

# Correspondence

## Switch it off on eclipse day

The total solar eclipse in the United States on 21 August will allow millions of people to participate in planetary science (see *Nature* 545, 386; 2017). They can reflect, too, on solar energy, energy conservation and the reliability of electrical systems based on alternative energy.

Commercial solar-power production during the partial eclipse in California, for example, will drop from around 9 to 3 gigawatts between 9:00 and 10:30 local time, rising back to about 9 GW by noon. The California Independent System Operator is procuring extra resources to compensate.

Alternatively, those enjoying the eclipse could simply cut their electricity usage for the duration. The president of the California Public Utilities Commission, Michael Picker, suggests that such a community effort would send a message to the US Department of Energy in response to Secretary Rick Perry's request for a review of the possible negative effects of alternative energy on the electrical distribution system. **Steve Elgar** *Woods Hole Oceanographic Institution, Massachusetts, USA.* [elgar@whoi.edu](mailto:elgar@whoi.edu)

## Philanthropic risks can hit home runs

As an adviser to medical-research foundations on effective donation (see C. Fiennes *Nature* 546, 187; 2017), I contend that philanthropic capital has an intrinsic advantage over public funding: it thrives on risk. This encourages the testing of bold ideas, even when there's a high chance they might not work out.

Philanthropic capital can withstand failed research outcomes more readily than can public or commercial capital because it is not subject

to government processes or shareholders' expectations. It can be swiftly channelled into cutting-edge research that is high risk and high reward. Although the conventional success rate may be lower, the fruitful hits are home runs. And even when fundees fail to fulfil their objectives, a clear answer can count as a hit in itself.

Ideas that test positive open the door to government and commercial capital. In the mid-1990s, for instance, Mike Milken gave a small, unrestricted grant through the Prostate Cancer Foundation to James Allison to explore the promising, yet under-appreciated, field of cancer immunotherapy. Allison went on to win government and commercial funding to realize that promise and bring lifesaving treatments to market.

As well as the "science of philanthropy" that Fiennes calls for, we need to ask how philanthropic funding can catalyse change beyond that achievable through conventional funding sources.

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## Manage chemicals and waste globally

The conferences of the parties to the Basel, Rotterdam and Stockholm Conventions in spring 2017 called for better global management of chemicals and waste to meet the United Nations Sustainable Development Goals (particularly 3, 6, 12 and 14; see [go.nature.com/2kw1xsy](http://go.nature.com/2kw1xsy)). As delegates from the Chinese government and the Basel Convention Regional Centre for Asia and the Pacific, we are concerned about the loss of political will among developed nations to provide the technical assistance to back such plans in developing countries. A reason for this reluctance

might be that funding for tackling global environmental issues is already stretched. Another US\$4.37 billion will be needed to implement the Stockholm Convention in 2018–22, and the global economic downturn has shrunk the Basel Convention Trust Fund, which covers such technical assistance.

Fortunately, some companies and non-governmental organizations (NGOs) are cooperating to improve the management of industrial chemicals and waste. For example, the urban mining company GEM based in Shenzhen, China, has instigated recycling schemes. And NGOs such as IPEN ([www.ipen.org](http://www.ipen.org)) are publicizing the Stockholm Convention's moratorium on the recycling of persistent organic pollutants.

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## Taxonomy: refine rather than stabilize

Conservation policies should be embracing the insights into evolutionary history revealed by the refinement of taxonomic knowledge. Stephen Garnett and Les Christidis instead view these refinements as "taxonomy anarchy" that destabilizes species lists (*Nature* 546, 25–27; 2017).

They argue that taxonomic inflation can artificially increase the count of species under threat, citing a doubling in the number of recognized ungulate species. But, as well as updating classifications scarcely changed since the nineteenth century (see C. G. Groves and P. R. Grubb *Ungulate Taxonomy*; Johns Hopkins Univ. Press, 2011), that doubling of diversity highlights the high conservation priority both of the spiral-horned antelopes in African biodiversity hotspots and the evolutionarily distinct lineages of goats and sheep in

Northern Hemisphere mountain ranges.

In mapping the evolutionary history of what it classifies, a taxonomy is much more than a species list. We see aspirations to stabilize taxonomy as a *cul-de-sac* that further isolates conservation policy from science. A proactive strategy should incorporate this new knowledge to mitigate the impacts of unprecedented global change on ecosystems and their dependent species.

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## CRISPR book review — Doudna responds

Nathaniel Comfort suggests that the purpose of our book *A Crack in Creation* is to show that I am "the true hero of CRISPR" (*Nature* 546, 30–31; 2017). On the contrary, the book offers my personal reflections as CRISPR–Cas gene editing took off, viewed from the perspective of my research team at the University of California, Berkeley.

My aim in writing this book with my former student Sam Sternberg was to demonstrate the importance of basic research and the value of collaboration in developing this groundbreaking technology. It describes the crucial scientific contributions and insights of our collaborators Emmanuelle Charpentier and her student Krzysztof Chylinski, for example.

The success of our approach has now been abundantly confirmed by the rapid application of CRISPR–Cas gene editing in virtually all types of cells and settings.

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1) Light Activated Day Night Switch using Transistors. The first diagram shows how the circuit can be configured using transistors, the second and the third circuits demonstrate the principle by using CMOS ICs while the last circuit explains the same concept being implemented using the ubiquitous IC 555. Let's evaluate the circuits one by one with the following points: The first figure shows the use of a couple of transistors in association with a few other components like resistors for the construction of proposed design. The transistors are rigged as inverters, meaning when T1 switches, T2 is A deep partial eclipse will be great fun too, despite their being no Totality. As a trade-off, those who witness Totality will not experience such dramatic darkness. Popular in Space Travel + Astronomy. More. These cookies are necessary for the website to function and cannot be switched off in our systems. They are usually only set in response to actions made by you which amount to a request for services, such as setting your privacy preferences, logging in or filling in forms. You can set your browser to block or alert you about these cookies, but some parts of the site will not then work. I want to completely switch off Eclipse validation for all languages. This is not the same as disabling validation of various patterns, I don't want Eclipse to even try to validate. Version is Juno. eclipse validation. The Validation page of the Preferences window lists the validators available in your project and their settings. To disable individual validators, clear the check boxes next to each validator that you want to disable. Each validator has a check box to specify whether it is enabled for manual validation or on a build. see here. share | improve this answer |.