



New Year's Day is every man's birthday

Charles Lamb was a favorite in my high-school English literature, so let's enjoy his pithiness as we set out on 2019. Lidar is advancing—at the speed of light, I suppose—and we're all on board. We've made some significant changes to the magazine, aimed at providing an even more effective forum for authors and advertisers. We will publish six issues per annum, with a rigorous schedule, plus two special issues in 2019, on topical themes reflecting current directions in the industry: one on sensor integration trends and the other, aerial imaging trends. We've published the schedule, plus guidelines for prospective authors, at lidarmag.com/submissions, so please keep the articles flowing. If the stream proves to be in spate, we can publish digital-only as well.

We are about to celebrate the accomplishments of leaders in our field at the Lidar Leader Awards, a joint initiative of Diversified Communications and *LIDAR Magazine*. These will be presented in plenary session at the International LiDAR Mapping Forum during Geo Week in Denver at the end of January 2019. There are five categories, the first three the same as in 2018: Outstanding Personal Achievement in Lidar; Outstanding Team Achievement in Lidar (2-99 members); and Outstanding Enterprise Achievement in Lidar (groups of 100+). Outstanding Innovation in Lidar is a new category, to honor recent arrivals that appear to be ground-breaking but are not yet established. Eligible innovations can qualify from a company or an individual and can be technology, a product, or a business model in the realm of geospatial technologies, which must be on the market for less than one year, or not yet on the market but demonstrably operational. Also new is Outstanding University Achievement in Lidar, to recognize universities and their researchers. It is open to all universities, students and teams within the university, who must demonstrate an exceptional achievement within the realm of lidar technology and present it, in no more than five minutes, during a University Lightning Round on 28 January 2019, in front of a panel of experts and conference attendees. Presentations will be evaluated on: most commercially feasible; most innovative use of lidar; and "people's choice".

A large number of deserving candidates were nominated and the adjudication process was no less demanding than last year. Once again, the runners up will be announced from the podium, to be honored by the audience, then the winners will be invited to the dais to receive their awards. The successful nominations this year, given here in alphabetical order, embody a galaxy of lidar talent:

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OFFICIAL PUBLICATION



- Outstanding Personal Achievement in Lidar: Karl Heidemann, physical scientist, USGS (retired); Karen Schuckman, assistant teaching professor, Department of Geography, Pennsylvania State University
- Outstanding Team Achievement in Lidar: Global Mapper Team at Blue Marble Geographics; JALBTCX Team; Jie Shan, professor, Purdue University and Charles Toth, research professor, The Ohio State University (for their book, *Topographic Laser Ranging and Scanning*, of which the second edition appeared last year)
- Outstanding Enterprise Achievement in Lidar: Geoscience Australia (for ELVIS Elevation Infrastructure); NASA ICESat-2 Mission—NASA Goddard Space Flight Center; Woolpert
- Outstanding Innovation in Lidar: AEye (for its AE110 Artificial Perception System); ASTRALiTE (for its bathymetric lidar system for UAVs); Velodyne LiDAR (for its VLS-128)
- Outstanding University Achievement in Lidar: candidates will be chosen at the University Lightning Round on 28 January 2019.

We will know the winners soon—mark Tuesday 29 January 2019 in your calendar—and we will give them the opportunity to write short articles for the magazine, so you will know more about what they have done. Thank you for making such superb nominations.

The appearance of Shan and Toth above underlines the importance of authoritative books to our community. In this issue, David Maune provides information on an important new publication—the third edition of *Digital Elevation Model*

*Technologies and Applications: The DEM Users Manual*¹. Secondly, we review an account of lidar's technology, history, applications and people, aimed at a broad market². This popular volume contrasts with, yet complements Atlanta-based early adopter/researcher Adam Patrick Spring's magisterial history of terrestrial laser scanning, which is coming out in two parts in *PE&RS* in the first half of 2019. Part one deals with the origins of laser scanning in space and defense applications, whereas part two examines how applied solutions/technologies transitioned into industry. Both articles have been written and refined over more than ten years.

To enliven my editorials, I have been drawing to your attention, in a whimsical way, gems I have unearthed while scanning my archive, or plowing through issues of *The Economist*. Indeed, as I glance at pages torn from older issues of the newspaper of the dismal science, I am pleased that topics its journalists found interesting also matter in our world, for example the use of UAVs to carry medicines and blood samples (rather than pizza)³, the addition of solar panels to UAV airframes to extend endurance, or lidar discoveries at Preah Khan of Kompong Svay. An interesting piece late last year⁴ featured Gipsformel, the plaster-cast manufactory of Berlin State Museums.

Their products enable irreplaceable 3D works of art, such as friezes and statues, to be reproduced. The art world increasingly frowns, however, on taking molds directly from originals; the solution, of course, is laser scanning.

Another piece⁵ reminds me of my surveying lectures in the Fall of 1971, covering standards of length. On 16 November 2018, the Member States of the International Bureau of Weights and Measures (BIPM) voted to revise the *Système international d'unités* (SI, or the metric system), changing the world's definition of four of its base units. All SI units will now be defined in terms of constants that describe the natural world. This will ensure the future stability of SI and facilitate the use of new technologies, including quantum technologies, to implement the definitions. The kilogram, ampere, kelvin and mole are redefined in terms of constants; the new definitions, which come into force on 20 May 2019, are based on fixed numerical values of the Planck constant, the elementary charge, the Boltzmann constant, and the Avogadro constant, respectively. This is a dramatic advance, yet the US is one of a handful of countries, such as Liberia and Myanmar, that have not adopted SI. So UAV lidar folk can continue to claim two inches from 100 meters, 5 centimeters from 300 feet, or, perhaps, both of the above. Should we sink a pint to that?



A. Stewart Walker // Managing Editor

1 Maune, D. and A. Nayegandhi (eds.), 2018. *Digital Elevation Model Technologies and Applications: The DEM Users Manual*, 3rd edition, ASPRS, Bethesda, MD, 652 pp.
 2 Neff, T., 2018. *The Laser That's Changing the World: The Amazing Stories behind Lidar from 3D Mapping to Self-Driving Cars*, Prometheus Books, Amherst, New York, 314 pp.
 3 Anon, 2018a. Pies in the sky: drone deliveries take off, *The Economist*, 429(9115): 74-75, 27 October.
 4 Anon, 2018b. True copies: artistic reproduction, *The Economist*, 429(9122): 81, 15 December.

5 Anon, 2018c. Weighty matters: metric units, *The Economist*, 429(9118): 78-79, 17 November.