7 image pixels (4.2 cm / 2.4 cm; see Figure 2).

This simplified mathematical model only describes translational platform motion during exposure. Other effects, such as vibration, angular motion, turbulence, focus error, atmospheric effects, and object motion, can further degrade image sharpness. Image stabilisation, also called vibration reduction or vibration compensation, does not eliminate the need for short exposure times. In-lens, sensor-shift, and combined stabilisation systems primarily compensate for small angular motions and, in some cases, limited translational shake of the camera. They are not designed to compensate for the systematic image displacement caused by the aircraft's forward motion relative to the terrain and should not be used to justify longer exposure times. Moreover, image stabilisation must be deactivated when acquiring images for photogrammetric processing because it changes the camera's interior orientation between exposures (Nocerino *et al*., 2022).

For the translational component considered here, image smear should be evaluated against an explicit threshold. Zero smear is impossible in practice, but it can be kept small enough to be negligible for visual interpretation and photogrammetric processing (Sieberth *et al*., 2014). A smear of one image pixel is a useful upper warning limit, but it should not be treated as an ideal value. For high-quality photogrammetric work, a stricter threshold of about 0.5 image pixels is more defensible (Grenzdörffer, 2008; see Figure 2), whereas 0.3 image pixels is the author's own demanding target for situations requiring maximum image sharpness. The examples in Table 1 use a 24–120 mm zoom lens fitted to a Nikon Z 7II-class full-frame camera featuring a 4.33 µm photosite pitch. The ground speed is assumed to be 150 km/h, which represents a typical observer-directed acquisition speed during circling or slower survey flights.

These values show why exposure times such as 1/500 s or 1/1000 s are often too long. At a flying height of 300 m with a 50 mm focal length, keeping smear below 1 image pixel at 150 km/h requires an exposure time of about 1/1600 s or shorter. Keeping smear within half a pixel requires roughly 1/3200 s or shorter. The higher the ground speed, the lower the flying height, the longer the focal length, or the smaller the photosite pitch, the shorter the exposure time needs to be. Figure 3 shows the combined effect of flying height and focal length for a Nikon Z 7II-class image sensor with a 4.33 µm photosite pitch, while Figure 4 illustrates how the required exposure-time limit varies with photosite pitch at a fixed flying height of 300 m. Both figures assume a ground speed of 150 km/h and a maximum translational smear of 1 image pixel. Because translational displacement during exposure is directly proportional to ground speed, the maximum acceptable exposure time decreases in inverse proportion to ground speed (see Figure 5).

Figures 3 and 4 make it clear that, even at a 400 m flying height and a ground speed of 150 km/h, the upper end of a commonly used 24–120 mm photographic zoom requires approximately 1/2900 s for a smear of one image pixel and nearly 1/5800 s for a smear of half an image pixel. Since many cameras cannot use exposure times shorter than 1/4000 s, focal lengths around 120 mm are often outside the comfortable range for this type of acquisition when applying the stricter half-pixel threshold. Even a focal length of 105 mm, as found at the upper

Flying height	Focal length	GSD	Approx. exposure-time limit for 1 px smear	Approx. exposure-time limit for 0.5 px smear
200 m	24 mm	3.61 cm/px	1/1200 s	1/2300 s
200 m	50 mm	1.73 cm/px	1/2400 s	1/4800 s
200 m	60 mm	1.44 cm/px	1/2900 s	1/5800 s
200 m	120 mm	0.72 cm/px	1/5800 s	1/11500 s
300 m	24 mm	5.41 cm/px	1/800 s	1/1500 s
300 m	50 mm	2.60 cm/px	1/1600 s	1/3200 s
300 m	60 mm	2.17 cm/px	1/1900 s	1/3800 s
300 m	120 mm	1.08 cm/px	1/3800 s	1/7700 s
400 m	24 mm	7.22 cm/px	1/600 s	1/1200 s
400 m	50 mm	3.46 cm/px	1/1200 s	1/2400 s
400 m	60 mm	2.89 cm/px	1/1400 s	1/2900 s
400 m	120 mm	1.44 cm/px	1/2900 s	1/5800 s
500 m	24 mm	9.02 cm/px	1/500 s	1/900 s
500 m	50 mm	4.33 cm/px	1/1000 s	1/1900 s
500 m	60 mm	3.61 cm/px	1/1200 s	1/2300 s
500 m	120 mm	1.80 cm/px	1/2300 s	1/4600 s

Table 1. Approximate exposure-time limits required to limit image-space motion smear to 1 px and 0.5 px for different flying heights and focal lengths, assuming a 4.33 µm photosite pitch and a ground speed of 150 km/h.

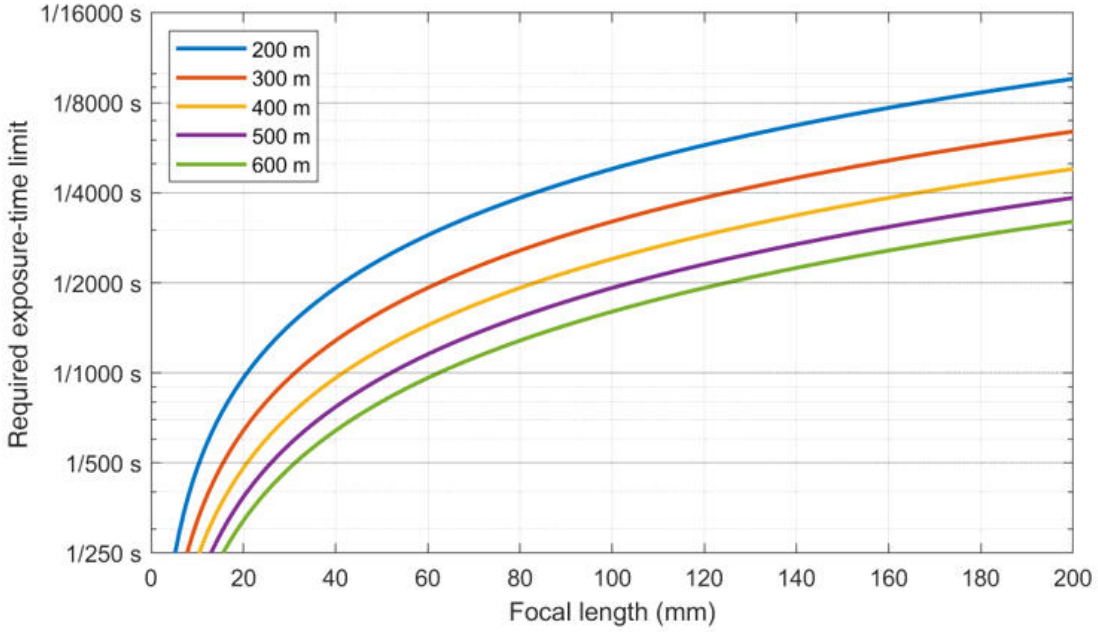


Figure 3. Required exposure-time limit as a function of focal length and flying height to keep translational image smear at or below 1 image pixel, assuming a Nikon Z 7II with a photosite pitch of 4.33 µm and a ground speed of 150 km/h.

end of 24–105 mm zooms, can become problematic when flying lower or at higher ground speeds (see Figure 5).

For side-looking oblique photographs, the situation is slightly different because GSD varies across the frame. In an oblique image taken with the camera pointed sideways from the aircraft and downward towards the ground, the GSD near the image centre is coarser than in a nadir image (because the object distance s is longer). As a simple centre-frame approximation, the along-track GSD relevant to forward-motion smear can be corrected by dividing the nadir GSD by the cosine of the off-nadir angle θ. At $\theta = 45°$, this gives a coarsening factor of $1/\cos(45°) \approx 1.4$ (see Figure 6). The same ground displacement consequently spans fewer image pixels, so the shutter-speed denominator required to meet a given image-space smear threshold decreases by a factor of $\cos(45°) \approx 0.7$ (see Figure 6). In the 300 m and 50 mm example, the one-pixel threshold is relaxed from about 1/1600 s in nadir geometry to 1/(1600 × cos(45°)), or roughly 1/1100 s, near the centre of the 45° oblique image. The half-pixel threshold changes similarly, from about 1/3200 s to approximately 1/2300 s. However, the longer permissible exposure time does not result from reduced aircraft motion, but merely reflects the coarser, spatially variable sampling of terrain in oblique imagery.

When flying in a circle, the same principle applies. As ground speed decreases, translational smear decreases in direct proportion, allowing slightly longer exposure times. Circling an object can also help, as it keeps the camera pointed at the same target. This may reduce smear near the centre of the image. However, other parts of the frame can still move during the exposure, especially if they are closer than the target. While circling can thus reduce motion smear in some cases, it should not be used as a general justification for long exposure times.

The practical conclusion is straightforward. Shutter-priority mode solves the motion-smear problem only if the selected

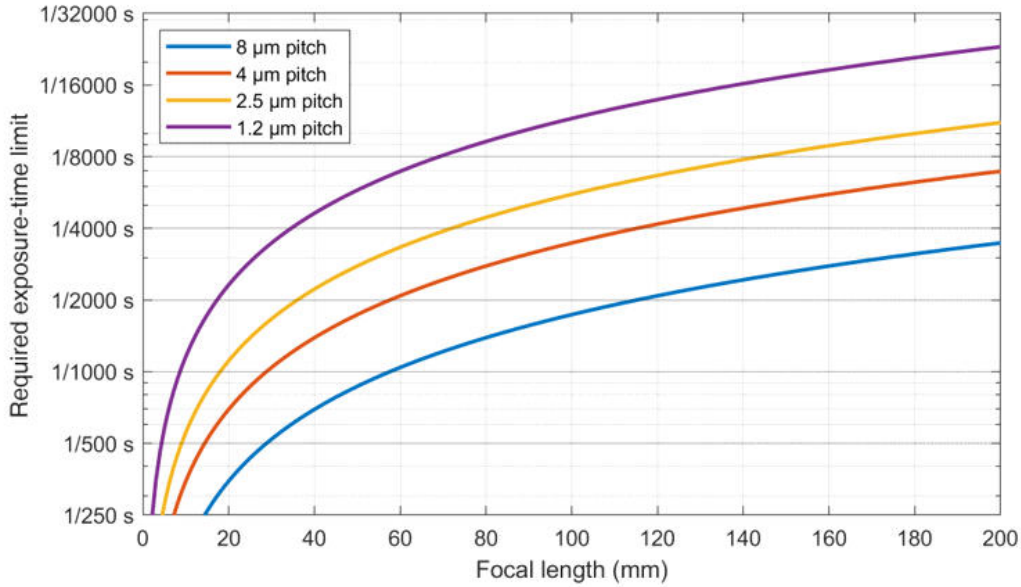


Figure 4. Required exposure-time limit as a function of focal length for different photosite pitches to keep translational image smear at or below 1 image pixel, assuming a flying height of 300 m and a ground speed of 150 km/h. The selected photosite pitches are representative values: 8 µm for large-pitch or lower-photosite-count image sensors, including some older full-frame cameras and medium-format digital backs; 4 µm for modern high-photosite-count full-frame cameras; 2.5 µm for 1-inch-type compact-camera sensors; and 1.2 µm for small high-photosite-count action-camera or smartphone image sensors.

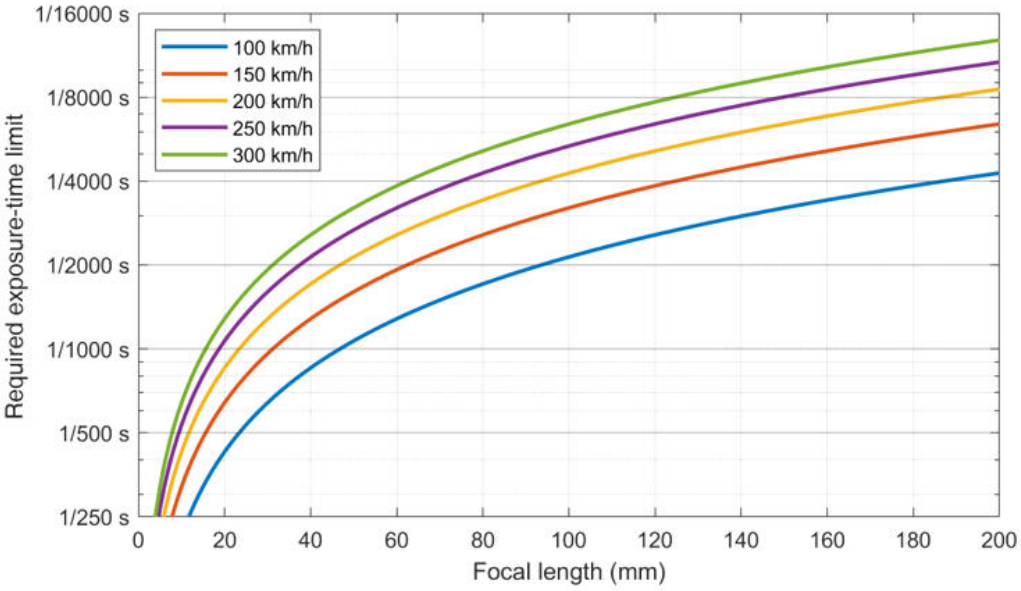


Figure 5. Required exposure-time limit as a function of focal length for different ground speeds, assuming a flying height of 300 m, a photosite pitch of 4.33 µm, and a maximum translational smear of 1 image pixel.

exposure time is sufficiently short. That value must be justified by ground speed, flying height, focal length, photosite pitch, viewing geometry, and the acceptable pixel-smear threshold. For modern high-photosite-count cameras used on fast light aircraft, exposure times such as 1/500 s should generally be considered too long, while 1/1000 s is often still borderline unless the aircraft is flying slowly, the focal length is short, the flying height is relatively high, and a one-pixel smear threshold is acceptable. At around 50 mm and flying heights of 300 m to 400 m, exposure times of about 1/2500 s to 1/4000 s are much more defensible for typical observer-directed flight around 150 km/h. Shorter exposure times, such as 1/5000 s, 1/6400 s, or 1/8000 s, remain preferable when ground speed increases, longer focal lengths are used, or a stricter half-pixel smear threshold is required. At 120 mm, even 1/8000 s may be necessary or insufficient, depending on flying height and ground speed.

For older cameras limited to 1/4000 s, the practical advice is not to abandon acquisition with short exposure times, but to respect the limit: use the shortest available exposure time, restrict the focal length more carefully, and avoid combining a low flying height with a long focal length. When comparing like

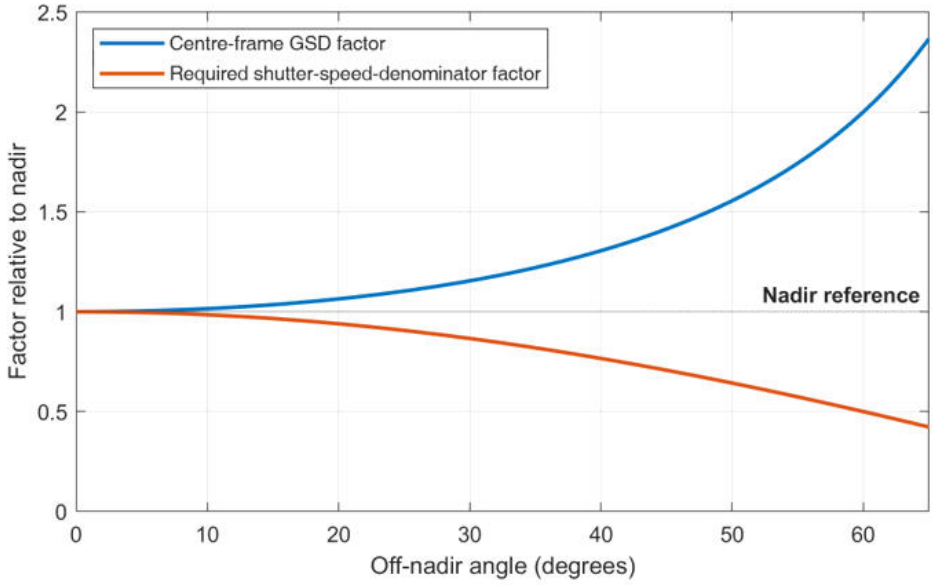


Figure 6. Centre-frame oblique correction for side-looking aerial imagery, showing how the along-track GSD factor increases as 1/cosθ while the required shutter-speed denominator decreases as cosθ.

with like (full-frame with full-frame, APS-C with APS-C), older models often have a lower photosite count and thus a larger photosite pitch. As a result, 1/4000 s may be more acceptable in terms of pixel smear on such a camera than on a modern high-photosite-count model. Even then, longer focal lengths remain risky unless flying height, ground speed, viewing geometry, and smear tolerance have been checked explicitly.

This brings the argument back to aperture control. Shutter-priority mode can be useful only if the selected exposure time is short enough, but it achieves this exposure-time control by giving the camera freedom over aperture. Depending on light levels, this can place the photographic objective outside its best-performing aperture range: too wide, where residual aberrations may be more visible, or too narrow, where diffraction softening becomes stronger. A better strategy is to reverse the priority: keep the aperture near the photographic objective's optical optimum, enable automatic ISO, and set a maximum exposure-time limit. This is the role of aperture priority combined with automatic ISO.

Auto ISO and aperture priority

Automatic ISO (Auto ISO) is a camera function that allows the camera to adjust the ISO value as part of its exposure calculation. Instead of fixing ISO at a single value, the photographer defines an allowed ISO range, for example from ISO 100 to ISO 3200. Within this range, the camera can adjust ISO when the selected aperture and/or exposure time would otherwise lead to under- or overexposure.

For aerial photography, Auto ISO is useful only if it is configured to keep the exposure time short enough to limit motion-induced pixel smear. This can be achieved by combining Auto ISO with a maximum exposure-time limit. In camera menus, this limit usually appears as a minimum-shutter-speed setting (i.e. the longest exposure time the camera may choose before raising ISO). For example, the camera may be set to start at ISO 100, increase ISO up to ISO 1600 when needed, and avoid exposure times longer than 1/4000 s. If the available light is insufficient to maintain 1/4000 s at ISO 100, the camera may raise ISO up to, but not beyond, the selected ceiling. In this configuration, ISO acts as a safety valve: it allows the camera to respond to changing illumination while helping to prevent exposure times that would cause unacceptable pixel smear.

This setup is especially relevant in aperture-priority mode. In this mode, the photographer sets the aperture to a value at which the photographic objective performs well optically (e.g. *f*/4, *f*/5.6, or *f*/6.3), while the camera determines the exposure time. If Auto ISO and a minimum-shutter-speed setting are enabled, the camera initially maintains the metered exposure using the selected aperture and an appropriate exposure time. When this would require an exposure time longer than the chosen limit, the ISO is raised instead, up to the permitted upper limit. Under strong illumination, the camera can use shorter exposure times. This provides the desired hierarchy for aerial photography: the photographer controls the aperture, the exposure time is kept from becoming too long, and ISO serves as the flexible compromise. This approach is practical because modern full-frame and APS-C cameras can often produce images with acceptable noise levels at ISO 1600, and because reducing noise is generally much easier than correcting motion-induced pixel smear. This configuration also retains quick exposure compensation: when the reflected-light meter is misled by, for example, snow-covered or predominantly dark terrain, the photographer can bias the metered exposure directly, and the camera applies the correction through the exposure time (within the configured limit) and ISO, while the aperture remains unchanged.

The same logic does not transfer cleanly to shutter-priority mode. In shutter-priority mode, the photographer has already set the shutter speed (e.g. 1/4000 s), and the camera adjusts the aperture to obtain the required exposure. Shutter priority can thus guarantee a short exposure time, but it gives up aperture control. Under strong illumination, the camera may stop down the photographic objective to *f*/8, *f*/11, or even smaller apertures, thereby increasing diffraction softening without adding useful depth of field for distant terrain. Under low-

illumination conditions, the camera may fully open the photographic objective, resulting in softening due to aperture-dependent aberrations. Although Auto ISO may still be available, the minimum-shutter-speed logic cannot serve as the primary control mechanism, since the photographer has already set the exposure time. The camera may still raise ISO if the maximum aperture is insufficient to obtain the required exposure, or it may reach the lowest ISO limit and the smallest available aperture (i.e. the largest available *f*-number) if the illumination is too strong. In either case, ISO is only a secondary compensation mechanism; it cannot preserve the desired aerial-photography hierarchy in which aperture is controlled, exposure time is limited, and ISO is used as the flexible compromise. A closely related alternative is manual mode combined with Auto ISO: the photographer fixes both the aperture and the exposure time, ISO remains the flexible variable, and exposure compensation can act through ISO where supported. This configuration realises the same hierarchy and can work equally well. Nevertheless, aperture-priority mode is recommended here because, under strong illumination, it automatically selects exposure times even shorter than the configured limit, further reducing motion smear, whereas a manually fixed exposure time leaves that reserve unused.

However, there is one caveat to be aware of. Even in aperture-priority mode with Auto ISO, the selected minimum-shutter-speed setting does not guarantee a sufficiently short exposure time. If the camera reaches the selected maximum ISO and still cannot obtain the metered exposure, many cameras will allow the exposure time to become longer than the selected limit. Because exactly this should be avoided in aerial photography, the ISO ceiling must be set high enough for the expected lighting conditions, and the photographer should check during the flight that the camera actually maintains the intended exposure-time limit. Under such conditions, an upper limit as high as ISO 6400 may be preferable to the alternative of motion-induced pixel smear. Although such ISO values increase image noise, current denoising methods can often reduce it substantially. In addition, residual noise is usually preferable to pixel smear in photogrammetric processing, georeferencing, and interpretative mapping, because noise primarily affects local image texture, whereas smear displaces and blends image detail.

Conclusion

Aperture-priority mode with Auto ISO and a maximum exposure-time limit is the preferred practical compromise for producing sharp aerial images during observer-directed archaeological aerial photography. It provides the camera with the appropriate hierarchy for aerial image sharpness: the aperture remains near the optical optimum of the photographic objective, the exposure time is kept from becoming too long within the predefined ISO range, and ISO serves as the flexible exposure variable. In summary, the recommended default exposure strategy is to select aperture-priority mode with an aperture near the optical optimum, set Auto ISO to an ISO ceiling appropriate for the intended output, and set the longest exposure time to the value required by the acquisition geometry (or, if the camera cannot reach that value, to the shortest exposure time it offers while restricting focal length accordingly). For many high-photosite-count cameras operated from fast light aircraft, this means treating 1/2500 s to 1/4000 s as a practical working range for moderate focal lengths during observer-directed surveys, while preferring 1/5000 s, 1/6400 s, or 1/8000 s for faster flight, longer focal lengths, lower flying heights, or stricter pixel-smear thresholds.

Interactive companion tool

The calculations underlying this paper, including those used to produce Figures 2 to 6, can be explored interactively with AirSharp, an aerial image sharpness calculator freely available at: https://beyondconventionalboundaries.github.io/airsharp. Readers can enter their own camera, lens, flight, and sharpness parameters and immediately see the resulting ground sampling distance, expected motion smear, and required exposure-time limit, along with interactive versions of Figures 2 to 6. The tool also computes depth-of-field and diffraction values (topics beyond the scope of this paper) and complements the discussion of Auto ISO by estimating the ISO value implied by the scene illumination, chosen aperture, and exposure time. Every setting is encoded in the page address, allowing specific configurations to be bookmarked or shared. The tool runs entirely in the browser, and all underlying formulas and version history are documented on the page.

References

Grenzdörffer, G. J. 2008. "Medium Format Digital Cameras – a EuroSDR Project." *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci. (International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences)* XXXVII-B1: 1043–49. https://www.isprs.org/proceedings/xxxvii/congress/1_pdf/179.pdf.

International Organization for Standardization. 1974. *Photography — General Purpose Photographic Exposure Meters (Photoelectric Type) — Guide to Product Specification*, ICS 37.040.10, ISO 2720:1974. https://www.iso.org/standard/7690.html.

Nasse, Hubert H. 2010. "Depth of Field and Bokeh." Technical article, Carl Zeiss AG, Camera Lens Division. https://lenspire.zeiss.com/photo/app/uploads/2022/02/technical-article-depth-of-field-and-bokeh.pdf.

Nocerino, Erica, Fabio Menna, and Geert Julien Joanna Verhoeven. 2022. "Good Vibrations? How Image Stabilisation Influences Photogrammetry." *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.* XLVI-2/W1-2022:395–400. https://doi.org/10.5194/isprs-archives-XLVI-2-W1-2022-395-2022.

Sieberth, T., R. Wackrow, and J. H. Chandler. 2014. "Motion Blur Disturbs – the Influence of Motion-blurred Images in Photogrammetry." *Photogram Rec* 29 (148): 434–53. https://doi.org/10.1111/phor.12082.

The Selsley Common Dinosaur Geoglyphs and the Archaeology of the Very Recent Past

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Dinosaur geoglyphs created by a family from Stroud, England, during the United Kingdom's first COVID-19 lockdown provide an intriguing example of the material culture of the pandemic. Their designs can be identified on a satellite image available through Google Earth, providing a record of a temporary intervention in the landscape associated with a specific moment in recent history. This article briefly describes the nature of the geoglyphs and shows how satellite imagery can preserve evidence of otherwise ephemeral activities and contribute to the archaeological documentation of contemporary social experience during times of crisis.

Introduction

The archaeology of the recent past has emerged as an increasingly important field of research, extending archaeological enquiry beyond conventional chronological boundaries to investigate the material traces of modern and contemporary societies (Graves-Brown, Harrison, and Piccini, 2013). Drawing on approaches from historical archaeology, landscape archaeology and material culture studies, it examines how human activities, technologies, social practices and cultural values are expressed in the physical environment. Research has addressed everyday life, modern conflict, industrial landscapes, waste, graffiti, furniture and other material forms of recent social experience. The remains of industrialisation, military infrastructure, urban development and everyday activities demonstrate that archaeological evidence is not confined to the distant past but continues to accumulate within landscapes that are still being used, modified and reinterpreted.

The COVID-19 pandemic provides a particularly relevant context for investigating the archaeology of the very recent past. Following the emergence of SARS-CoV-2 in late 2019, the virus spread internationally during early 2020, profoundly affecting societies worldwide. Lockdowns, restrictions on movement, the closure of workplaces and public spaces, and changes in patterns of work, consumption and social interaction transformed everyday life (Magnani *et al*., 2021). The World Health Organization estimated that approximately 14.83 million excess deaths were associated directly or indirectly with the pandemic during 2020–2021, illustrating its immense global impact (Msemburi *et al*., 2023). Despite the scale of this disruption, archaeological research specifically investigating its material traces remains relatively limited. Existing studies have examined discarded materials, personal protective equipment, sanitising products, social-distancing signs, temporary barriers, graffiti, chalk art, painted rocks and altered landscapes, demonstrating how the material environment recorded changing behaviours and responses to public-health measures (e.g., Magnani *et al*., 2022; Schofield *et al*., 2021). Such investigations highlight the potential of contemporary archaeology to document events while their physical traces remain visible, although systematic research into the wider spatial distribution and persistence of pandemic-related features remains comparatively scarce.

Against this background, the dinosaur geoglyphs created by a family from Stroud, England, during the United Kingdom's first COVID-19 lockdown provide an intriguing example of the material culture of the pandemic. Their designs can be identified on a satellite image available through Google Earth, providing a record of a temporary intervention in the landscape associated with a specific moment in recent history. This article briefly describes the nature of the geoglyphs and shows how aerial imagery can preserve evidence of otherwise ephemeral activities and contribute to the archaeological documentation of contemporary social experience during times of crisis.

Selsley Common

Selsley Common is a sizeable area of limestone grassland located on a flat-topped spur at an elevation of 200 m above mean sea level along the edge of the Cotswold escarpment approximately 2.5 km southwest of Stroud, Gloucestershire, England (Figure 1) (Wikipedia, 2026). The common overlies the Jurassic limestone of the Cotswolds and is a rich habitat for rare flora and fauna, and was designated a biological and geological Site of Special Scientific Interest in 1966. Despite attempts to enclose the common since Saxon times, it has been vigorously defended and is still used by local residents for

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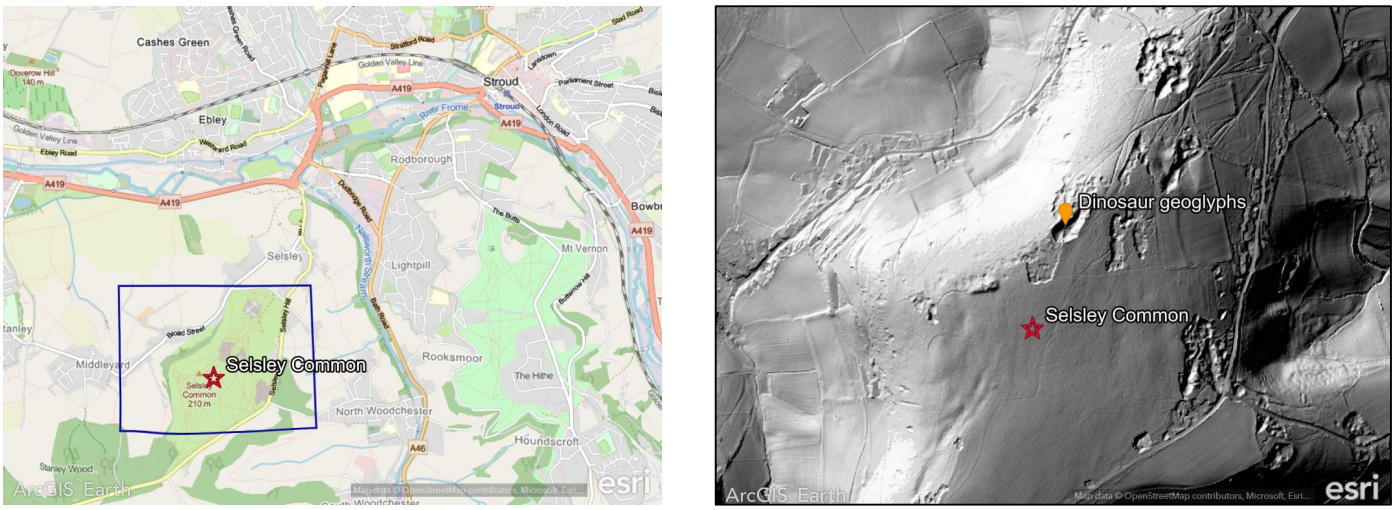


Figure 1. Location of the Selsley Connon dinosaur geoglyphs. Left: Location map showing Selsley common in relation to Stroud, Gloucestershire. Right: lidar image of part of Selsley Common (outlined in blue on the map) clearly showing the various disused quarries that are present on the common and the quarry in which the dinosaur geoglyphs were located, indicated by the orange pin. Map data © OpenStreetMap. Contains Environment Agency lidar data © Environment Agency copyright and/or database right 2022. All rights reserved. Open Government Licence.

livestock grazing, in accordance with ancient rights, and is very popular place for walkers.

Dotted over the common are the long-abandoned remains of limestone quarries, clearly visible on the lidar image in Figure 1, that were once used to supply stone for local building and walling. It was in one of these quarries that the dinosaur geoglyphs were constructed.

The dinosaur geoglyphs

Geoglyphs are handmade features created on the surface of the earth with the most well-known being the Nazca lines in Peru, although they are also found elsewhere including the famous hill figures in the south of England (Valenzuela and Clarkson, 2014). They are made by either removing or clearing sand or stones, or sometimes adding stones to a surface, to create a contrast between the feature and the ground.

In April 2020 during the first of three nationwide lockdowns to curb the spread of the SARS-CoV-2 virus, the Booker family from Stroud began creating large dinosaur designs from loose pieces of Cotswold stone in one of the disused quarries on Selsley Common (BBC News, 2020; SoGlos, 2020). What began as a simple science and design experiment as part of a home-schooling activity during their daily exercise walks developed into an informal outdoor gallery featuring recognisable dinosaur forms, including a *Tyrannosaurus rex*, Triceratops and Velociraptor. The largest figure, the *T. rex* measuring approximately 6 m in length, reportedly took nearly two weeks to complete. The project was partly inspired by their son's enthusiasm for dinosaurs and was intended both to thank the NHS staff who had cared for his medical condition and to raise people's spirits during the lockdown restrictions.

The view from above

Fortuitously, the dinosaur geoglyphs were captured a Google Earth satellite image that was acquired on 23rd April 2020 (Figure 2), exactly one month after the start of the first national COVID-19 lockdown. Located at 57.7274°N 2.2493°W, the geoglyphs are between 3 and 6 m in maximum extent and can be readily seen, along with sections of several paths, as light-toned features that contrast with the green vegetation of the quarry floor.

A transcription and interpretation of the geoglyphs and paths visible on the satellite image is shown in Figure 3. The dinosaur forms depicted in the geoglyphs have been identified based on comparison with the stereotypical silhouettes shown in Figure 4, supported by a dinosaur field guide (Paul, 2016).

The dinosaur and other identified forms comprise (letters refer to Figure 3):

1. Mentioned directly or shown in photographs in the online news articles:
   - (a) *T. rex*, readily identifiable from the large head, short arms, long tail and bipedal stance.
   - (b) Triceratops, identifiable from its general shape and quadrupedal stance.
   - (c) Velociraptor, identifiable from its general shape and bipedal stance.
   - (d) Sauropod, possibly a Diplodocus or Brontosaurus, identifiable from its long neck, large body, long tail and quadrupedal stance.
   - (e) Spinosaurus, readily identifiable by the large sail on its back and clearly visible on a photograph in the BBC News item.
2. Additional objects visible on the satellite image:
   - (f) Unidentified sauropod-like dinosaur based on its form and quadrupedal stance.
   - (g) Possible crocodile or Mosasaur based on its shape. Whilst not a dinosaur, a Mosasaur would be consistent with the Mesozoic theme of the dinosaur gallery.
   - (h) Palm trees.
   - (i) Horse?
   - (j) Unidentified feature.
   - (k) Unidentified feature, possibly corresponding to a Pterodactyl which is visible on a ground level photograph in the BBC News article.
   - (l) Unidentified feature.
   - (m) Unidentified feature.



Figure 2. Google Earth image of the Selsley dinosaur geoglyphs acquired on 23rd April 2020. Source: Google Earth, imagery © 2020.

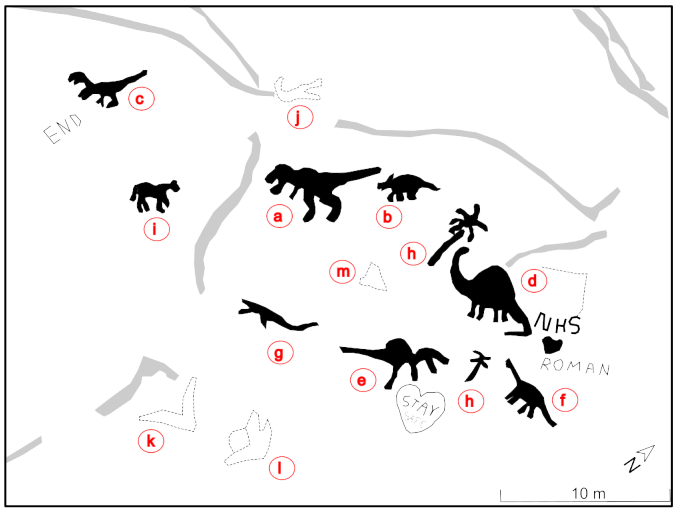


Figure 3. Transcription of the geoglyphs and footpaths seen in Figure 2. Footpaths are shown in light grey, identified geoglyphs in black, conjectured objects and letters are shown as dotted outlines. Red letters in circles refer to the identifications of dinosaurs and other features described in the text.

Additionally, several letter-based features can be discerned in the satellite image, including the words 'END', 'NHS' and 'ROMAN'. Two heart symbols are also visible: one is possibly associated with 'NHS', while the other contains the phrase 'STAY SAFE'.

Although the *T. rex*, Triceratops and Velociraptor can be attributed to the Booker family, the creators of the remaining features are unknown. The BBC News report, however, describes the three dinosaurs as 'among the designs laid out' by the family and includes a photograph of the father constructing a Pterodactyl. Other visitors may have contributed to the geoglyphs, although the available evidence does not permit this to be established with certainty.

Ephemeral nature of the geoglyphs

The ephemeral and dynamic nature of the geoglyphs is evident in a ground-level photograph taken on 17th May 2020 and posted on the Geograph website (Figure 5), which shows how substantially the dinosaur gallery had changed in just 24 days. By then, new dinosaur geoglyphs had been added below the *T. rex*, including a Dilophosaurus depicted with the fictionalised retractable neck frill popularised by the 1993 film *Jurassic Park*, and a Hadrosaurus with a crest on its head, possibly representing a Parasaurolophus. The horse had disappeared and a new theropod-like dinosaur has appeared besides the Velociraptor. A depiction of the Sun had also appeared to the right of the Triceratops. Away from the main dinosaur group, a human figure had appeared with another theropod-like dinosaur below it; both were absent from the April satellite image. Numerous additional letter-based features were also visible. Some may have been present in April but were too small to be resolved in the satellite image, whereas others may have been added after it was acquired.

The ephemeral nature of the geoglyphs is reinforced by the changes observed in a time series of satellite images both before and after the image acquired in April 202 as shown in Figure 6. Prior to the pandemic, the quarry geoglyphs were mainly unstructured corresponding to random messages and designs left by visitors, with most being too small to be resolved in the satellite images. The dinosaur gallery changed that, with the large designs clearly visible in April 2020. By the time of the next image on 21st July 2021, the dinosaur geoglyphs from 2020

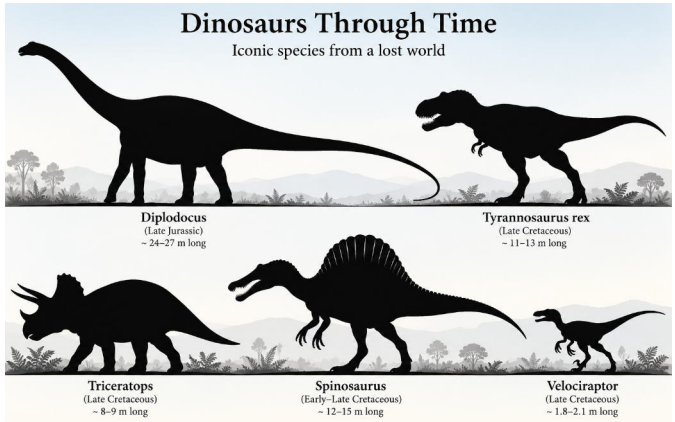


Figure 4. Dinosaur silhouettes used for comparison with the Selsley Common geoglyphs. Author-generated image using OpenAI ChatGPT (GPT-5.6), 2026.



Figure 5. Photograph of the Selsley Common dinosaur geoglyphs taken on 17th May 2020. © Dinosaur Art, Selsley Common by J I Cheetham, CC BY-SA 2.0.



Figure 6. Montage of satellite images of Selsley Common. Source: Google Earth, imagery © 2013, 2014, CNES/Airbus 2018, 2020, 2021, Airbus 2023.

can no longer be seen, although what looks to be a new sauropod-like dinosaur has appeared. By June 2023, much like their real-life counterparts who became extinct 65 million years ago (Alvarez, 1997), the days of the dinosaur gallery were finally over and they would become replaced by new "species" of geoglyphs, including most recently a spiral (Pizzey, 2026).

Discussion

Although the Selsley Common dinosaur geoglyphs were unlikely to have been intended as permanent monuments, their preservation in remotely sensed imagery allows them to be examined as material evidence of how people adapted to the circumstances of the COVID-19 pandemic. They therefore offer a valuable case study in the archaeology of the very recent past, demonstrating how satellite imagery can document otherwise ephemeral activities and preserve evidence of contemporary social experience.

The dinosaur geoglyphs were a direct response to the COVID-19 pandemic, originating as a home-schooling activity undertaken during the family's permitted daily exercise under national lockdown restrictions. The informal project was intended both to thank NHS staff who had cared for the family's son and to raise public spirits during lockdown. The choice of dinosaurs was inspired by the son's enthusiasm for them which in turn reflects their enduring prominence in popular culture.

The choice of a quarry on Selsley Common as the location for the dinosaur gallery is noteworthy. Although the quarry was already a place where visitors arranged stones into messages and designs, the dinosaur gallery transformed this familiar local practice into a more ambitious undertaking. Unlike other geoglyphs which occupy slopes and can be seen from a distance (Valenzuela and Clarkson, 2014), the dinosaur gallery lay within the quarry and was visible only from within it, from its edge, or from above. The quarry was probably chosen for its ready supply of small stones rather than for the prominence of the site. This setting unfortunately contributed to the geoglyphs' short lifespan, as the finite stock of stones used to construct them was subsequently repurposed for other designs and messages. Although the dinosaur gallery itself was eventually destroyed, ground-level photographs and satellite imagery preserve a lasting record of its existence, much like an aerial photograph from 1944 preserved a single point in time on on the Home Front during the Second World War (Stoertz, 2010).

The Selsley Common dinosaur geoglyphs can be understood within the wider range of informal, creative responses to the COVID-19 pandemic that emerged across Britain during the first lockdown of 2020. Alongside rituals such as the weekly *Clap for Carers*, rainbow displays supporting the NHS, neighbourhood mutual-aid initiatives, and temporary signs, artwork and decorations, people used creative practices to sustain social connection and give visible form to shared experiences of lockdown. Research on UK arts engagement found that creative activity supported social connectedness through conversation, shared experiences, belonging and collective understanding during the first year of the pandemic (Perkins *et al.,* 2022). Likewise, studies of the first UK lockdown document grassroots arts and crafts as forms of socially supportive "coronavirus kindness" (Baracsi, 2022). The dinosaur geoglyphs therefore represent a distinctive local form of lockdown material culture: a family- or neighbourhood-based creative activity that temporarily transformed an existing landscape and which can be interpreted in relation to the wider practices through which people made pandemic life visible.

Unlike the ephemeral rainbows, signs and chalk drawings that characterised much of this response, the Selsley figures were constructed from stone and became a conspicuous feature of the landscape, albeit within the confines of the quarry. They consequently occupy an instructive position between informal creative activity, community engagement and landscape intervention (Marshall, 2023). Contemporary-archaeology research identifies the ephemeral art, graffiti, painted rocks and

signage as pandemic material responses and altered landscapes (Angelo *et al*., 2021), while heritage scholarship explicitly considers whether such features should be treated as archaeological artefacts (Angelo *et al*., 2022). Their subsequent recording through photography, news reports and satellite imagery therefore preserves an otherwise transient aspect of pandemic life. Archaeological approaches using photography, geolocation and three-dimensional modelling have been proposed for recording changing material and social patterns during crises (Magnani *et al*., 2021) and participatory collections of photographs of lockdown messages show how documentation of physical displays can contribute to an alternative collective memory (Severo and Gensburger, 2024). On this basis, the dinosaur geoglyphs can be described as not only a product of lockdown but also an archaeological trace of the social and material culture of the COVID-19 pandemic.

References

Alvarez, Walter. 1997. *T. Rex and the Crater of Doom*. Princeton, NJ: Princeton University Press.

Angelo, Dante, Kelly Britt, Margaret Lou Brown, and Stacey L. Camp. 2021. "Private Struggles in Public Spaces: Documenting COVID-19 Material Culture and Landscapes." *Journal of Contemporary Archaeology* 8 (1) 154–184. https://doi.org/10.1558/jca.43379.

Angelo, Dante, Kelly M. Britt, Margaret Lou Brown, and Stacey L. Camp. 2022. "Collecting and Curating COVID-19 Heritage: Challenges of Conservation and Management." *Conservation and Management of Archaeological Sites* 24 (4–6): 160–81. https://doi.org/10.1080/13505033.2023.2283964.

Baracsi, Zita. 2022. "'Coronavirus Kindness' Phenomenon: Trends of Social Flow of Creativity during the First 27 Days of Social Distancing in the COVID-19 Pandemic in the United Kingdom." *Journal of Arts & Communities* 13 (1): 65–83. https://doi.org/10.1386/jaac_00039_1.

BBC News. 2020. "Coronavirus: Stroud Family Makes Dinosaur Quarry Art." 2020. https://www.bbc.co.uk/news/uk-england-somerset-52286401.

Graves-Brown, Paul, Rodney Harrison, and A Piccini. 2013. *The Oxford Archaeology of the Contemporary World*. Oxford: Oxford University Press.

Magnani, Matthew, Natalia Magnani, Anatolijs Venovcevs, and Stein Farstadvoll. 2022. "A Contemporary Archaeology of Pandemic." *Journal of Social Archaeology* 22 (1): 48–81. https://doi.org/10.1177/14696053211043430.

Magnani, Matthew, Anatolijs Venovcevs, Stein Farstadvoll, and Natalia Magnani. 2021. "How to Record Current Events like an Archaeologist." *Advances in Archaeological Practice* 9 (4): 379–86. https://doi.org/10.1017/aap.2021.24.

Marshall, Steve. 2023. "Navigating COVID-19 Linguistic Landscapes in Vancouver's North Shore: Official Signs, Grassroots Literacy Artefacts, Monolingualism, and Discursive Convergence." *International Journal of Multilingualism* 20 (2): 189–213. https://doi.org/10.1080/14790718.2020.1849225.

Msemburi, William, Ariel Karlinsky, Victoria Knutson, Serge Aleshin-Guendel, Somnath Chatterji, and Jon Wakefield. 2023. "The WHO Estimates of Excess Mortality Associated with the COVID-19 Pandemic." *Nature* 613 (7942): 130–37. https://doi.org/10.1038/s41586-022-05522-2.

Paul, Gregory S. 2016. *The Princeton Field Guide to Dinosaurs*. 2nd ed. Princeton and Oxford: Princeton University Press.

Perkins, R., S.L. Kaye, B.B. Zammit, A. Mason-Bertrand, N. Spiro, and A. Williamon. 2022. "How Arts Engagement Supported Social Connectedness during the First Year of the COVID-19 Pandemic in the United Kingdom: Findings from the HEartS Survey." *Public Health* 207 (June): 1–6. https://doi.org/10.1016/j.puhe.2022.03.002.

Pizzey, Simon. 2026. "From Dinosaurs to a Neo-Ancient Monument – the Twists and Turns of the Selsley Spiral." *Stroud Times*, 2026. https://stroudtimes.com/from-dinosaurs-to-a-neo-ancient-monument-the-twists-and-turns-of-the-selsley-spiral/.

Schofield, John, Estelle Praet, Kathy A. Townsend, and Joanna Vince. 2021. "'COVID Waste' and Social Media as Method: An Archaeology of Personal Protective Equipment and Its Contribution to Policy." *Antiquity* 95 (380): 435–49. https://doi.org/10.15184/aqy.2021.18.

Severo, Marta, and Sarah Gensburger. 2024. "Collecting Traces of the Outside World: An Alternative Collective Memory of the Lockdown." *International Journal of Heritage Studies* 30 (4): 385–403. https://doi.org/10.1080/13527258.2024.2303114.

SoGlos. 2020. "'Dinosaurs' Discovered in Stroud." 2020. https://www.soglos.com/news/family/dinosaurs-discovered-in-stroud/15344/.

Stoertz, Cathy. 2010. "US7GR LOC 349 3041 - One Saturday Afternoon on the Home Front." In *Landscapes through the Lens: Aerial Photographs and Historic Environment*, edited by David C. Cowley, Robin A. Standring and Matthew J. Abicht, 247–52. Oxford: Oxbow Books.

Valenzuela, Daniela, and Persis B. Clarkson. 2014. "Geoglyphs." In *Encyclopedia of Global Archaeology*, 3017–29. New York, NY: Springer New York. https://doi.org/10.1007/978-1-4419-0465-2_1625.

Wikipedia. 2026. "Selsley." 2026. https://en.wikipedia.org/wiki/Selsley.

Publications of Interest:

April to September 2026

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A collection of 109 recent articles that may be of interest to the aerial archaeology community. The time period covered is from April to September 2026.

Introduction

The following collection of 109 articles published between April and September 2026 may be of interest to the aerial archaeology community. A few articles that were missed by the previous compilation have also been included.

Articles were identified using various search engines (lens.org, Google Scholar, Google Scholar Labs) and the online tables of contents of key archaeological journals (*AARGnews*, *Antiquity*, *Archaeological Prospection*, *Journal of Field Archaeology* and *Journal of Archaeological Science*). It is not guaranteed to be an exhaustive search of the literature published during this period; nevertheless it provides an indication of the scope of recent research in the field.

For convenience, the articles have been classified into the six subject areas that were used in previous compilations together with a new area of *Datasets and Software*. Inevitably, many articles span one or more areas. The seven subject areas are:

- AI and Machine Learning;
- Lidar and UAV-Based Surveys;
- Satellite Imagery and Synthetic Aperture Radar;
- Aerial Photographs and Photogrammetry;
- GIS and Landscape Mapping;
- Miscellaneous and Interdisciplinary Studies;
- Datasets and Software.

Each article includes a brief AI assisted summary along with a hyperlink to the published version of the article.

Commentary

The publications included in this collection demonstrate the breadth and continuing development of aerial archaeology and archaeological remote sensing. Although the bibliography is not exhaustive and cover a snapshot of activity, its coverage illustrates a discipline increasingly concerned not only with discovering archaeological features, but also with understanding wider landscapes, reconstructing past environments, monitoring heritage threats and developing reproducible analytical methods.

Artificial intelligence and machine learning feature prominently, particularly in automated detection and classification of archaeological remains in satellite imagery and lidar datasets. The growing integration of deep learning with multispectral imagery, synthetic aperture radar, and airborne laser scanning offers opportunities to identify subtle, buried or vegetation-obscured features across extensive areas. Particularly noteworthy are studies mapping ancient irrigation networks across central Iraq, identifying nearly 11,000 burial sites in Qatar, and reassessing megalithic distributions in Iberia using airborne laser scanning. These demonstrate how remote sensing can substantially expand existing inventories, while also highlighting the continuing importance of ground verification, uncertainty assessment and expert interpretation.

Lidar and UAV-based surveys remain central to the literature, with applications ranging from detailed architectural recording and erosion monitoring to the investigation of fortified settlements and woodland archaeology. Historical aerial photography also continues to generate new discoveries, including a possible monumental Persian garden in Iran and previously undocumented prehistoric and Roman monuments in Britain and Spain. The combination of historical imagery with contemporary satellite data, photogrammetry, geophysical survey and GIS is particularly valuable for reconstructing landscapes that have been obscured by subsequent development or environmental change.

Geographically, the research spans Europe, the Middle East, Central and East Asia, Africa, Australasia and the Americas (Figure 1). Its chronological scope is equally broad, extending from Palaeolithic landscapes and Neolithic monuments through Bronze Age settlements, Roman and medieval landscapes, and into the archaeology of the Second World War and Cold War. Several contributions extend conventional conceptions of aerial archaeology, addressing submerged cultural heritage, archaeological damage in conflict zones, climate-related risks and the documentation of contemporary conflict. The investigation of Soviet wartime airstrips using lidar and historical aerial photography is a particularly interesting

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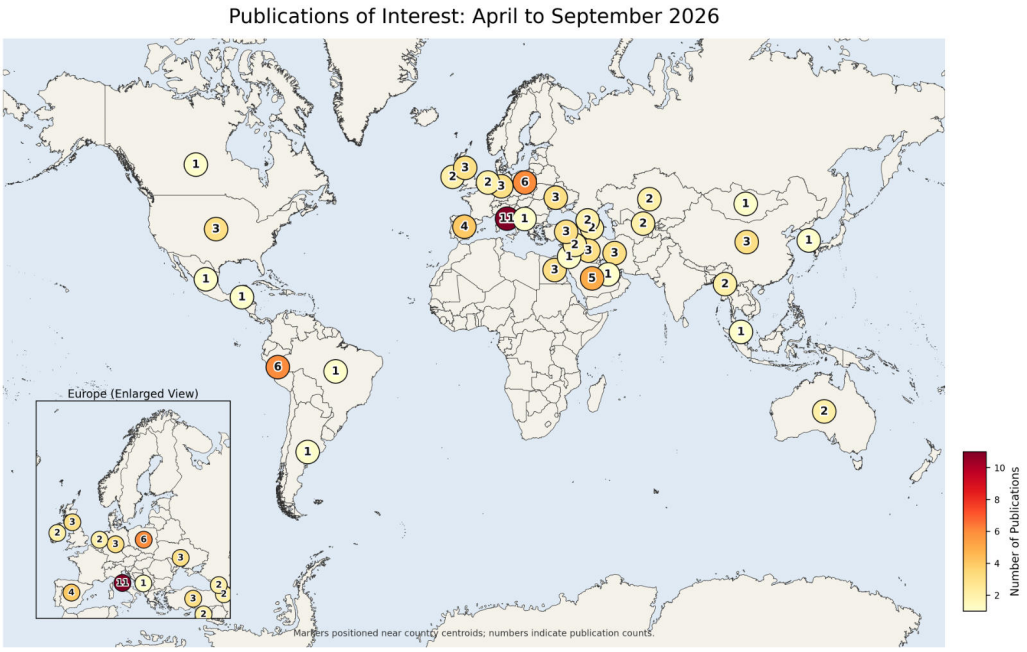


Figure 1. Geographical distribution of locations covered by the Publications of Interest (April to September 2026). Markers are positioned near country centroids; numbers indicate publication counts. Basemap: Natural Earth country boundaries (public-domain data) accessed through https://github.com/datasets/geo-countries.

example of how aerial archaeological methods can illuminate relatively recent military landscapes.

Finally, the addition of a *Datasets and Software* category reflects the growing importance of accessible tools and reusable digital resources. Developments such as the *ArqPy* preprocessing toolbox, the *Mustatil* AI–GIS platform and the *S.A.D.A.* application seek to make increasingly sophisticated analytical methods available to researchers. Alongside these advances, contributions on methodological standards, data preservation, accessibility and the interpretation of AI-generated results remind us that technological progress must be accompanied by critical evaluation and sustainable research practices.

Taken together, these publications suggest that aerial archaeology is increasingly integrated with data science, environmental research and heritage management. The challenge for the discipline is to ensure that the growing scale and sophistication of remote-sensing analysis continue to produce archaeologically meaningful interpretations, rather than simply larger datasets and longer inventories of potential features.

Articles Published between April and September 2026

1. AI and Machine Learning

A comprehensive review on YOLO-based approaches for detecting small objects in aerial and satellite images
Saravanan, S. and Deivalakshmi, S., *Remote Sensing Applications: Society and Environment*, **43**, 102152, (2026)
https://doi.org/10.1016/j.rsase.2026.102152
Summary: Detecting small objects in aerial and satellite images is difficult because they are often unclear or obscured by complex backgrounds. Accurate detection supports applications such as traffic monitoring, emergency response, defence and farming. YOLO (You Only Look Once) is popular for its speed and simplicity, but early versions struggled with small objects. Newer models improve feature extraction, multi-scale information and attention. This review compares recent approaches by design, accuracy and real-world performance, summarising progress and future research directions.

AI-Driven Earth Observation for Monitoring Archaeological Looting: Advances, Opportunities, and Future Directions
Agapiou, A., Ioannides, M., Baker, D., Omer, B., Kerep, A., and Bartette, T., *2026 IEEE Mediterranean and Middle-East Geoscience and Remote Sensing Symposium (M2GARSS)*, 121–125, (2026)
https://doi.org/10.1109/M2GARSS67833.2026.11582390
Summary: Illicit excavation causes irreversible damage and information loss at archaeological sites. Advances in satellite Earth Observation (EO) and Artificial Intelligence (AI) now support near-continuous detection and monitoring using high-revisit optical imagery (e.g., PlanetScope and Sentinel-2), synthetic aperture radar (e.g., Sentinel-1), deep change detection, temporal modelling and multimodal fusion. This paper reviews AI-driven EO approaches to identifying and analysing looting, their technical implications, and future directions for transparent, scalable and globally accessible heritage monitoring.

Automated Feature Extraction and Classification of Submerged Cultural Heritage Assets in the Puck Lagoon via Multisensor Remote Sensing
Janowski, Ł., Pydyn, A., Popek, M., Kotarba-Morley, A.M., and Tysiąc, P., *Archaeological Prospection*, **33**(2), 397–421, (2026)
https://doi.org/10.1002/arp.70024
Summary: This study combines multibeam echosounder and airborne lidar bathymetry with object-based image analysis and fuzzy classification to detect submerged cultural heritage in shallow water. Of 57 anomalies identified in Puck Lagoon and checked by divers, 42% were confirmed as heritage assets, including a Second World War aircraft crash site. Principal component analysis reduced the feature space to two components explaining 61.7% of variance, while vector

ruggedness and mean lidar intensity were the strongest classifiers. Fuzzy rules accounted for overlapping values and uncertainty, improving reliability. The open, non-invasive framework supports heritage management but requires site-specific recalibration for different environmental conditions.

Best practices for the application of computer vision-based machine learning in archaeology
Berganzo-Besga, I., Orengo, H.A., and Lumbreras, F., *Journal of Archaeological Science*, **191**, 106577, (2026)
https://doi.org/10.1016/j.jas.2026.106577
Summary: This paper outlines seven best practices for archaeological computer vision: data sourcing, preprocessing, algorithm selection, training, post-processing, validation and ethical communication. Case studies show how they address opaque models, limited training data, sparse contexts and false positives. Shared responsibility among authors, reviewers and the wider community can improve implementation and confidence in model-derived knowledge.

Deep Learning Enables the Automatic Mapping of Tell Sites on Satellite Synthetic Aperture Radar Products
Chiricallo, E., Poggi, G., Ferro, S., Vascon, S., and Traviglia, A., *Remote Sensing*, **18**(13), 2255, (2026)
https://doi.org/10.3390/rs18132255
Summary: This study presents a YOLOv8-Seg pipeline using Sentinel-1 SAR and Copernicus DEM data to detect and segment archaeological tell sites in central Iraq. It achieved average precision of 0.495±0.010 and pixel-wise Intersection over Union of 0.361±0.048, reliably mapped known sites, and identified previously unmapped candidates. Testing in Iran showed promising transferability but required regional fine-tuning for morphological and environmental differences, establishing a baseline for SAR-based archaeological prospection.

Extraction and spatiotemporal variation in rammed earth sites in typical arid areas of Northwest China based on multi-source remote-sensing data
Cui, K., Yu, L., Zhang, X., Dai, S., Dang, X., Xu, J., *et al*., *International Journal of Remote Sensing*, **47**(3), 1313–1344, (2026)
https://doi.org/10.1080/01431161.2025.2605793
Summary: This study integrates multi-source remote sensing, machine learning and spatiotemporal modelling to map and predict risks to degraded rammed-earth heritage in arid Northwest China. Among OBIA-CNN, MEDPSO and U-Net, OBIA-CNN performed best (OA 97.46%; Kappa 0.95), reducing noise and preserving structural continuity; U-Net achieved high recall (0.9731) but over-segmented boundaries. Markov-PLUS simulations for four sites to 2056 identified land-cover changes and high-risk zones, providing a framework for proactive conservation.

Illumination-Invariant Anomaly Detection for Sub-Canopy UAV Multispectral Point Clouds
Chen, L., Gu, Y., and Li, X., *arXiv*:2606.09111. (2026)
https://doi.org/10.48550/arXiv.2606.09111
Summary: This study presents a prior-free framework for detecting anomalies in UAV multispectral point clouds under uneven sub-canopy illumination. It estimates solar angle by combining spectral indices with ray tracing to distinguish dark objects from shadows, then uses illumination-consistent sparse representation based on similarly lit neighbouring points to reduce spectral distortion. The method outperformed leading baselines in separating anomalies from forest backgrounds and can support detection of camouflaged targets, fallen trees and archaeological remains beneath dense foliage.

Intelligent identification of silo-cave traditional residences in the Chinese Loess Plateau based on deep learning
Jiang, D., Zhang, L., Chen, P., Luo, R., Wang, Z., and Lu, P., *Journal of Archaeological Science*, **192**, 106625, (2026)
https://doi.org/10.1016/j.jas.2026.106625
Summary: This study uses Google Earth imagery and deep learning to identify endangered silo-cave dwellings across the Chinese Loess Plateau, overcoming the limits and risks of field surveys. MobileNet outperformed Faster R-CNN, SSD, RetinaNet and YOLO in model size, speed and accuracy, while a Cascading Tile Inference Algorithm improved edge recognition. Results show dispersed settlements with local clusters alongside modern buildings, demonstrating a scalable method for surveying and conserving this heritage.

Leveraging Big Multitemporal Multisource Satellite Data and Artificial Intelligence for the Detection of Complex and Invisible Features: The Case of Extensive Irrigation Mapping
Buławka, N., Orengo, H.A., Ruiz, F.L., Berganzo-Besga, I., and Gupta, E., *Archaeological Prospection*, Early View, (2026)
https://doi.org/10.1002/arp.70053
Summary: This study combines multitemporal Landsat 5, Sentinel-1 and Sentinel-2 imagery with TanDEM-X elevation data and deep learning to map ancient levees across central Iraq. Of the U-Net, Attention U-Net and Swin UNETR models tested, Swin UNETR performed best on a 48-band dataset with manually digitised labels; post-processing achieved vector precision of 0.7554 and recall of 0.7743. The model mapped potential levee networks across 31,250 km², including 13,680 km beyond the training area, and detected patterns associated with archaeological sites from several periods. Although expert interpretation remains essential, the approach provides reproducible, scalable support for regional irrigation reconstruction and heritage management.

Theory and practice of artificial intelligence in archaeology
Orengo, H.A., Berganzo-Besga, I., and Lumbreras, F., *Journal of Archaeological Science*, **190**, 106571, (2026)
https://doi.org/10.1016/j.jas.2026.106571
Summary: Machine learning is increasingly used in archaeology, supported by open data, improved infrastructure and advances in detection, classification and segmentation. However, apparent methodological efficiency can obscure archaeological constraints, including scarce and imbalanced training data, variable and dispersed features, and heterogeneous backgrounds. Because archaeological objects are observed through proxies, models learn how these proxies are labelled and sampled rather than the features themselves, affecting bias, transferability, interpretability and overfitting. The paper offers a practice-oriented framework that integrates domain expertise with ML to enable scalable, transparent and testable inference while maintaining methodological accountability.

2. Lidar and UAV-Based Surveys

A Geomorphometric Approach to Estimate the Deterioration of Earthen Archaeological Sites by Rainfall and Diffusion Processes: The Huaca Chornancap (Eighth–14th Century ad), Lambayeque, Peru
Magnini, L., Apa, M.I.P., Cachay, R.G., Manayalle, M.F., Torre, C.E.W.L., and Ventura, G., *Archaeological Prospection*, **33**(3), 607–620, (2026)
https://doi.org/10.1002/arp.70041
Summary: UAV photogrammetry and a Digital Surface Model were used to assess rain-driven erosion at Huaca Chornancap, an eighth–14th-century platform in Peru exposed to ENSO rainfall. Rills and gullies affect its steep flanks, pits its flat top, and rain-induced slides its western side. Modelling predicts diffusive erosion over the next century, with vertical rates of 0.33 m/century from ENSO rainfall, 0.13 m/century from splash erosion and under 0.25 m/century from diffusion. The findings highlight threats to the site's structural integrity and offer a method applicable to earthen archaeological sites worldwide.

Airborne LiDAR and Relief Model Visualisation in the Archaeological Landscape of Parion
Malgil, İ., *Ancient Civilizations from Scythia to Siberia*, **31**(2), 203–226, (2026)
https://doi.org/10.1163/15700577-20252937
Summary: This study presents the results of a UAV-based lidar survey at Parion, a Roman colonial city in the Troad, integrated with earlier excavation, photogrammetry, and geophysical datasets. With a density of 796 points/m^2, the lidar survey revealed micro-topographic anomalies invisible to traditional survey techniques. The ability of lidar to penetrate vegetation added another critical advantage, exposing features that would otherwise remain hidden beneath surface cover. Relief visualisation techniques, including the local relief model (LRM), local dominance (LD) and sky-view factor (SVF), revealed traces of possible buildings, terracing systems, and wall alignments in various parts of the city. By combining multi-scalar digital approaches, this research highlights the potential of lidar for reconstructing spatial organisation and urban development in complex landscapes.

ALS Development and the Quest for a Single Image: Reflections Inspired by the TRAIL Workshop
Malina, O., *AARGnews*, **72**, 27, (2026)
https://aargonline.com/wp/wp-content/uploads/2026/04/AARGnews72.pdf#page=27
Summary: Supported by a bursary from the AARG Fund to attend the 2025 TRAIL Workshop held in Postojna (Slovenia), the author discusses the impact of Artificial Intelligence on lidar feature detection, the challenges of maintaining consistency and quality amid technological change, and the need for stable visual reference images. The importance of interpretation in turning technical advances into meaningful archaeological stories is emphasised.

Białowieża Forest and its archaeological heritage
Wawrzeniuk, J., Jakubczak, M., Kittel, P., Krasnodębski, D., Kruczkowska, B., Krupski, M., *et al*., *Antiquity*, **100**(412), e38, (2026)
https://doi.org/10.15184/aqy.2026.10349
Summary: Białowieża Forest in eastern Poland preserves a landscape largely unaffected by recent human activity. A multidisciplinary study combining airborne and surface surveys, excavations and palaeoenvironmental analysis confirms episodic human activity in the area over the past 10 000 years, providing a methodological foundation for future research and heritage conservation.

Combination of GPR, Mobile Mapping LiDAR and UAV-SfM for Generating a Thorough Site Investigation of the Late-Medieval Church Ruin of Gotthardsberg (Bavaria, Germany)
Linck, R., Stele, A., and Wendland, S., *Archaeological Prospection*, Early View, (2026)
https://doi.org/10.1002/arp.70057
Summary: This study combines GPR with mobile-mapping lidar and UAV photogrammetry to investigate a medieval church ruin in north-western Bavaria. Integrating subsurface anomalies into the 3D point cloud clarifies relationships between standing and buried remains, particularly on difficult terrain. The study also compares remote-sensing methods for historic buildings and evaluates the accuracy of several UAV models and a mobile laser scanner.

Contact zone, desertion, or endurance? A spatial digital humanities approach to interpreting Irish medieval settlements
McAlister, V. and Immich, J.L., *Digital Scholarship in the Humanities*, **41**(3), 1813–1829, (2026)
https://doi.org/10.1093/llc/fqag018
Summary: The HELM project combines historical accounts, fieldwork and UAV remote sensing to locate and analyse seemingly vanished medieval Irish settlements. Digital models reveal subtle building remains and support adaptable hypothesis development. At Fore, County Westmeath, contextual analysis of sparse remains suggests settlement endurance and resilience, while showing how ordinary people navigated a medieval contact zone between two ethnic identities.

Cutting Through the Green: A Case for Grassland Archaeology Using UAV Multispectral Data
Emaus, R., *Archaeological Prospection*, **33**(2), 327–337, (2026)
https://doi.org/10.1002/arp.70027
Summary: This study used a Parrot Sequoia multispectral camera at a known site near Raalte to assess how grassland management affects archaeological vegetation-mark visibility. Four missions produced RGB, NDVI and simple-ratio datasets. Marks appeared in RGB only in August, but in NDVI and simple-ratio imagery in June and August, shortly after mowing; none were visible at peak grass growth. The results show that survey timing within the mowing cycle is critical for archaeological prospection in Dutch meadows and pastures.

De Irunzabal a Roncesvalles: toponimia vascófona y evidencia LiDAR de un gran recinto militar romano en Navarra (From Irunzabal to Roncesvalles: Basque toponymy and LiDAR evidence of a large Roman military enclosure in Navarre)
Echegaray Agara, M., (2026)
https://doi.org/10.5281/zenodo.20456639
Summary: This paper examines two ~27 ha artificial enclosures at Irunzabal and Muruzabal in Navarre, whose scale, Roman military features and strategic locations suggest route-control and territorial functions. A nine-criterion model combines lidar, aerial photographs (1927–2025), medieval records and archaeological evidence. Three first-century AD burials with pila near Irunzabal indicate legionary presence, probably at least a cohort. Rectilinear boundaries and descriptive Basque place-names may also help identify major ancient structures. All interpretations remain graded working hypotheses requiring archaeological verification.

Exploring Drone Technology for the Survey and Documentation of Aerospace Archaeology Sites
Morgan, D. and Allen, T., *2026 Regional Student Conferences*, AIAA 2026-111409, (2026)
https://doi.org/10.2514/6.2026-111409
Summary: This pilot study used a DJI Mini 4 Pro to document Nike Park, a former Cold War missile site in Carrollton, Virginia, and create 3D models of its supply/PX building and Nike Ajax missile for a museum exhibit. Circular flights provided broader coverage and a detailed building model but caused redundant imagery and zoomed-out rendering issues; lawnmower flights captured more missile detail but missed one tail fin. Automating the circular route could improve consistency and accuracy. The study demonstrates drones' value for aerospace archaeology, preservation, interpretation and education.

From Lost Trenches to Living Data: Using UAV-Mounted LiDAR to Relocate and Contextualize Legacy Excavations at Saqsaywaman, Cusco, Peru
Berquist, S., Abate, N., Masini, N., and Vranich, A., *Archaeological Prospection*, **33**(3), 785–802, (2026)
https://doi.org/10.1002/arp.70051
Summary: This study uses UAV-mounted lidar and archival sources to relocate and recontextualise legacy excavations at Saqsaywaman, Peru. A 69 ha survey detected subtle traces obscured by vegetation and erosion, enabling over two dozen poorly documented trenches to be relocated with submetre accuracy. Integrating these results with historic maps, imagery, reports, oral histories and ground checks clarified occupation sequences and revealed previously unrecognised architectural and hydraulic features. The replicable workflow helps prevent redundant excavation and supports cumulative, sustainable research at long-investigated sites.

Integrated TLS-UAV Workflow for HBIM Generation in Heritage Documentation
Bac-Bronowicz, J., Piech, I., and Wojciechowska, G., *Remote Sensing*, **18**(6), 857, (2026)
https://doi.org/10.3390/rs18060857
Summary: This study integrates terrestrial laser scanning and UAV photogrammetry to generate heritage-building digital twins for HBIM and HGIS. Applied to a historic wooden church, the workflow produced more complete, geometrically robust models than UAV data alone, with dimensional differences of 0.8–3.2 cm. It standardises acquisition, scaling and point-cloud fusion, links LOD 100–300 HBIM models to conservation needs, and identifies opportunities for AI-assisted classification, segmentation and 2D-to-HBIM conversion. The approach supports accurate, reproducible heritage documentation and spatial–historical analysis.

Integrating LiDAR, GIS, and deep geologic testing to predict buried archaeological components in the Hartville Uplift, Wyoming
Allaun, S.A., Surovell, T.A., and Weathermon, R.L., *Journal of Archaeological Science*, **189**, 106547, (2026)
https://doi.org/10.1016/j.jas.2026.106547
Summary: This study integrates lidar-derived elevation modelling, GIS landform analysis and deep geologic testing to locate buried late Pleistocene–early Holocene sites in Wyoming's Patten Creek Valley. Trenching and dating showed that main-valley terraces are late Holocene, whereas valley-margin fans and loess-mantled slopes preserve intact 13.5–8.3 ka cal BP paleosols suited to Paleoindian archaeology. Finds in comparable deposits at nearby Broom Creek validated the model, indicating that targeted survey of these valley-margin settings offers a robust strategy for finding deeply buried sites.

LiDAR-Assisted Survey Locates Unregistered Rock Shelters in the Blue Mountains, Australia
Bongers, J.L., Brennan, W., Wilkins, E., Roach, L., Nutman, E., Lehner, J.W., *et al*., *Remote Sensing*, (2026)
https://doi.org/10.3390/rs18203495
Summary: This study combines UAV and public airborne lidar, GIS modelling and field survey to locate rock shelters in Australia's Blue Mountains. Ground checks confirmed six known shelters, improved their coordinates and identified three unregistered sites with rock art and lithics. The method can refine legacy records and improve regional surveys and heritage management.

Maya Pottery Red: Hue as a Perceptual Prior for Object Detection in UAV-Based Areal Survey
Britton, B., McLellan, A., and Dunning, N., *Remote Sensing*, **18**(11), 1836, (2026)
https://doi.org/10.3390/rs18111836
Summary: Detecting fingernail-sized Maya pottery sherds in UAV imagery is difficult because they resemble surrounding soil. Tests in Belize showed that embedding their reddish hue in an end-to-end Hue-Weighted Loss Function caused training collapse under severe class imbalance by suppressing geometric learning. A staged method instead generated candidates with a transformer detector, then applied hue constraints from 16-bit HSV data. This reduced 177,148 candidates to 1,647 (99.1%) while retaining 97.8% of targets (F1 = 0.731), showing that chromatic priors work better as post-inference filters than training signals.

Military landscapes of the Khangai: drone mapping of three fortification complexes at Khan Khögshin, Mongolia
McCarthy, C., Hoshino, B., Phillips, S., Torguud, U., Sternberg, T., Konagaya, Y., et al., *Asian Archaeology*, **10**(1), 75–87, (2026)
https://doi.org/10.1007/s41826-026-00124-7
Summary: Drone imagery and orthomosaic analysis documented three large fortification complexes in Mongolia's Khangai range near a 13th-century military camp linked to Khubilai Khan. First noted by P.K. Kozlov in the 1920s, the 198,000–720,000 m² complexes have square plans adapted to hilly terrain, regularly spaced pits, stone-lined trenches and varied entrances, indicating sophisticated planning. Comparisons with Inner Asian fortifications provide a basis for further study of their date, function and regional significance.

Modelling Climate Change Risk to Archaeological Sites in Donegal Bay (Ireland)
Pollard, E., Curran, S., and Shaw, R., *AARGnews*, **72**, 46, (2026)
https://aargonline.com/wp/wp-content/uploads/2026/04/AARGnews72.pdf#page=46
Summary: Climate-driven erosion increasingly threatens coastal archaeology. An AARG Fund-supported 2025 UAV survey at St. John's Point and Doorin Point, within a wider programme recording over 350 features, mapped about 30 vulnerable sites at six locations using orthomosaics and DEMs. These include medieval and intertidal harbours, a possible slag heap, a retreating ringfort, a promontory fort, cairns and a hut site. The high-resolution baseline enables future erosion monitoring and supports management of vulnerable coastal heritage.

Monocular Depth Estimation from UAV Images for 3D Documentation of Architectural Heritage: A Depth Anything V2-Based Approach
Chiabrando, F., Gallitto, F., Lingua, A.M., Manca, S., Martino, A., Matrone, F., et al., *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, **XLIX-B4-2026**, 679–686, (2026)
https://doi.org/10.5194/isprs-archives-XLIX-B4-2026-679-2026
Summary: This study tests Depth Anything V2 for monocular depth estimation in UAV-based heritage documentation using MDE4BH, a benchmark of over 3,000 images from ten varied sites. Photogrammetric depth maps supported calibration, validation and retraining. Scene-rescaled relative models performed acceptably in several subsets, but the metric model showed bias and scale collapse from domain shift. Two-stage fine-tuning on oblique, then oblique and nadir views improved bias and metric stability, although structured errors remained near boundaries, complex roofs and radiometrically varied surfaces. Accuracy remains insufficient for demanding metric work, but MDE can support interpretation, scene understanding and navigation where precise geometry is unnecessary.

Over 20,000 precolonial earthworks in the Southwest Amazonia
Pärssinen, M., Kalliola, R., Ranzi, A., Puttonen, E., Lopes, R.C., Virtanen, P.K., *et al*., *Nature*, **657**(8131), 420–425, (2026)
https://doi.org/10.1038/s41586-026-10835-7
Summary: Lidar surveys covering 4,430 km of flight revealed that southwestern Amazonia contains as many precolonial geometric earthworks as previously estimated for the whole Amazon region. The authors estimate a population of 1.25–3 million people in AD 100–300, suggesting that the scale of precolonial Amazonian settlement and its long-term environmental impacts may need substantial reassessment.

Prospecting of Architectural Features Using LiDAR-UAV Technology, Deep Neural Networks and Visualization Techniques: A Case Study in Kuélap and Cambolín (NW Peru)
Zabaleta-Santisteban, J.A., López, R.S., Medina-Medina, A.J., Tuesta-Trauco, K.M., Rivera-Fernandez, A.S., Noriega-Salazar, N.M., *et al*., *Archaeological Prospection*, **33**(3), 621–646, (2026)
https://doi.org/10.1002/arp.70033
Summary: This study combines 0.5 m UAV-lidar terrain models, 17 visualisation techniques and Mask R-CNN to detect Chachapoya architecture at Kuélap and Cambolín in north-western Peru. Colour relief image mapping performed best, with average precision of

71.89% at Kuélap and 43.54% at Cambolín. The model detected 137 of 185 reference structures at Kuélap and 53 of 73 at Cambolín, showing that visualisation and deep learning can complement manual prospection in densely vegetated, complex terrain.

Quebrada del Oso: a Chimú agricultural production centre in the Chicama Valley, north coast of Perú
Tavera-Medina, C., Tantaleán, H., Stanish, C., Quispe-Baquedano, J., Huachaca, D., Roman, J., *et al*., *Antiquity*, **100**(410), e22, (2026)
https://doi.org/10.15184/aqy.2025.10261
Summary: Recent research at the Chimú site of Quebrada del Oso in the Chicama Valley, Peru indicates that the site functioned as a pre-Hispanic agricultural centre. This finding is relevant to debates about the nature and viability of the Chicama-Moche canal built by the Chimú state around the eleventh century AD.

Reassessing Megalithic Spatial Densities in Southwestern Iberia Through Airborne Laser Scanning-Based Landscape Analysis
Cerrillo-Cuenca, E., Linares-Catela, J.A., and Bueno-Ramírez, P., *Archaeological Prospection*, **33**(2), 575–601, (2026)
https://doi.org/10.1002/arp.70040
Summary: This study reassesses megalithic densities in south-western Iberia by combining regional inventories, airborne laser scanning (ALS) and uncertainty modelling. The Western Iberia Megalithic Dataset contains 3,069 sepulchres, supplemented by checked records and ALS-only anomalies classified by certainty. Case studies in the International Tagus and eastern Andévalo suggest ALS raises estimated monument totals by 35%–50%, although 35%–46% of inventoried mounds remain undetectable. ALS also revealed enclosure-like settlement features near megalithic clusters, supporting interpretations of structured landscapes and guiding targeted verification.

The Falcon's Many Nests: Material Remains of Soviet Air Forces Tactical Aviation and Ground Organization during World War II
Weber, M., *Journal of Field Archaeology*, **51**(5), 323–339, (2026)
https://doi.org/10.1080/00934690.2026.2630465
Summary: Soviet air power was crucial to Red Army operations on the Eastern Front. Combining airborne laser scanning, wartime aerial photographs and historical analysis, this study defines the archaeological footprint and traces the organisation and development of tactical field airstrips during two late-war offensives in Poland. It offers a new view of 20th-century aerial combat distinct from bombardment crater-scapes and permanent air-defence remains.

TRAIL 2025 – Airborne Laser Scanning for Archaeology in Farmed Landscapes
Basuau, N., Dorfner, K., Németh, M., and Vilarinho, G., *AARGnews*, **72**, 24, (2026)
https://aargonline.com/wp/wp-content/uploads/2026/04/AARGnews72.pdf#page=24
Summary: The authors received support from the AARG Fund to attend the 2025 TRAIL meeting in Slovenia, where they participated in a collaborative and informative workshop. The event brought together archaeologists, students, and professionals to learn about processing, analysing and interpreting Airborne Laser Scan data. Training included using QGIS plug-ins for automated feature detection in open, farmed landscapes complementing traditional woodland surveys.

Under-Canopy Archaeological Mapping Using LiDAR Data and AI Methods
Mazzacca, G. and Remondino, F., *Heritage*, **9**(4), 134, (2026)
https://doi.org/10.3390/heritage9040134
Summary: This study presents a multi-level, multi-resolution machine/deep-learning method for generating Digital Feature Models from ALS and UAV-lidar point clouds through semantic segmentation. It compares approaches and resolutions using quantitative and qualitative tests at three manually annotated Mediterranean and Alpine sites, while considering hardware and time constraints.

Understanding Fortress-Cities: High-Resolution LiDAR Mapping of Samshvildé, South Caucasus, Republic of Georgia
Berikashvili, D., Field, S., and Kuijt, I., *Archaeological Prospection*, **33**(3), 647–657, (2026)
https://doi.org/10.1002/arp.70042
Summary: Airborne lidar at medieval Samshvildé, Georgia, revealed an undocumented lower fortress, defensive towers and water channels, challenging Citadel-focused interpretations. The study highlights lidar's value in vegetated, multi-period landscapes while emphasising the need for ground verification and architectural analysis.

Unmanned Aerial Systems and an Archaeology of Accessibility
Armstrong, G., *Advances in Archaeological Practice*, **14**(3), 508–521, (2026)
https://doi.org/10.1017/aap.2026.10160
Summary: Remote sensing has transformed archaeological data collection, but its implications for field safety and accessibility remain underexplored. UAS can improve mobility, task planning and community-engaged research for disabled archaeologists. The paper argues that UAS and wider archaeological practices should be designed to improve accessibility and labour management across the profession.

When You Have Eliminated the Impossible…
Deegan, A., *AARGnews*, **72**, 38, (2026)
https://aargonline.com/wp/wp-content/uploads/2026/04/AARGnews72.pdf#page=38
Summary: A tiny cluster of at least 15 small circular platforms were discovered on lidar imagery of the open moorland in the north of England. Without the benefit of ground investigation, the working hypothesis is that they are platforms or stances for timber houses, possibly Bronze Age. However, unenclosed platform settlements are very scarce in the north of England, so could there be an alternative explanation?

3. Satellite Imagery and Synthetic Aperture Radar

A major city of the Kazakh Steppe? Investigating Semiyarka's Bronze Age legacy
Radivojević, M., Lawrence, D., Merz, V.K., Merz, I.V., Demidkova, E., Woolston-Houshold, M., *et al*., *Antiquity*, **100**(410), e19, (2026)
https://doi.org/10.15184/aqy.2025.10244
Summary: Occupied from around 1600 BC and linked to the Cherkaskul and Alekseevka-Sargary cultures, Semiyarka is a newly identified 140ha Late Bronze Age settlement in north-eastern Kazakhstan. The site represents a unique settlement with planned architecture—including a central monumental structure—low-density pottery scatter and evidence for organised tin-bronze production.

Agricultural Infrastructure Detection Through Multispectral Satellite Remote Sensing and PeruSAT-1 Images in Huarochirí, Peru
Oré Menéndez, G., *Journal of Archaeological Method and Theory*, **33**(2), 14, (2025)
https://doi.org/10.1007/s10816-025-09742-4
Summary: This study uses multispectral satellite remote sensing to detect pre-Hispanic and colonial agricultural fields and terraces abandoned or reshaped after Spanish resettlement in the Central Andes. A four-step sequential-targeting workflow combining elevation, slope and vegetation indices narrowed the search across nearly 255 km^2 around San Andrés de Tupicocha, Peru. Integrating PeruSAT-1

imagery with archaeological, historical, geographic and community evidence showed that about 22% of the area contains detectable agricultural infrastructure. The replicable method reduces survey, computational and technical demands in challenging Andean terrain.

Ancient Burial Mounds Detection in the Altai Mountains with High-Resolution Satellite Images
Chen, F., Jin, L., Bourgeois, J., Zuo, X., Van de Voorde, T., Gheyle, W., et al., *Remote Sensing*, **18**(2), 185, (2026)
https://doi.org/10.3390/rs18020185
Summary: This study compares deep-learning object detectors using convolutional and Transformer backbones to identify small kurgans in high-resolution satellite imagery of the Altai Mountains. Larger models performed best, while class-imbalance techniques further improved standard methods. The results show that automated detection can support surveys and help build a comprehensive kurgan inventory for preservation as global warming threatens permafrost sites.

Archaeological Damage Assessment in Conflict Zones: Integrating Satellite Imagery and Ground Surveys in Daraa, Syria
Al Kassem, A., Hopper, K., Ibraheem, I.M., Maier, A., Nassrallah, M.K., and Richter, J., *Archaeological Prospection*, **33**(2), 371–396, (2026)
https://doi.org/10.1002/arp.70026
Summary: Satellite remote sensing is an efficient, cost-effective method for identifying and documenting archaeological sites, particularly in conflict zones. In Daraa, southern Syria, freely available high-resolution imagery helped document 196 sites. However, ground-truthing at 28 sites revealed significant discrepancies, highlighting the complementary value of remote sensing and fieldwork. Their integration improves damage assessment and helps prioritise sites for protection or excavation. Field visits identified urgent excavation needs, particularly where looting pits exposed stratigraphy that satellite imagery alone could not verify. Engaging local communities and understanding environmental and social conditions further enhance the effectiveness of this integrated approach.

Back to Armenia
Palmer, R., *AARGnews*, **72**, 41, (2026)
https://aargonline.com/wp/wp-content/uploads/2026/04/AARGnews72.pdf#page=41
Summary: After a break of over 20 years, new data (including Google Earth and declassified HEXAGON satellite photographs) provides the opportunity to complete an unfinished project to identify and map, from above, the archaeological content in a small part of Armenia.

Can Spectral Anomalies in Sentinel-2 Imagery Be Used as a Proxy for Archaeological Prospection? A Demonstration on Roman Age Sites in Italy
Corbo, A., Jaia, A.M., and Tapete, D., *Land*, **15**(5), 753, (2026)
https://doi.org/10.3390/land15050753
Summary: This study introduces an accessible method for archaeological prospection using pixel-level reflectance values and spectral variations in open-access Sentinel-2 imagery. Tested at two Roman sites in Italy, Telesia Vetere and Podere Colle Agnano, the method identified consistent seasonal spectral anomalies associated with known buried remains, as well as potential previously undocumented structures. Its ease of use and reliance on freely available data make it a valuable tool for guiding further remote sensing investigations and targeted field surveys, particularly in preventive archaeology.

Coherence-Gated Wrapped-Phase InSAR With Matrix-Based Uncertainty Diagnostics for Burial-Mound Hotspot Ranking (Sicily, Italy)
Polverino, S., Ahmadnia, H., and Rahbarianyazd Ahmadnia, R., *Archaeological Prospection*, **33**(3), 675–690, (2026)
https://doi.org/10.1002/arp.70044
Summary: This study applies multiepoch Sentinel-1 InSAR and machine-learning classification to detect burial mounds and disturbance hotspots at the Manicalunga–Timpone Nero necropolis near Selinunte, Sicily. By combining four observation epochs from 2014–2025, the method distinguishes persistent archaeological anomalies from temporary surface changes in cultivated landscapes. The approach supports archaeological prospection and conservation management by identifying areas for targeted field verification and prioritising monitoring, while explicitly acknowledging limitations in satellite visibility.

Detectability of Looting Holes in Very High-Resolution SAR Images
Boyoğlu, C.S., Balz, T., and Caspari, G., *Archaeological Prospection*, Early View, (2026)
https://doi.org/10.1002/arp.70064
Summary: This study evaluates very high-resolution TerraSAR-X imagery for detecting small looting holes at archaeological sites, using controlled experiments and validation at the ancient city of Zeugma. Results establish practical detection thresholds and highlight the influence of spoil heap positioning, demonstrating SAR's potential for identifying early-stage looting and supporting timely heritage protection.

Finding the Features with LiDAR and SAR: Automated Detection of Archaeological Earthworks at Cahokia
Vilbig, J.M., Sagan, V., Jilek, J.A., and Gul, C., *Remote Sensing*, **18**(13), 2229, (2026)
https://doi.org/10.3390/rs18132229
Summary: This study presents a semi-automated workflow combining lidar and SAR data to detect archaeological earthworks at Cahokia Mounds, Illinois. Lidar identifies mound forms, while SAR highlights edges, borrow pits and linear features. The integrated approach accelerates prospection and reduces interpretive subjectivity, offering a scalable method for archaeological landscape analysis, although human verification remains necessary.

From Satellite to Ground: An Integrated Multiscale and Multitemporal Remote-Sensing Workflow for Archaeological Prospection at Zar Tepe (1st–5th Centuries AD) in Surkhandarya, Uzbekistan
Angás, J., Uribe, P., Martínez-Ferreras, V., Iranzo, C., Gurt, J.M., Zakirov, A., *et al*., *Remote Sensing*, **18**(13), 2089, (2026)
https://doi.org/10.3390/rs18132089
Summary: This study combines satellite imagery, photogrammetry, GNSS, magnetic prospection and field verification to investigate Zar Tepe, a 1st–5th-century AD settlement in southern Uzbekistan. The integrated approach accurately relocated earlier excavation areas, cross-validated archaeological anomalies and improved understanding of the site's urban layout and occupation history.

Have We Wrapped Up the Ukraine Working Group?
Palmer, R., *AARGnews*, **72**, 29, (2026)
https://aargonline.com/wp/wp-content/uploads/2026/04/AARGnews72.pdf#page=29
Summary: Here follows an informal summary, more or less from memory, of AARG's Ukraine Working Group. It omits the three(ish) years of blood, sweat and beers spent sticking pins into Google Earth and notes some of the contributions published in AARGnews along the way. Because those pieces included archaeological illustrations, those reproduced here are some photo reading examples to offer general puzzles that many of us enjoy thinking about.

Mariwan Archaeological Survey: a systematic field project in north-west Iran
Masoumian, M., Hariri, N., Skuldbøl, T.B.B., Renette, S., Asiabani, S., Zarefar, F., *et al*., *Antiquity*, **100**(411), e25, (2026)
https://doi.org/10.15184/aqy.2025.10269

Summary: Spanning 760 km² and identifying 603 sites covering thousands of years of (pre)history, the Mariwan Archaeological Survey provides a comprehensive examination of settlement history in north-western Iran. By employing advanced survey methods and targeting previously unexplored regions, evidence and understanding of Mariwan's cultural dynamics and historical interactions is substantially enhanced.

Negotiating the Steppe: The Interplay of Hunting and Pastoralism through Central Asian Prehistory (ca. 12000-1000 BCE)
Tashmanbetova, Z., *Arts & Sciences Graduate Student Theses and Dissertations*, (2026)
https://doi.org/10.7936/3r4z-8e82
Summary: This dissertation investigates the emergence of Bronze Age pastoralism in Kazakhstan, challenging models that portray it as a straightforward replacement of hunting by herding. Using multispectral PlanetScope and Landsat satellite imagery, machine learning and Google Earth Engine, it maps ecological microenvironments across 35,000 km², demonstrating that only 3–5% of the arid steppe offers suitable conditions for human occupation. These findings reveal how resource-rich microenvironments structured settlement and subsistence, providing essential context for interpreting archaeological evidence of interactions between wild and domestic animals. Combined with zooarchaeology and biomolecular analysis, satellite remote sensing demonstrates how environmental variability shaped the development of flexible pastoral economies.

Preliminary Report from a Satellite Archaeology Perspective applied to The Surface Survey at The Abu Sidhum Site, Minya Governorate, Egypt
Micol, A., *International Journal of Multidisciplinary Studies in Heritage Research*, **9**(1), 76–94, (2026)
https://doi.org/10.21608/ijmshr.2026.494259.1064
Summary: This study investigates the Abu Sidhum site in Egypt's Minya Governorate, combining satellite imagery, AI and surface surveys. Satellite observations and fieldwork identified multi-period pottery, possible tombs, suspected buried structures and evidence of quarrying. Preliminary subsurface surveys revealed voids and tunnels, suggesting prolonged human activity. The study highlights the need for detailed archaeological investigation, documentation and site protection.

Reassessing Rujm el-Hiri: Aerial imagery and stone circles in the proto-historic Southern Levant
Birkenfeld, M., Khabarova, O., Eppelbaum, L.V., and Berger, U., *PLOS ONE*, **21**(3), e0339952, (2026)
https://doi.org/10.1371/journal.pone.0339952
Summary: Using high-resolution satellite imagery, geophysical modelling and spatial analysis, this study identifies over 30 previously undocumented circular basalt structures within 25 km of Rujm el-Hiri in the Southern Levant. Their shared architectural features and landscape settings reveal a widespread protohistoric monumental tradition, challenging the view of Rujm el-Hiri as an isolated site. Remote sensing was crucial in identifying this interconnected archaeological landscape.

Remote Sensing-Based Analysis of Archaeological Site Damage in Syria: Revisiting a Post-War Landscape
Casana, J., Clayton, J.A., Lamberth, M., and Ferwerda, C., *Heritage*, **9**(6), 209, (2026)
https://doi.org/10.3390/heritage9060209
Summary: Using high-resolution commercial satellite imagery, this study reassesses archaeological damage in Syria over the past decade, identifying mechanized looting in the north, damage from military facilities and refugee camps, and widespread small-scale looting. The findings demonstrate the value of continued satellite-based monitoring for heritage protection, stabilisation and damage assessment in conflict zones.

Satellite Remote Sensing for Cultural Heritage Protection: The Consensus Platform and AI-Assisted Bibliometric Analysis of Scientific and Grey Literature (2010–2025)
De Simone, C.S., Masini, N., and Abate, N., *Heritage*, **9**(4), 149, (2026)
https://doi.org/10.3390/heritage9040149
Summary: This review examines the growing role of satellite remote sensing in preventive archaeology and cultural heritage management between 2010 and 2025. It highlights advances in optical, SAR and AI-assisted methods for site detection, damage monitoring and risk assessment, alongside their increasing integration into conservation policies and emergency response. The findings demonstrate a shift towards open-data, multi-sensor approaches supporting evidence-based heritage protection.

Selecting the Optimal Spectral Band for Humid-Tropical Archaeological Prospection in Bujang Valley: A Band-Sum Normalization of SPOT and UAV Imagery at Sungai Batu
Roslan, S.A., Yakub, F., Saidin, M., Rashid, M.Z.Ab., and Kasim, J.A., *Archaeological Prospection*, **33**(2), 339–354, (2026)
https://doi.org/10.1002/arp.70025
Summary: This study uses multi-temporal SPOT satellite imagery and multispectral UAV data to investigate archaeological detection at Sungai Batu, Malaysia. After accounting for background spectral variation, the Green band produced the strongest correlations with known archaeological features, including ritual structures, ancient jetties and iron-smelting remains. The findings support Green-band imagery as a practical, low-cost tool for archaeological prospection in humid tropical environments.

Spectres of violence: contemporary archaeology of the Yahidne war crime
Kiarszys, G. and Lemiesz, M., *Antiquity*, **100**(411), 796–817, (2026)
https://doi.org/10.15184/aqy.2026.10322
Summary: This article examines the 2022 Yahidne war crime through satellite imagery and the material traces of Russian occupation, exploring how these remnants contribute to collective memory, memorialisation and the role of contemporary archaeology in documenting recent conflict.

The water management around the Urartian fortress of Argishtikhinili, Armenia
Buławka, N., Jakubiak, K., and Karapetyan, I., *Antiquity*, **100**(412), e40, (2026)
https://doi.org/10.15184/aqy.2026.10344
Summary: Despite the survival of some historical records, little is known about water management in Urartu. This project focuses on the fortress of Argishtikhinili in the Araks Valley, Armenia, employing satellite imaging and remote sensing data to identify 1019km of water-management features, including a potential 134.6km of ancient canals.

Unveiling Ancient Nile Channels in Qena, Egypt: A Spaceborne Imagery Approach Using Google Earth Engine
Bumgarner, L., Ghoneim, E., Fathy, M., Cross, P., El-Behaedi, R., Onstine, S., *et al*., *Remote Sensing*, **18**(8), 1184, (2026)
https://doi.org/10.3390/rs18081184
Summary: This study uses multi-temporal Sentinel-2 satellite imagery and a new vegetation index (MGEVI) to map buried Nile channels, river islands and ancient channel belts. Validated against radar elevation data, historical maps and field evidence, the method reconstructs past river dynamics and identifies a possible former hydrological connection to the Dendera Temple Complex, demonstrating the value of satellite remote sensing for geoarchaeology.

4. Aerial Photographs and Photogrammetry

A monumental garden complex in Tabriz, Iran
Fradley, M.G., Rouhani, B., and Hopper, K., *Antiquity*, **100**(410), e24, (2026)
https://doi.org/10.15184/aqy.2026.10289
Summary: Analysis of historic aerial photography has identified a possible monumental formal garden complex on the outskirts of Tabriz, Iran. Here, the authors describe this complex and explain why it is an important addition to our knowledge of elite Persian garden design practice that spread globally over time.

A Recently Discovered Long Barrow near Southbourne, West Sussex
Gill, M., (2026)
https://doi.org/10.5281/zenodo.20090746
Summary: Despite extensive research into Sussex's Neolithic long barrows, publicly available satellite and aerial imagery has enabled the discovery of a previously undocumented 80 m-long example near Southbourne, West Sussex, demonstrating the potential of remote sensing to reveal archaeological monuments visible only under favourable crop and weather conditions.

Campamentos romanos en Navarra: inventario por teledetección y estadística circular (Roman camps in Navarre: remote sensing inventory and circular statistics)
Echegaray Agara, M., (2026)
https://doi.org/10.5281/zenodo.19765905
Summary: Using historical aerial photography and lidar, this study identifies 33 possible Roman military enclosures in Navarre and the western Pyrenees. A predictive method combining enclosure orientation, morphology and historic boundaries suggests a coordinated military network associated with Roman roads and river systems. Statistical analysis supports non-random orientation patterns, although all proposed identifications require archaeological verification.

Dark heritage under a football pitch: locating and interpreting an East Asian Second World War-era mass grave in urban Hong Kong
Chi Man, K. and Lok, W.L.W., *Journal of Conflict Archaeology*, **21**(3), 218–240, (2026)
https://doi.org/10.1080/15740773.2026.2667162
Summary: Combining georeferenced wartime aerial photographs, archival records, oral histories and ground-penetrating radar, this study identifies a mass grave containing at least 2,632 bodies beneath King George V Memorial Park in Hong Kong. Aerial imagery and geospatial analysis help reconstruct this obscured wartime site, revealing the lasting impact of urban development on the visibility of civilian suffering.

Horseshoe-Shaped Tower-Type Structures on the Southern Slopes of Mount Aragats
Mkrtchyan, L., *Herald of the Social Sciences*, 221–239, (2026)
https://arar.sci.am/dlibra/publication/473010/edition/438276/
Summary: This study examines Bronze and Iron Age horseshoe-shaped stone towers on Mount Aragats, Armenia, combining field surveys, drone-based aerial photography and GIS analysis. Aerial imagery supports the documentation and spatial analysis of these structures, revealing organised systems with recurring architectural features, including internal chambers resembling regional dolmen-type monuments.

***Puteoli* and the *ripa puteolana*: archaeological and geological insights into a submerged Roman waterfront**
Silani, M., Stefanile, M., Vito, M.A.D., and Tardugno, M.L., *Annals of Geophysics*, **69**(3), SY338–SY338, (2026)
https://doi.org/10.4401/ag-9521
Summary: Aerial photogrammetry, calibrated by underwater surveys, enabled the reconstruction of nearly 2 km of submerged Roman waterfront at Puteoli, Italy. The research identified warehouses, quays, a previously unknown peninsula and a unique submerged Nabataean temple, demonstrating the value of photogrammetry for documenting underwater archaeological landscapes.

"Tehran of Poles": Heterotopias in the 1940s
Naeimi, M., *Journal of Contemporary Archaeology*, **12**(2), 224–258, (2025)
https://doi.org/10.1558/jca.28328
Summary: This study reconstructs the spaces occupied by Polish refugees in wartime Tehran, using historical aerial imagery, sketch plans and archival sources to map camps, hospitals and residences. It demonstrates the value of aerial photographs for investigating displaced communities and their urban environments where conventional fieldwork is restricted.

5. GIS and Landscape Mapping

Bayesian optimal allocation of effort in archaeological survey: A case study in Wadi Quṣaybah, Jordan
Edwards, S., Hitchings, P.M.N., Banjevic, D., and Banning, E.B., *Journal of Archaeological Science*, **191**, 106568, (2026)
https://doi.org/10.1016/j.jas.2026.106568
Summary: This study develops a Bayesian predictive modelling application to optimise archaeological survey effort in landscapes altered by geomorphological change. Tested in northern Jordan, the approach helped identify several late prehistoric sites, including two confirmed as Late Neolithic through excavation.

Developing VISUALS: A Web Application to Visualise the Results of the AARG Ukraine Working Group Landscape Project
Fowler, M., *AARGnews*, **72**, 33, (2026)
https://aargonline.com/wp/wp-content/uploads/2026/04/AARGnews72.pdf#page=33
Summary: The VISUALS web application provides an interactive means by which the results of the AARG Ukraine Working Group's archaeological landscape survey of an area in Ukraine can be visualised beyond the constraints of static distribution maps and the written word. Supported by a grant from the AARG Fund to cover the online availability of VISUALS until 2030, it is freely accessible to everyone through a link on the Ukraine Working Group page of the AARG website. To help others who may be thinking of using this type of approach in their projects, this article briefly describes how VISUALS was developed, some of the issues encountered and where it may be headed in the future.

Digital Documentation and GIS-Based Research on the Archaeological Landscape of the Sokh Basin
Pardaev, M.K., Omanov, S.A., Oynazarov, K., Пардаев, М.Х., Оманов, Ш.А., and Ойназаров, Х., *Vestnik NSU. Series: History and Philology*, **25**(5), 87–102, (2026)
https://doi.org/10.25205/1818-7919-2026-25-5-87-102
Summary: Combining remote sensing, GIS and field surveys conducted between 2019 and 2023, this study documented 112 archaeological sites in Uzbekistan's Sokh Basin, including 29 previously unrecorded locations. The resulting digital database supports landscape reconstruction, heritage management and future archaeological research in Central Asia.

Landscape Archaeology of the Eridu Region: Discovering the Irrigation Systems of Ancient Farms
Rayne, L., Gruchy, M. de, Jotheri, J., and Abdan, R., *IRAQ*, 1–20, (2026)
https://doi.org/10.1017/irq.2025.10037
Summary: Combining high-resolution satellite imagery, field surveys and radiocarbon dating, this study reconstructs irrigation systems

around Eridu in southern Iraq. The identified canals date from the fifth to second millennia BC, suggesting they formed part of the settlement's agricultural hinterland.

Layers of stone and ash: new perspectives from the Samtskhe-Javakheti archaeological project
Dan, R., Chilingarashvili, T., Vitolo, P., Chogovadze, T., Cesaretti, A., Gasparro, O., *et al*., *Antiquity*, **100**(412), e39, (2026)
https://doi.org/10.15184/aqy.2026.10331
Summary: Since 2017, the Samtskhe-Javakheti Project has identified about 168 archaeological sites in the highlands of southern Georgia and conducted excavations at Meghreki Fortress and Baraleti Natsargora. These sites reveal complex occupational sequences, fortification strategies and decorative practices, highlighting the region's role as an interactive cultural frontier between highlands and steppes.

Mapping Social Stratigraphy on the Northern Frontier: Survey, Salvage, and Hilltop Organization at Cruz de la Boca
García, M.D. and Caretta, M.N., *Ancient Mesoamerica*, 1–24, (2026)
https://doi.org/10.1017/S0956536126100972
Summary: Combining field survey, remote sensing and GIS, this study documents over 15 hectares of monumental and domestic architecture at Cruz de la Boca, an Epiclassic hilltop centre in northern Mexico. The spatial analysis reveals relationships between monumental compounds and simpler peripheral dwellings, improving understanding of settlement organisation during the Alta Vista phase (c. AD 600–900).

Reconstructing the Historic Terrain of the Buyeo Royal Tombs for Enhancing the Understanding of World Heritage Authenticity Using Multi-Temporal Spatial Data
Lee, J.-W., Lee, S.-K., Jung, S.-H., Choi, D.-Y., Kim, B.-G., Jang, D.-W., *et al*., *Heritage*, **9**(9), 346, (2026)
https://doi.org/10.3390/heritage9090346
Summary: This study reconstructs the original landscape of the Buyeo Royal Tombs in South Korea using historical maps, aerial photographs, excavation data, lidar and UAV photogrammetry. Correcting for modern terrain modifications, the analysis reveals the tombs' strategic placement on prominent south-facing slopes, informing interpretations of Baekje funerary planning and heritage conservation.

The Distribution of Pre-Islamic Burial Cairns in Qatar
Al-Naimi, F., Carter, R.A., Fletcher, R.N., and Sakal, F., *Arabian Archaeology and Epigraphy*, **37**(1), 373–389, (2026)
https://doi.org/10.1111/aae.70032
Summary: Combining remote sensing and ground surveys, this study identified nearly 11,000 burial sites across 3,000 km² of northern Qatar. Burial distributions correlate with access to water, grazing and the sea, while a concentration near Bahrain suggests possible territorial boundaries and demographic links between the two regions.

Tracing the pathways to Yathrib (Al-Madinah): A GIS-based analysis of settlement patterns and ancient trade networks
Metwaly, M. and Alshami, A., *PLOS ONE*, **21**(5), e0348677, (2026)
https://doi.org/10.1371/journal.pone.0348677
Summary: This study combines GIS-based suitability analysis and least-cost path modelling to investigate settlement patterns and caravan routes around Yathrib (Al-Madinah), Saudi Arabia. Results identify highly suitable settlement areas across 32% of the region and highlight the importance of water access, terrain and soil in shaping ancient settlement and trade networks.

6. Miscellaneous and Interdisciplinary Studies

A Prospection-Led Archaeological Investigation of a Picenian and Roman Necropolis in Corinaldo (Marche, Italy)
Boschi, F., *Archaeological Prospection*, **33**(3), 697–708, (2026)
https://doi.org/10.1002/arp.70047
Summary: Combining aerial photography, field surveys, geophysics and targeted excavation, this study investigates a multi-period necropolis at Contrada Nevola, Italy. Remote sensing and geophysical surveys identified four Iron Age funerary monuments and guided the discovery of a rich Picenian princely tomb, demonstrating the value of integrating non-invasive techniques with excavation.

Aerial Archaeology and the Cold War
Grunwald, S., *Archaeology in the Global Cold War*, (2026)
https://www.taylorfrancis.com/chapters/edit/10.4324/9781003473473-16/aerial-archaeology-cold-war-susanne-grunwald
Summary: This study traces the development of aerial archaeology in Germany from its pre-war origins through the Cold War, highlighting how the division of Germany shaped research. While aerial surveys resumed in West Germany in the late 1950s, restrictions in East Germany forced continued reliance on historical maps and plans, influencing archaeological research and interpretation.

Climate Change Monitoring of Heritage Sites Using Digital Tools
Alhammadi, D.R.S., *IJAIDR - Journal of Advances in Developmental Research*, **17**(1), (2026)
https://doi.org/10.71097/IJAIDR.v17.i1.1836
Summary: This review examines digital technologies for monitoring climate-related threats to cultural heritage, including satellite remote sensing, InSAR, UAVs, sensors and machine learning. It highlights their potential to improve risk assessment and adaptive conservation, while emphasising the need for effective governance, data standards and investment.

Digital Documentation and 3D Modeling of Archaeological Landscapes
Alhammadi, R.S., *IJLRP - International Journal of Leading Research Publication*, **7**(5), (2026)
https://doi.org/10.70528/IJLRP.v7.i5.2115
Summary: This review examines digital documentation and 3D modelling in archaeology using photogrammetry, lidar, GIS, satellite imagery and other technologies. It argues that these methods transform archaeological interpretation from individual sites to wider landscapes, with significant implications for heritage management, public engagement and interdisciplinary research.

Estudio del castro de épocas vettona y romana de El Castillejo (Madrigalejo, Cáceres) a partir de métodos no invasivos (Study of the Vettonian and Roman hill fort of El Castillejo (Madrigalejo, Cáceres) using non-invasive methods)
Carranza Peco, L.M., Gil Llorente, A., Bravo Hidalgo, A., García Sánchez, J., Pérez-Aguilar, L.-G., and Mayoral Herrera, V., *Vínculos de Historia Revista del Departamento de Historia de la Universidad de Castilla-La Mancha*, (15), 151–182, (2026)
https://doi.org/10.18239/vdh_2026.15.07
Summary: Combining geomagnetic survey, multispectral aerial photography, thermal imaging and field survey, this study investigates El Castillejo in western Spain. Results reveal a Vettonian settlement founded by at least the 2nd century BC, with continued occupation during the Roman period, providing new insights into regional settlement and cultural transitions.

'For the rectification of digital images from archaeological aerial photographs' - a Brief Appreciation of John Haigh (1941-2025)
Cowley, D. and Oakey, M., *AARGnews*, **72**, 14, (2026)
https://aargonline.com/wp/wp-content/uploads/2026/04/AARGnews72.pdf#page=14
Summary: John Haigh was a mathematician at the University of Bradford and a pioneer in the field of computerised rectification and mapping from oblique aerial photographs through his AERIAL software. Here we look back at the development of AERIAL and John's invaluable contribution to the progress of aerial archaeology and mapping that we all take for granted today.

Haughey's Fort: a major complex of power, production and ritual in Late Bronze Age Europe
O'Driscoll, J. and Gleeson, P., *Antiquity*, **100**(413), 1312–1329, (2026)
https://doi.org/10.15184/aqy.2026.10382
Summary: Combining remote sensing, excavation and archival research, this study investigates Haughey's Fort, a major Bronze Age centre in Northern Ireland. It identifies a 109-hectare enclosure, 204 possible structures and a ceremonial avenue leading to a ritual pool, revealing the site's extensive social, economic and ceremonial significance.

Integrating Remote Sensing, Archaeological Survey and Geophysical Prospections for the Enhancement of Roman Doclea, Montenegro
Koprivica, T., Alberti, L., Cozzolino, M., Di Palma, B., Gentile, V., and Merola, P., *Archaeological Prospection*, Early Viw, (2026)
https://doi.org/10.1002/arp.70061
Summary: This multidisciplinary project investigates the Roman city of Doclea, Montenegro, integrating satellite, aerial and drone imagery with geophysics, archaeological surveys and historical research. The findings support improved understanding of the city and inform heritage conservation, site interpretation and sustainable tourism.

Investigating the Castello Archaeological Park (Cersosimo, Italy) Using a Combination of Geophysical Prospections, Aerial and Terrestrial Photogrammetry
Cozzolino, M., Gentile, V., and Mauriello, P., *Computational Science and Its Applications – ICCSA 2026 Workshops*, 68–85, (2027)
https://doi.org/10.1007/978-3-032-30539-8_5
Summary: This study combines high-resolution photogrammetry and non-invasive geophysical surveys to investigate the Castello Archaeological Park in southern Italy. The approach aims to identify overlooked structures, clarify the settlement's internal layout and defensive circuit, and guide future archaeological research.

Joint Interpretation of Archaeological, Geological, Geophysical and Remotely Sensed Data for Fluvial Geomorphology: The Case of the Calore River Meander North of Benevento (Italy)
Amato, V., Cozzolino, M., Gentile, V., and Mauriello, P., *Remote Sensing*, **18**(15), 2629, (2026)
https://doi.org/10.3390/rs18152629
Summary: Combining historical maps, aerial photographs, satellite imagery, boreholes and geophysical surveys, this study reconstructs the Calore River's evolution near Benevento, Italy. It identifies a Bronze Age channel abandoned in the nineteenth century and potential buried archaeological features, demonstrating the value of integrated remote sensing and geophysical methods for investigating floodplain landscapes.

Memories of Johanna Dreßler (1980-2026)
Popović, S., Glavaš, V., Devlahović, A., Posluschny, A., Cantoro, G., Coc, C., et al., *AARGnews*, **72**, 10, (2026)
https://aargonline.com/wp/wp-content/uploads/2026/04/AARGnews72.pdf#page=10
Summary: AARG members share their memories and photographs of Johanna Dreßler, our former Secretary, who sadly passed away on 16th March 2026. She was a skilled aviator, aerial photographer, aerial archaeologist and to many of us, a good friend.

Multiscale anthropogenic feature detection in the Argentinian Andes: satellite machine learning, UAV, and pedestrian survey
Peters, M.J.H., Jambajantsan, A., Freire, V.Z., Pey, L., Vaquer, J.M., and Roberts, P., *npj Heritage Science*, **14**(1), 352, (2026)
https://doi.org/10.1038/s40494-026-02813-z
Summary: This study combines satellite imagery, machine learning, UAV data and field surveys to document archaeological features in Argentina's high-altitude Cusi Cusi region. The integrated approach identifies past and present human activities, supporting cultural heritage documentation and offering a framework for surveying rugged landscapes threatened by environmental and resource-related change.

Multi-Sensor Geometric Documentation of Cultural Heritage at Risk Across Inland, Coastal and Shallow-Water Environments
Verykokou, S., Ioannidis, C., Potsiou, C., Soile, S., Tokmakidis, K., Papadimitriou, K., *et al*., *Sensors*, **26**(18), 5698, (2026)
https://doi.org/10.3390/s26185698
Summary: This study combines UAV and underwater photogrammetry, acoustic surveys and green-wavelength lidar to document eight cultural heritage sites across diverse environments. The resulting 3D models, elevation data and bathymetric maps establish baselines for monitoring environmental damage, assessing conservation needs and supporting future digital heritage management.

New Insights into the Site of Madonna del Piano (Castro dei Volsci, Italy) Through a Combined Use of Drone-Acquired LIDAR Data, Laser Scanning, Photogrammetry, Historical Aerial Imagery Analysis, Geophysical Investigations and Archaeological Analysis
Angelini, A., Caratelli, G., Cozzolino, M., Gentile, V., Mauriello, P., Pietropaolo, G., *et al*., *Remote Sensing*, **18**(10), 1526, (2026)
https://doi.org/10.3390/rs18101526
Summary: Historical aerial photographs revealed archaeological anomalies at the Roman villa of Madonna del Piano, Italy. Combining aerial photogrammetry, lidar, geophysical surveys and archival research, this study clarifies the layout and relationships of three villa complexes, improving understanding of the settlement and its wider landscape.

Noninvasive GPR, ERT, LIDAR and TLS Methods in the Search for Artefacts on the Site of the Palace Complex in Łobzów (Poland)
Stala, K., Pasierb, B., and Nawrocki, W., *Archaeological Prospection*, **33**(3), 709–729, (2026)
https://doi.org/10.1002/arp.70045
Summary: Geophysical surveys using GPR, ERT, lidar and terrestrial laser scanning investigated the remains of the royal palace at Łobzów, Krakow. The results clarified the extent of Casimir the Great's fortified residence, identified surviving palace walls and possible Gothic structures, and mapped the medieval moat and irrigation canal.

Optimizing Strategies for Non-Invasive Prospection of Settlements in the Intertidal Zone: A Case Study From the Centre of the Drowned Medieval Village of Tolsende (Scheldt Estuary, the Netherlands)
Trachet, J., Bäumler, S., Krojer, S., Verhegge, J., De Clercq, W., De Smedt, P., *et al*., *Archaeological Prospection*, Early View, (2026)
https://doi.org/10.1002/arp.70054
Summary: UAV photogrammetry, magnetometry and sediment sonar were combined to investigate the drowned medieval village of Tolsende, Netherlands. The surveys mapped exposed and buried structures, including a church and residential features, demonstrating the potential of integrated non-invasive methods for studying archaeological remains in dynamic intertidal environments.

Pioneering Preventive Preservation: The role of remote sensing in Cultural Heritage
Tsiafaki, D., Michailidou, N., Karta, M., and Sirakouli, V., *CAA2025 Conference Proceedings*, (2026)
https://doi.org/10.5281/zenodo.19440329
Summary: This paper examines how remote sensing can support preventive cultural heritage conservation amid climate change, highlighting the European ARGUS project's integration of remote sensing and digital twins. It discusses technological challenges and the importance of interdisciplinary collaboration and policy development in improving heritage resilience.

Publications of Interest: October 2025 to March 2026
Fowler, M. and Kerhouant, E., *AARGnews*, **72**, 55, (2026)
https://aargonline.com/wp/wp-content/uploads/2026/04/AARGnews72.pdf#page=55
Summary: A collection of 90 recent articles that may be of interest to the aerial archaeology community. The time period covered is from October 2025 to March 2026.

Recommendations for Low-Noise Data Acquisition with UAV-Mounted Multi-Channel Magnetometer Systems
Stele, A., Hahn, S.E., Seisenbacher, C., Häussler, G., and Linck, R., *Remote Sensing*, **18**(15), 2564, (2026)
https://doi.org/10.3390/rs18152564
Summary: Tests of a drone-mounted magnetometer examined how flight altitude, speed, heading and platform affect magnetic data quality. The findings identify sources of interference and recommend survey strategies to improve data quality for archaeological and other near-surface applications.

Remote Roca: Integrating Data From Archaeological Survey, Remote Sensing and Geophysics in the Hinterland at the Long-Lasting Mediterranean Site of Rocavecchia (Apulia, Italy)
Guarino, G., Iacono, F., Agostini, G., and Susini, D., *Archaeological Prospection*, **33**(3), 759–783, (2026)
https://doi.org/10.1002/arp.70049
Summary: Multi-temporal aerial and satellite imagery, geomagnetic surveys and fieldwalking were integrated in GIS to investigate the coastal settlement of Rocavecchia, Italy. The study identified evidence of occupation beyond the fortifications across multiple periods, demonstrating how combining independent datasets improves interpretation while making chronological uncertainty explicit.

Responding to the Digital Curation Crisis: Definitions and Recommendations for Cultural Heritage
Thompson, A.R., Nicholson, C., Brown, K., MacFarland, K., Nielsen-Grimm, G., and Fernandez, R., *Advances in Archaeological Practice*, 1–22, (2026)
https://doi.org/10.1017/aap.2026.10152
Summary: This paper examines the "Digital Curation Crisis" in cultural heritage, where growing volumes of GIS, photogrammetry, 3D scanning and remote sensing data risk loss through inadequate long-term preservation. It provides definitions and practical recommendations for data producers and preservation institutions.

The archaeological landscape of Wolwekraal Nature Reserve (South Africa)
Parkington, J.E., Milton-Dean, S., Christowitz, A., Wessels, S.G., Poggenpoel, C., and Horwitz, L.K., *Antiquity*, **100**(411), e32, (2026)
https://doi.org/10.15184/aqy.2026.10293
Summary: Newly discovered open-air sites along the Dorps River in the arid Karoo (South Africa), a region with uneven archaeological coverage, demonstrate multiple visits to this favoured habitat in the late Holocene Later Stone Age (c. 3000–2000 BP).

Towards a Comprehensive Typo-Morphological Exploration of Silifke (Mersin, Turkey)'s Multi-Layered Urban Form: Methodological Insights within the Context of Urban Morphology
Algın, M.A. and Hoşkara, Ş., *ICONARP International Journal of Architecture and Planning*, **14**(1), 313–347, (2026)
https://doi.org/10.15320/ICONARP.2026.363
Summary: Historical maps, cadastral records and aerial photographs were combined to trace changes in Silifke's urban morphology. The study reveals how post-1950 urbanisation, altered plot patterns and high-rise development eroded the historic townscape, highlighting the need to integrate morphological analysis into heritage-sensitive planning.

Two possible ancient dams near the Red Pyramid on the Dahshur Plateau, Egypt
Landreau, X., Piton, G., and Hemeda, S., *npj Heritage Science*, **14**(1), 454, (2026)
https://doi.org/10.1038/s40494-026-02833-9
Summary: Satellite imagery and watershed mapping identified two previously unrecognised ancient dams near Egypt's Red Pyramid, each 600–700 m long, alongside a diversion channel. Hydrological analysis suggests they managed water and sediment from a large catchment, potentially supporting pyramid construction.

Where Now the Horse and the Rider? Some Thoughts on the ICAP 2025 Meeting in Ghent
Wroniecki, P., *AARGnews*, **72**, 20, (2026)
https://aargonline.com/wp/wp-content/uploads/2026/04/AARGnews72.pdf#page=20
Summary: The author presents a report on the 16th International Conference on Archaeological Prospection (ICAP 2025) that took place in Ghent, Belgium, in September 2025. He provides some thoughts on the subject of archaeological prospection and the value to AARG of attending ICAP meetings.

7. Datasets and Software

A Digital Heritage Collection of Bagan
McDonald, B., (2026)
https://doi.org/10.25375/uct.c.8558097.v1
Summary: The Zamani Project's digital heritage collection documents Myanmar's UNESCO-listed Bagan through 3D models, orthophotos, GIS data, architectural drawings and panoramas, supporting research, conservation and long-term preservation.

AI-Assisted Detection of Candidate Cairn, Pendant and Mustatil Features near Majami al-Hadb, Central Saudi Arabia, Using Faster R-CNN and Mustatil Software
Wasfy, T., (2026)
https://doi.org/10.5281/zenodo.20859575
Summary: This dataset contains 8,761 AI-generated candidate detections of possible mustatils near Majami al-Hadb, Saudi Arabia, derived from satellite imagery using a Faster R-CNN model.

Geospatial polygons and trained model weights are provided for reproducibility, but detections require manual archaeological validation.

An Orthophoto of the Temple 1192, Naga yon hpaya at Bagan
Ruther, Heinz, Schröder, Ralph, Bhurtha, Roshan, Wessels, Stephen, and McDonald, Bruce, (2026)
https://doi.org/10.25375/uct.32789658.v1
Summary: An orthophoto of Temple 1192 (Naga Yon Hpaya) at Bagan, Myanmar, produced by the Zamani Project to support accurate measurement, mapping and conservation of this UNESCO World Heritage Site.

ArqPy: A Python Toolbox for Remote Sensing Image Preprocessing and AI-Assisted Interpretation of Derived Products for Archaeological Prospection
Iranzo, C., Uribe, P., Angás, J., and Pérez-Cabello, F., *Sensors*, **26**(17), 5478, (2026)
https://doi.org/10.3390/s26175478
Summary: ArqPy is a Python toolbox that standardises archaeological remote-sensing workflows, combining multispectral image processing with AI-based analysis. Tested on crop marks at Zar Tepe, Uzbekistan, it supports reproducible prospection while emphasising the need for expert validation.

Bridging the gap between contemporary remote sensing and archaeology: The S.A.D.A. platform for accessible remote-sensing image analysis
Ciccone, G., Abate, N., Frisetti, A., Amodio, A.M., Lasaponara, R., and Masini, N., *Journal of Cultural Heritage*, **81**, 20–35, (2026)
https://doi.org/10.1016/j.culher.2026.06.026
Summary: This paper introduces S.A.D.A., an open-source application simplifying archaeological anomaly detection in satellite and UAV imagery through a graphical interface. Tested across three Italian sites, it enables accessible, iterative analysis and GIS-ready outputs, reducing technical barriers while retaining the need for expert interpretation and archaeological validation.

Detecting Buried Archaeological Remains at Qusayrat Aad: An Integrated Approach Using Advanced Satellite Imagery Analysis and Magnetic Survey
Metwaly, M. and Alsham, A., (2026)
https://doi.org/10.5281/zenodo.20784570
Summary: This dataset supports research into buried archaeological remains at Qusayrat Aad, Saudi Arabia, providing raw and processed magnetic gradient and remote-sensing data. Absolute geographic coordinates are withheld due to heritage restrictions.

Hunter Island UAV Survey - June 2016 - British Columbia - Canada
Holmes, K. and McInnes, W., (2016)
https://doi.org/10.21966/xz1d-s112
Summary: UAV imagery and RTK surveying are used to document the Hauyat cultural landscape on Hunter Island, British Columbia, producing high-resolution imagery, 3D surface models and spatial data of archaeological features, including a terraced village, clam gardens and fish traps.

Mustatil: An Open-Source AI and GIS Framework for Archaeological Feature Detection in Satellite Imagery
Tarek, W., (2026)
https://doi.org/10.5281/zenodo.20800096
Summary: Mustatil is an open-source, offline GIS and AI platform for detecting, annotating and mapping archaeological features in satellite and aerial imagery. Its latest update expands support for models including Faster R-CNN, Mask R-CNN, U-Net, SAM2, OWLv2, Grounding DINO and RF-DETR, integrating training, large-image analysis and GIS export.

Neolithic (4850–4500 BCE) rondel enclosures in Central Europe: A curated geospatial and structural dataset
Vondrovský, V., Bartík, J., Furholt, K., Furmanek, M., Kalafatić, H., Lieskovský, T., et al., (2026)
https://doi.org/10.5281/zenodo.20701415
Summary: This dataset documents 261 Neolithic rondel enclosures across seven Central European countries, providing geospatial locations, construction details and research status to support comparative spatial analysis and investigation of their distribution and significance.

YOLO-Based Remote Sensing Aerial Survey Dataset of Candidate Cairns and Pendants in Saudi Arabia Near Al Faw Produced with Mustatil
Tarek, W., (2026)
https://doi.org/10.5281/zenodo.20723970
Summary: This GIS dataset contains YOLO-detected candidate cairns and pendant structures in Saudi Arabia, identified using Mustatil and remote-sensing imagery. The features support archaeological prospection and landscape analysis but require independent archaeological validation.

AARG Annual Report 2025-2026

The AARG Committee Members

Chair's Report (Łukasz Banaszek)

AARG Conference

This September, the AARG Meeting takes us back to Pilsen, Czechia, 10 years after the first event of this type held in this wonderful West-Bohemian city. The meeting programme offers an exciting and busy two days of aerial archaeology and remote sensing. AARG Committee is thankful to Lenka Starkova, Meeting Secretary, for her work in organising this event with help from Martin Gojda and volunteers, as well as to the local sponsors for their support helping to keep the cost of the event to participants as low as possible.

We have 29 interesting presentations distributed over two days as well as a poster session showcasing eleven posters on Thursday 10th September. We have about 60 members and non-members registered for the conference and social events and the scientific programme shows that we attract speakers and audience from all over the world.

The Committee is happy to share that we have confirmed the venue and pencilled in dates for the AARG 2027 conference, which we will reveal at the Annual General Meeting (AGM) in Pilsen. We have also initiated negotiations with the organisers of the 2028 meeting. While we believe we have strong candidates to organise future meetings, we encourage our members to get in touch if they are happy to provide the Committee with a back-up option for the 2028 meeting and/or welcome AARG in 2029.

Constitution amendments

Thank you to all members participating in the AARG 2025 AGM and approving the proposed amendments to our Constitution. The updated document was shared with the Scottish Charity Regulator, OSCR, and signed off in late 2025. The up-to-date Constitution is available on the AARG website.

Committee and Trustee Elections

This year's AGM will see a series of elections at the Committee and Trustees Board level. The three-year appointment runs out for AARG Chair (Łukasz Banaszek), Honorary Secretary (Susan Curran), Vice Chair (Sara Popović), and Treasurer (Rebecca Bennett). Subject to membership approval, Łukasz will take up the position of Vice Chair, Susan and Sara will leave the Committee – the latter after nine years in office as Honorary Secretary, Chair, and Vice Chair – while Rebecca is standing up to be re-elected as Treasurer. Finally, Włodek Rączkowski will leave the Trustees Board with two new candidates hoping to join the Board while Chris Cox is standing up to be re-elected. Over the last few months, the Committee has been encouraging AARG members to take an active role and contribute to the management of the organisation, and we discussed various options with several candidates. We are thankful to our members willing to provide their expertise and skills to the benefit of AARG and in return growing themselves through leadership and management of the charity.

Collaboration with ISAP

In line with the Memorandum of Understanding (MoU) with ISAP, in early 2026 the Committee held a meeting with our counterparts in our sister organisation. We have discussed EAA Archaeological Prospection Community activities at the online 2025 EAA Meeting, originally planned to take place in Belgrade, Serbia, as well as engagement with non-AARG/ISAP members at the future EAA AP meetings. We summarized AARG and ISAP meetings happening in 2026 and beyond. The next ICAP will take place in Brno, Czechia between 6th and 11th September 2027 and the Committee has agreed that the best dates for AARG 2027 meeting will be 16-18 September to avoid overlap with the ISAP meeting.

If you are an AARG member planning to attend ICAP in Czechia and are willing to represent AARG at that meeting, please let the AARG Committee know as soon as possible.

Together with the ISAP Committee we continue our involvement in overseeing the EAA Archaeological Prospection Community and use the development of that body for the benefit of AARG and ISAP. Both Committees jointly agree to continue covering the EAA Annual Membership expenses for Paul Johnson, the Chair of the EAA Archaeological Prospection Community because of decisions made by the Committee in 2024. The next joint meeting of the two Committees will take place in early 2027.

If you are an AARG member planning to attend 2026 EAA meeting in Athens and/or the 2027 meeting in Leiden and are willing to represent AARG at the meetings, please inform AARG Committee as soon as possible.

Finally, we are having an ongoing discussion with the ISAP committee to check if there is an appetite from our partners in establishing a joint working group.

Collaboration with Landscape Survey Group (LSG)

In May 2025, we signed an MoU with the Landscape Survey Group (LSG) that establishes a framework for cooperation between the parties for the shared use of web hosting services, including server resources, bandwidth, and related technical

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support. AARG Committee is committed to continuing the support for LSG in this field.

Collaboration with European Archaeologica l Council (EAC)

Following Rachel Opitz' departure from the Remote Sensing for Archaeology AARG/EAC/ISAP Working Party, Rebecca Bennett has been identified by the AARG Committee as AARG lead and representative in this forum. Over the next couple of years we would like to repeat the community survey AARG, previously run in 2023.

AARG Socials

The networking opportunity of meeting AARG members and friends in Trondheim bore many fruits, one of which was the appointment of Kimberley Teale as AARG Social Media Officer. Kim was appointed by the Committee in Autumn 2025 and she skilfully manages AARG Facebook and Bluesky accounts. The updates on the organisation's socials are in Kim's section of the annual report.

AARG Bursaries

In late 2025 AARG Fund moved from the Chair's to the Vice Chair's portfolio and relevant updates on the Fund are discussed in the Vice Chair report below. Nonetheless, AARG continues to support our members through the Fund, as well as through Bursaries. In total, we gave out 13 bursaries mainly to early career and young researchers in support of their participation in the AARG 2025 meeting in Trondheim. The total number includes five participants in the 6th Training and Research in the Archaeological Interpretation of LiDAR (TRAIL) in Postojna, Slovenia organised by ZRC SAZU. We supported one Ukrainian researcher through the AARG 2025 Ukrainian Participation Bursary scheme. This scheme has recently been reorganised into Crisis-Affected Nations Bursary and its scope has broadened.

AARG Bursary remains our most popular funding scheme attracting student and young researchers to join us for the Annual Meeting. This year we are supporting four students and the 2025 Early Career Prize Winner.

AARG Archive

Lidka Żuk has helped the Committee with sorting out AARG's digital archive and we are working on publishing relevant content on the group's website. We have also received Rog's paper archive, and the digitisation of this collection will take place over 2026-2027. If you have documents that you feel should be included in the AARG Archive as they would allow us to document the history of the organisation and promote our work, please get in touch with the Committee members.

Vice Chair's Report (Sara Popović)

AARG Fund

In February 2026, £1,000 was awarded to the project *Experimental Assessment and Field Validation of UAV Magnetometry at the Roman Fort of Brocavum*. The project is led by PI Michal Pisz from the University of Bradford, with co-investigators Alessia Mandorlo from the University of Salento and Patrick Lovell from the University of Bradford. It compares UAV-based magnetometry with conventional ground-based magnetic survey to assess its archaeological applicability and practical limitations. The first, experimental stage has been successfully completed, and the team will now proceed with field validation at Brocavum.

The project also highlighted the potential for closer collaboration between AARG and ISAP in the field of UAV-based geophysical survey, which brings together AARG's interest in aerial archaeology and ISAP's expertise in archaeological geophysics. A proposal has therefore been made to explore the establishment of a joint working group, and we are currently awaiting its discussion and a response from ISAP.

A further call was opened in May 2026, but no applications were received. We encourage eligible AARG members to apply when the next call opens. Applicants are normally required to have been AARG members for two consecutive years. However, proposals from students and early-career researchers who do not yet meet this requirement are also welcomed, provided that their mentors are AARG members.

Three projects supported through AARG Fund in 2025 have been already completed with publications in *AARGnews* 70-72. In addition, in 2026, Antonio Jesús Ortiz Villarejo completed the project investigating the Malaventura fortification in Despeñaperros, Spain. The project used high-resolution UAV-based lidar to document a complex, multiphase fortification concealed beneath dense Mediterranean vegetation and to examine its possible strategic role in the military landscape associated with the Battle of Las Navas de Tolosa in 1212. The results will be presented at the AARG Annual Conference in Pilsen in September 2026 and are ready to be published in the next *AARGnews* [see pages 22-26 of this issue - Ed].

Thus, only one project funded in 2025, *Mapping change to rural occupation in pre- to late Roman Abruzzo: multispectral imaging at Furfo (Italy)*, led by Stephen Kay from the British School at Rome, has not yet been finalised yet primarily due to delayed fieldwork.

Treasurer's Report (Rebecca Bennett)

This report to the AGM contains the figures and formal financial reporting for 1st January 2025 to 31st December 2025. However, as it is made mid-financial year it also includes an informal update for the 6 months of 2026 for the interest of the committee and members.

Procedure

The accounts for 2025 were compiled by AARG Treasurer Rebecca Bennett and were submitted to AARG Auditor Helen Winton for auditing approval prior to them being forwarded to the Office of the Scottish Charity Regulator (OSCR) for acceptance. Thanks are due to AARG Trustee Chris Cox and Auditor Helen Winton, for additional cross-checking of the 2025 accounts.

Headlines

- As per the OSCR format (where all finances held across all accounts are converted to £ Sterling at 31/12/2025 and totalled) the total assets of The Aerial Archaeology Research Group are £23,244 and AARG has recorded a small deficit for the year of £277.
- The closing balance of the Sterling account is

£19,924.97 (opening balance £17,130.04).

- The amount in the sterling account has increased by £2,794.93 due to the timely transfer of membership and conference fee income from Paypal before the year end.
- The closing balance in the Euro account (HSBC) is €800.12 (opening balance €395.17)
- The closing balance in the HSBC Euro account has increased by €404.95 principally due to the direct payment of conference fees into the account.
- AARG also has £599.76 and €2,217.47 respectively in the charity's Paypal account.
- Membership income dropped slightly to £2,182 from £2,514 in 2024, but remained well above pre-2024 levels (average of £1,530 for the years 2020-23 inclusive).
- Expenditure on the AARG fund was significantly increased with four new successful applications. With the accrued 2024 grant for the Ukraine Working Group Web Map, (value £184.80) this brings the total AARG Fund spend to £3,005.19.
- The Committee awarded fourteen bursaries in 2025. This supported conference attendance for early career researchers to both the AARG conference and the TRAIL meeting to a total value of £2,775.39
- Committee expenses increased to £173 this year due to the payment of a fine to settle a copyright issue and reimbursing the cost of printing and movement of conference materials via taxi to support the AARG conference in Trondheim to a committee member.
- The cost of supporting software (Zoom, GoogleDrive and webhosting) decreased from £642 to £172 as there was no payment due for webhosting.
- The cost of banking charges (HSBC and Paypal) increased again by £155 from £385 to £560. This increase was due to Paypal fees to handle higher numbers of payments for the conference than 2023.

Treasurer's Report

At the start of 2026 AARG remains in a strong financial position having delivered a very successful conference for members in Trondheim, with notable thanks offered to local host Ole Risbøl at NTNU for securing grant funding to support the conference and keep conference fees to a minimum for attendees. We were also pleased to be able to support ZRC SAZU in hosting the sixth *Training and Research in the Archaeological Interpretation of Lidar* (TRAIL) meeting in Slovenia with bursaries to cover the attendance and travel of five student and early career professionals.

Membership income was £1,084.57 and €1,258.93 respectively, a small decrease from £1,310.00 and €1,457.60 in 2024. Thank you to all members who continue to support the group via prompt payment of membership fees. This leaves AARG with healthy overall balances of £20,524.73€ and €3,017.59, a strong position which will allow us to continue our support of members via the AARG Fund and Conference Bursaries.

Overheads

The groups overheads remain good value despite the larger spend this year, principally due to the need to settle a copyright issue arising from a back issue of *AARGnews* and the requirement to account for reimbursement of conference specific expenses to a committee member. The work of the committee and members (via the working groups) continues to be supported by software subscriptions to Zoom and GoogleDrive storage.

Some positive news was received in that HSBC removed charges from its sterling charitable accounts from August reducing the need for the committee to find an alternative banking provider who do not charge a monthly standing fee for charities. Charges are still payable on the Euro account and so the committee are looking into the viability of closing that account and moving all incoming transactions to the Sterling account this year.

Investing Resources

The AARG Committee remains committed to allocation of budget and any surplus funds raised by events to directly support of the membership. In addition to our allocated budget in 2025 we received a generous anonymous donation of £500 and a single £1 from the Paypal charities scheme. The Committee was pleased to be able to support 14 bursaries for early career members to attend AARG 2025 in Trondheim and TRAIL 2025 in Postojna (total value £2,775.39, an increase of 52% on 2024).

In addition to the annual instalment of the accrued 2024 grant for the Ukraine Working Group Web Map, (value £184.80), four new projects received AARG Fund support at combined cost of £2,820.39, with a total expenditure of £3,005.19. For two of the larger grants there is an outstanding balance of €420 to be paid on completion of the projects in 2026, alongside the annual commitment to fund the Ukraine Working Group web map until 2029.

The committee continued the commitment to support the EAA attendance of a joint representative of AARG/ISAP. However, as EAA 2025 was an online conference no support was payable.

As we enter 2026 in a strong financial position, I extend my personal thanks to all those who have continued to support AARG and look forward to seeing you all in person in Pilsen.

Note on GBP / EUR to OSCR Summary 15/07/26

During the audit process the Statement of Balances (where all finances are converted to GBP for the purposes of submission) was found to contain a discrepancy between calculated and actual values of -£214.85.

On review of the data the source of this discrepancy could not be located by the Treasurer, Trustee or Auditor. and all balances in the Accounts summary and working accounts spreadsheets, which are balanced separately in Euro and GBP. are correct. On review, a discrepancy in the Statement of Balances has been noted for all previous years and it is assumed that this discrepancy is an artefact of the high number of non-GBP to GBP conversions throughout the year and the final overall "artificial" conversion to GBP for the OSCR balances.

After much review and discussion, it has been concluded that as the individual GBP and EUR accounts all balance the OSCR summary should be signed off and submitted with an explanatory note with full audit trail available for review as necessary.

Mid-Year Addendum

The following points of note are to be made regarding finances in the period 1st Jan- 1st July 2025.

Membership Income – At 1st July membership income is running at £1,025 and €1,325 respectively, an increase from this point in 2025 where it stood at £1,014 and €1,065.

AARG Fund – So far this year, the Committee has awarded one project funding of £1,000 and therefore we have ample budget remaining and strongly encourage members to apply in the next round.

Conference Bursaries – Our popular conference bursary scheme to support students and early-career professionals to attend our in-person events has seen four applications as of 1st July. The bursary comprises the cost of conference attendance for each participant and up to €300 towards travel or accommodation expenses (to be used as the recipient sees fit). We have received an anonymous donation of £500 in support of these bursaries. We will also be supporting the conference attendance of the 2025 prize winner.

Winding down the Euro Account – The committee are aware that the financial and administrative cost of maintaining a separate Euro account in a period where most non GBP currency member transactions are served by Paypal is returning minimal benefit for the charity. This year we have frozen payments to and from the Euro account to fully evaluate the impact of its closure. We are aware that for a handful of members this has raised the cost of making their membership payment directly by bank transfer and we will look to into whether we have the means to mitigate this financial impact. It is perhaps pertinent to note that the cost of the transaction of the majority of memberships is borne by AARG via PayPal fees.

Honorary Secretary's Report (Susan Curran)

AARG continued its steady growth in membership into 2026 with a total of 171 members as of 9th August 2026. This is an increase from 162 in 2025 and 160 in 2024. New memberships remain at about the same rate as 2025 with 31 new AARG members in 2026.

Receipts and Payments Account for the 12 months ended 31 December 2025

As per OSCR guidance all € converted to £ and all amounts rounded to the nearest pound sterling.

Receipts	2025	2024
Membership subscriptions	£2,182	£2,514
Grants & donations (incl. sponsorship)	£500	£1,155
Conference fees	£11,383	£12,759
Total receipts	**£14,065**	**£16,428**

Payments		2024
Conference expenses	£7,697	£11,330
Committee expenses	£173	£9
Website and Software	£172	£642
Student bursaries & grants	£5,781	£1,493
Bank charges (including PayPal fees)	£519	£560
Total Payments	**£14,341**	**£14,034**
Surplus/ (deficit) for year	**-£277**	**£2,394**
All funds are unrestricted		

Statement of Balances	2025	2024
Bank and cash in hand		
Opening OSCR balance (01/01/2025)	£23,735	£21,324
Cash in hand	£87	£86
PayPal account balance	£2,533	£6,192
Bank Accounts	£20,623	£17,456
Closing balance in accounts 31/12/2025	£23,244	£23,735

The membership total comprises the following categories:

Institutional Membership: 3
Individual Membership: 145
Student Membership: 19
Honorary Membership: 4

Our members come from 24 countries with the UK comprising the highest number of members, followed by Germany, USA, and Poland.

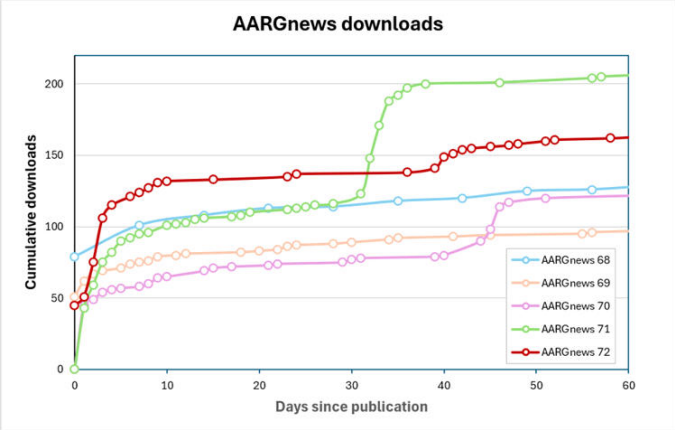
2026 AARG Membership per country

Country	No. Members
Australia	3
Austria	5
Belgium	1
Bulgaria	2
Canada	3
Croatia	4
Czechia	6
Denmark	2
France	2
Germany	12
Hungary	2
Ireland	7
Italy	6
Netherlands	5
Norway	3
Poland	9
Portugal	2
Romania	2
Slovenia	3
Spain	5
Switzerland	1
UK	75
Ukraine	2
USA	9
Grand Total	**171**

AARGnews Editorial Team's Report (Martin Fowler)

AARGnews issues 71 and 72 were published in October 2025 and April 2026 respectively by an Editorial Team comprising Martin Fowler, Eileen Kerhouant, Chris Cox, Carmen-Cornelia Miu (Bem), and Gianluca Cantoro. Feedback gathered through a Reader Feedback Survey, conducted at the AARG Conference in Trondheim, has helped shape the content and direction of *AARGnews*, ensuring that it continues to respond more effectively to readers' interests and needs.

Based on download figures from the AARG website, issues 71 and 72 were the most popular editions of *AARGnews* since records began, achieving over 200 and 150 downloads respectively within sixty days of publication. Periodic



AARGnews Spotlights and social media posts undoubtedly helped increase their reach, sharing news about aerial archaeology with a wider community and contributing to AARG's charitable objective to '*advance the education of the public in archaeology'*.

AARGnews 71 featured a report on the Rome conference dedicated to John Bradford's legacy, alongside extensive coverage of the annual AARG Conference in Trondheim. This included a conference report, a series of 'postcards' capturing aspects of the meeting, and reflections from five student volunteers who helped run the event. Technical contributions presented the results of a study using a UAV-based magnetometer to survey two plough-levelled Roman forts in Ukraine, as well as a non-destructive archaeological survey of historic ironworking settlements in the Czech Republic. In response to reader feedback requesting more coverage of books and publications, the issue introduced a new feature summarising 49 research papers published between January and September 2025. It concluded with a look back through the *AARGnews* archive at topics of interest from 10, 20, and 30 years ago, together with the annual reports from AARG committee members.

AARGnews 72 acknowledged the untimely passing of Johanna Dreßler, former Secretary and much-loved friend of the aerial archaeology community, and John Haigh, a pioneer in the computerised rectification and mapping of oblique aerial photographs through his *AERIAL* software. The issue included reports on the ICAP 2025 Meeting in Ghent and the 2025 TRAIL meeting in Slovenia. Two contributions examined AARG's Ukraine Working Group: one provided an informal summary of the Group's activities, while the other described the development of VISUALS, a web-based tool for visualising the Group's results. A short article on a tiny cluster of small circular platforms discovered in lidar imagery offered a mystery worthy of Sherlock Holmes, while another piece revisited an unfinished project to identify and map archaeological features from above in a small part of Armenia. An extensive technical report presented the results of a UAV survey of coastal archaeological landscapes along the rugged northern coast of Donegal Bay, Ireland, where sites are increasingly threatened by erosion, sea-level change, and climate change. The issue concluded with a summary of 90 papers published between October 2025 and March 2026.

We extend our gratitude to all contributors to *AARGnews* 71 and 72. *AARGnews* is your publication, and we look forward to receiving your contributions to future issues.

Webmaster's Report (Andrea Devlahović)

AARG Website (aargonline.com)

The website continues to operate on the WordPress content management system, using the Elementor website builder alongside various open-source plugins. Throughout the reporting period, regular updates were implemented to ensure the platform, plugins, and associated components remained secure, stable, and fully functional. No major issues or service interruptions were encountered.

Content & Analytics

Ongoing content management has focused on keeping key areas of the site up to date. Minor updates have been made to site text and structure as needed. Analytics monitoring has been maintained to track visitor engagement and traffic trends. In addition, download metrics for *AARGnews* were regularly compiled and provided to the Lead Editor to support editorial planning and evaluation.

From 7th August 2025 to 5th August 2026, the official AARG website received:

- 7,188 visitors (+15.7%)
- 12,083 pageviews (+6.1%), of which 10,125 were unique (+9.9%)

The top three countries generating traffic during this period were again the **United Kingdom**, **United States**, and **Germany.**

Country	Visits	Actions	Actions per Visit	Avg. Time on Website
United Kingdom	1,910	3,684	1.9	2 min 10s
United States	856	1,444	1.7	54s
Germany	503	863	1.7	1 min 23s
Italy	316	583	1.8	1 min 41s
Canada	293	467	1.6	1 min 13s
Norway	255	456	1.8	2 min 0s
Ireland	242	486	2	1 min 55s
Poland	238	596	2.5	2 min 10s
Netherlands	215	354	1.6	1 min 24s
Croatia	190	948	5	10 min 48s
Totals	**7,188**	**14,447**	**2**	**2 min 5s**

Almost **72% of users (71.7%) accessed the AARG website via desktop computers**, continuing to contrast with global trends. According to Statista[1], mobile devices accounted for just over 50% of global website traffic during the first half of 2026, highlighting the website's comparatively high proportion of desktop users.

Type	Visits
Desktop	5,154
Smartphone	1,706
Phablet	235
Tablet	90
Unknown	3
Totals	**7,188**

Among the **most visited pages** were again those related to ***AARGnews* and AARG Annual Meetings**:

Page Title	Pageviews	Unique Pageviews
Aerial Archaeology Research Group	2,800	2,360
AARGnews • Aerial Archaeology Research Group	1,895	1,625
AARG2026 Plzeň • Aerial Archaeology Research Group	1,229	962
AARG2025 Trondheim • Aerial Archaeology Research Group	1,228	1,015
Become a Member • Aerial Archaeology Research Group	810	656
Grants & Bursaries • Aerial Archaeology Research Group	611	468
Aerial Archaeology • Aerial Archaeology Research Group	555	486
About Us • Aerial Archaeology Research Group	387	334
Beginner's Reading List • Aerial Archaeology Research Group	367	342
AARG 2026 Annual Meeting Payment • Aerial Archaeology Research Group	243	59

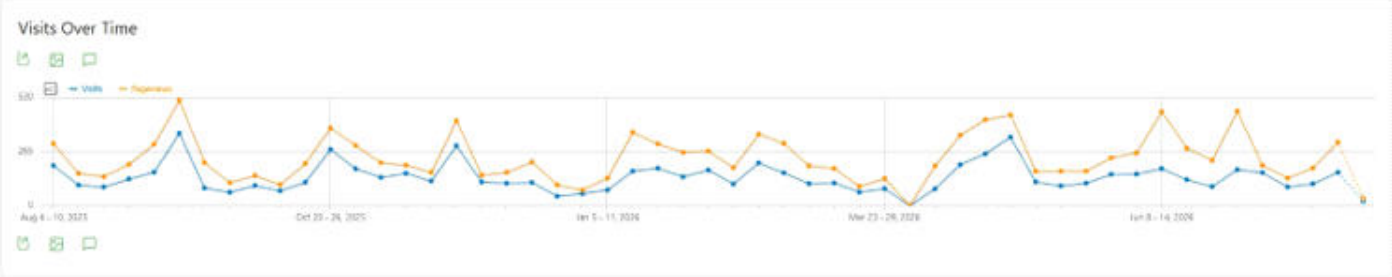
Conference Webpage

As in previous years, a dedicated conference webpage was developed and maintained as the central information hub for the **AARG2026 Annual Meeting**. Using the existing conference template, the webpage was regularly updated with the registration information, latest programme, and other resources for participants.

The conference booklet was also prepared, with content formatted and presented in a clear and accessible manner, to provide attendees with a comprehensive reference document. Following the publication of the final programme and the end of the registration period, the conference webpage continues to serve as the **main source of information** for attendees in the lead-up to the event.

Development

No major technical developments or new website features were introduced during the reporting period beyond the ongoing maintenance of existing content. The current website structure



1 https://www.statista.com/statistics/277125/share-of-website-traffic-coming-from-mobile-devices/

and functionality continue to meet the Group's needs, and no significant technical issues were encountered. Regular updates and routine maintenance ensured stable and uninterrupted performance throughout the reporting period.

Future work

The planned archive of past events remains a work in progress and continues to be a priority for future development. Once completed, it will provide a structured and accessible historical record of the Group's activities, enhancing the website's value as a resource for both members and visitors. No additional development priorities have been identified at this stage.

AARG YouTube channel (youtube.com/@aerialarchaeology)

During the reporting period, the AARG YouTube channel recorded **1,120 views** and **71.9 hours of watch time**, both remaining at a similar level to the previous year. The channel continued to grow its audience, gaining **40 new subscribers** and reaching a **total of 113 subscribers** as of 5th August 2026. The channel continues to serve as a useful platform for sharing recordings with members and the wider interested public.

AARG Google Group (groups.google.com/g/aarg-group/)

As of 5th August 2026, the AARG Google Group has **124 members**, representing an increase of **19%** compared with the previous reporting period. However, member engagement remains limited, with only four new conversations initiated during the reporting period, none of which received further responses. While the Group continues to provide a channel for communication and resource sharing, encouraging more active participation from members remains an area for improvement.

Social Media Officer's Report (Kimberley Teale)

Since the 2025 Annual General Meeting (AGM) in Trondheim we have published 43 social media posts across the AARG Facebook and BlueSky pages. These covered highlights from *AARGnews*, AARG Fund project updates, membership drives, and exciting announcements about AARG2026.

Interactions varied due to Facebook algorithms, but on the whole posts detailing members' research and technological advances performed well. The post on the AARG Funded drone-based magnetometer survey by Kseniia Bondar and colleagues was our most liked, achieving an audience of 6,646 and receiving 118 likes, and our 'Beginner's Reading List' post reached 5,900 viewers and received 113 likes. Overall across all 43 social media posts we reached 63,678 viewers across the year.

Here are the stats for spikes in our engagement - it would be interesting to see if any of these post spikes correlate with increased visitors to *AARGnews*.

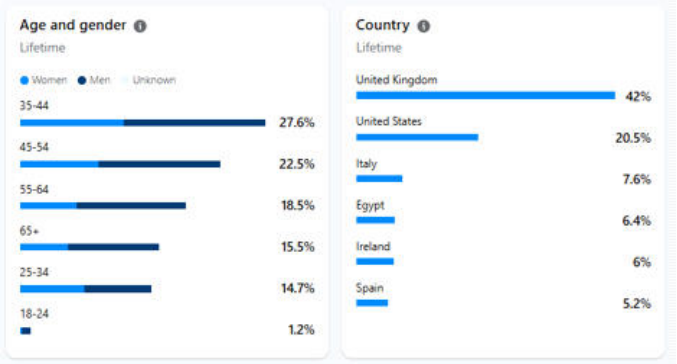
Our Facebook audience has grown by 627 net followers, increasing from 4,521 to 5,148 between September 2025 and July 2026.

Our followers are mainly based in the UK, the United States, and Italy and are predominantly aged between 35 and 54.

Our Bluesky account has grown from 457 followers in October 2025 to 543 followers in July 2026. The algorithms of Bluesky are tricky to navigate, and some posts do well whilst others achieve next to no views. Participating in trending hashtags such as #HillfortsWednesday tends to help bring new followers and likes and therefore a wider post reach, but more work needs to be done to navigate and grow our platform here.







The query about creating a LinkedIn page is still active. We wonder what benefit this would have in a platform that is dominated by AI-derived posts and those looking to grow their businesses, and whether it would be a good fit for a research group.

Our posts across both platforms have performed well due to the super content provided by our members and by those who produce *AARGnews*, and I look forward to growing our network and continuing to share our research over the coming year.

Trustees' Report (Chris Cox / Włodek Rączkowski / Toby Driver)

The Trustees are pleased to report that no major governance or operational issues arose during the reporting period. AARG remains financially stable and organisationally active, with membership levels remaining strong and support for early-career researchers continuing through the AARG Fund and Bursaries.

A key focus of the year has been strengthening governance arrangements. Constitutional amendments, developed jointly by the Committee and Trustees, were accepted by the Scottish

Charity Regulator. In parallel, regular joint meetings between Trustees and the General Committee continue, improving communication and oversight across the organisation.

The Trustees welcomed the continued growth of AARG activities, including preparations for forthcoming conferences and support provided to other events. The organisation has also benefited from increased visibility through social media, improvements to communications, and close collaboration with partner organisations.

On behalf of the Trustees, Chris Cox and Włodek Rączkowski confirmed their willingness to continue serving AARG beyond the 2026 AGM, subject to the support of the membership. The Trustees consider AARG to be in a strong position to pursue its charitable objectives over the coming year.

Working Groups' Report (Łukasz Banaszek)

AARG Ukraine WG

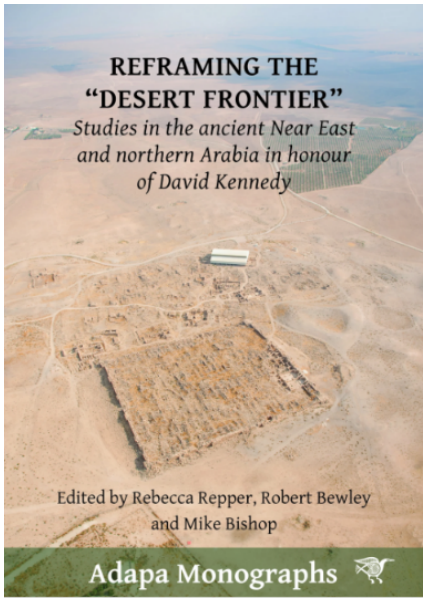
The research project undertaken by this group finished in 2025 and AARG is hosting the results of the work through VISUALS interactive web app.

Future WG

The Committee is in active discussion with AARG members and partners regarding setting up new Working Groups. Feel free to get in touch with the Committee should you have an idea you would like to develop into a Working Group.

Book Notice

Reframing the "Desert Frontier"



Reframing the 'Desert Frontier': studies in the ancient Near East and northern Arabia in honour of David Kennedy
Edited by Rebecca Repper, Robert Bewley, and Mike Bishop (eds).
Adapa Monographs, Sydney University Press.
Paperback £48
ISBN 978-1743329955

For those who remember the seminal volume *Rome's Desert Frontier From the Air* by David Kennedy and Derrick Riley published over 35 years ago, this book will be of interest as it brings together 21 scholarly contributions that address the archaeology of Rome's eastern frontier and the way it is studied in honour of David Kennedy.

The whole volume is richly illustrated with aerial photographs, and two chapters will be of particular interest to readers of *AARGnews*: Bob Bewley's review of the origins, legacy and recent developments in aerial archaeology in the Middle East and Ross Burns' reflection on Kennedy and Riley's *Rome's Desert From the Air*.

From the publisher's website: *The eastern frontier of the Roman Empire – its network of roads, trade routes, towns and forts – is often conceived of as an "edge" of both empire and civilisation, but this "borderland" is also part of a rich cultural landscape. Our awareness and appreciation of these cultures has increased dramatically over the course of the last century. Scholarship has deepened, methods have advanced, and perspectives have shifted.*

Across 20 chapters, Reframing the "Desert Frontier" offers new insights into the rich cultural history of this region through the re-examination of existing material – such as archives, historical accounts, and previous surveys – and through the use of novel archaeological approaches. The bringing together of different methodological approaches to the archaeology of the region in a single volume highlights synergies and offers important comparisons for archaeologists to consider.

This volume highlights the work of Emeritus Professor David Kennedy, whose contribution to the study of the Roman army, the archaeology of Jordan, and aerial archaeology has inspired and enhanced multiple projects that have reframed this so-called "desert frontier".

Reframing the "Desert Frontier" encapsulates the enriched view of this ancient region generated by new techniques of survey and analysis, changed perspectives on older materials, a more intense engagement with the rural landscapes surrounding ancient towns, and the addition of new discoveries that alter previous consensus.

Noticeboard

The AARGnews Editorial Team [1]

[1] editoraargnews@gmail.com

Useful information about AARG membership, the resources available to members, and various sources of funds for your studies.

AARG Membership

Membership is open to all who have an interest or practical involvement in aerial archaeology, remote sensing, and landscape studies. By becoming an AARG member, you become part of the community with its network, resources, and information. You also get a chance to share your ideas and research with other members.

As a member, you are eligible for participation in the different AARG Working Groups and the AARG Photo reading meeting, that take place once a month. You will also benefit from reduced conference fees and immediate access to the latest issues of *AARGnews* sent by email. You are also eligible to apply for the various AARG scholarships.

AARG members are kept informed via email of the annual conference, publication of new issues of *AARGnews* and occasional papers, as well as the occasional day schools which are arranged for the discussion of specialized topics.

Membership of AARG is open to individuals and institutions at following rates:

- Individual (£15 / €17).
- Student (£10 / €12).
- Institution (£25 / €29).

You can easily apply online for membership via the Membership page of the AARG website.

AARG YouTube Channel

AARG's YouTube channel is live and operational! Currently, the channel showcases videos of presentations from the 2023 conference held in Zagreb, the 2024 conference in York and the 2025 conference in Trondheim.

We encourage you to explore the channel, watch the videos, and subscribe to stay updated on future uploads. Your support and engagement are vital in promoting our group's research outcomes and fostering a collaborative academic community.

To access the Aerial Archaeology Research Group's YouTube channel, please go here: Aerial Archaeology Research Group - YouTube.

Facebook and Bluesky

Don't forget to regularly visit the AARG pages on Facebook and on Bluesky to keep up to date with what's happening.

AARG Google Group

The AARG Google Group is a virtual place where members can interact with each other, exchange ideas, share new finding or even advertise job opportunities and vacancies. You can join the group here. You must be an AARG member to join the group, so do join AARG if you are not yet a member.

AARG Fund

Since 2021, AARG offers funding for its members and Working Groups for projects that further the objectives of the Group. Applicant who is currently a member of AARG and has been so for at least two consecutive years or is an employee of an organisation that has AARG corporate membership may submit a funding Application as Principal Investigator (PI).

Funding for project work will preferentially be awarded to Applications that demonstrably advance knowledge and understanding within the field of aerial archaeology. By this we mean projects in support of one or more of the following broad purposes: field or desk-based work, publication (excluding journal publication costs), public engagement, collection of airborne remote sensing data, education and training (of an individual or a group).

More information on who can apply, the scope of the Fund, as well as commitments expected of the successful candidate can be found on the Grants and Bursaries page of the AARG website.

AARG Student/Early Career Researchers Bursaries

AARG has a limited number of Student/Early Career Researcher bursaries for attendance at its annual meeting. These bursaries are intended to support *bona fide* students/early career researchers who are interested in aerial archaeology and wish to attend and present at the AARG conference.

If you wish to apply for a bursary, you should write an email headed with *Student/young researcher bursary application* to

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aargchair@gmail.com with the following information:

- your interests in archaeology and aerial archaeology,
- place of study/work,
- the name and contact details of a supervisor or employer (email) who can provide a reference,
- why you would benefit from attending the conference,
- an estimate of travel costs and accomodation to attend.

You should be willing to provide a poster, or an abstract for a paper under one of the conference session themes listed on the event website.

ISAP Fund

The International Society for Archaeological Prospection have a fund to provide support of up to £1000 to assist with members' projects (membership costs less per year than AARG does) that 'further the objectives of the Society'. Guidelines and application form from the ISAP web site.

AARGnews

AARGnews is published twice a year in April and October. It is a diverse and open forum for the discussion and exchange of new (and old) ideas related to aerial archaeology, remote sensing, and landscape studies.

Contributions for *AARGnews* need to be with the Editorial Team no later than **15th March** for the April issue and **15th September** for the October issue. Brief notes for contributors can be found on the next page.

And finally...

What the best-dressed aerial archaeologists are wearing in 2026...

Bob Bewley shows off the *Aerial Archaeology Gamg* T-shirt that was presented to him, Włodek Rączkowski and Martin Gojda during the AARG Conference in Plzeň. The banner text celebrates their special bithdays and reads *210 Years of experience ... and still flying over the past*. They were also presented with a traditional half-litre *Pilsner* beer mug with an engraved birthday message, *Pilsner Urquell* sunglasses and a party-style tie. See if you can spot them in the photos elsewhere in this issue.



Photo: Bob Bewley.

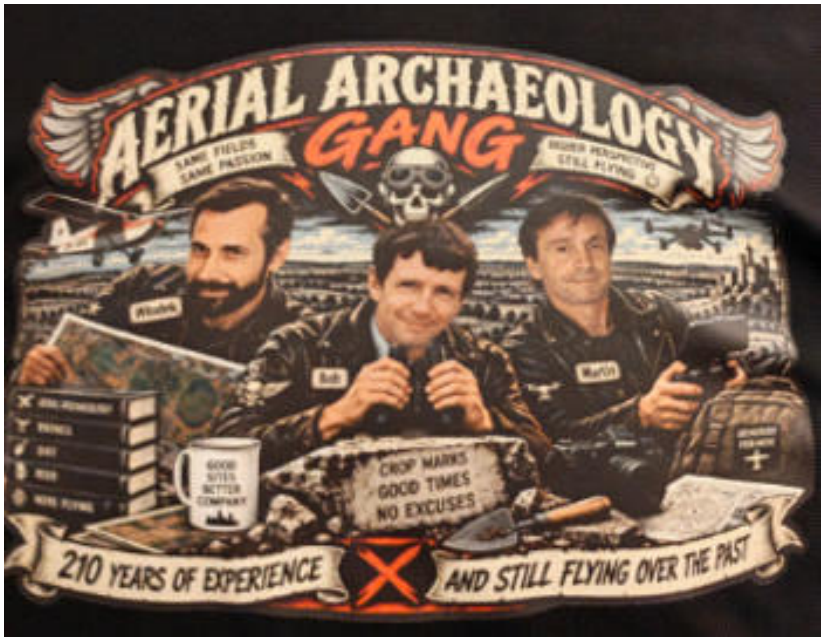


Photo: Carmen Miu Bem.

AARGnews Notes for Contributors

The *AARGnews* Editorial Team [1]

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AARGnews is the bi-annual newsletter of the Aerial Archaeology Research Group. It is a diverse and open forum for the discussion and exchange of new (and old) ideas related to aerial archaeology, remote sensing, and landscape studies. Past issues can be found at https://aargonline.com/wp/aarg-news/.

We welcome articles of any length and format. You can write about your research, methods, techniques, case studies, reviews, opinions, or anything else that might interest our readers. **Contributions should be inclusive and respectful to all**.

We would particularly welcome the inclusion of photographs, images, maps, plans, or other illustrations to support your article. If you have any questions or suggestions, please feel free to contact us.

Other than the requirement for contributions to be in English, there are no strict instructions for contributors, although there are some preferences which will help with the production of an issue as detailed below.

Format. Pleasse send your contribution as a .docx file with your last name and a short title in the filename (e.g., Jones-The dial of destiny.docx).

Articles should be up to a maximum of eight A4 pages in length including illustrations. For information, a typical page of text equates to approximately 700 words. Shorter informal contributions of three or four pages in length are also welcome. Longer contributions can be fitted in, if necessary, but may have to be held over to the next issue.

Please keep your formatting simple as we will edit your article to the *AARGnews* style. A single column of text on each page with figures and tables included where you would like to see them would be ideal. Footnotes should be kept to a minimum and certainly **not** used for references. They have to be manually inserted when setting up pages in *Affinity* and are a pain to manage. That said, the author's contact details (i.e., email address, *ORCID iD* if needed) are usually footnote 1.

Abstract. Please include a short abstract. Three or four lines should suffice.

References. Include a list of references at the end of the article in alphabetical order using the Chicago Manual of Style format, e.g.,

In the main text: Jones (2023).

In the list of references: Jones, I., 2023. "Remote sensing and the search for the Dial of Destiny" *AARGnews* 67: 1-3.

Images and tables. Good-quality JPGs at 300dpi are perfect and should be pasted in the text where you would like to see them along with a suitable caption. Do not send high-resolution TIF images as they will be too large to use! Tables should be included in the text at the desired position.

Please ensure that you have permission for images in your article. Appropriate acknowledgements should be included in the image/table captions.

Authors are responsible for securing permission to include any illustrations or other content subject to copyright. Without such approval, we regret that your article cannot be published in *AARGnews*.

Terminology. For consistency, the *AARGnews* Editorial Team has adopted **lidar** as its preferred spelling of the term for l*ight detection and ranging*, rather than **LiDAR**, in order to be consistent with the European Archaeological Council's Guidelines for the Use of Airborne Laser Scanning (Lidar) in Archaeology (2025). This is an editorial convention rather than a requirement imposed on contributors. *AARGnews* does not prescribe whether authors should use lidar or LiDAR in their submissions, but nevertheless strongly encourages them to consider the use of the term **lidar** to be consistent with the EAC guidelines.

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Submission deadlines. The deadlines for submission are **15th March** and **15th September** for the April and October issues respectively. You can also submit your contribution at any time, in which case it will be considered for the next issue.

To submit your article, please send it to the Editorial Team at editoraargnews@gmail.com.

'Offprints'. Contributors will be sent a link to the full PDF copy of the relevant issue of *AARGnews* together with a PDF 'offprint' of their paper.

We look forward to reading your articles and sharing them with the AARG community!

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