



**Week ending Friday, November 20, 2020**

### Superbolts

Scientists have for the first time documented how often a rare breed of extreme lightning bolts can occur in the skies above Earth and how bright they are. These “superbolts” can be 1,000 times brighter and stretch hundreds of miles farther than their more common counterparts. Writing in the American Geophysical Union’s *Journal of Geophysical Research: Atmospheres*, Los Alamos researchers say roughly one-third of 1%, or 1 in every 300 lightning strikes, are superbolts. Recent research finds that these extreme flashes occur in rare, positively charged cloud-to-ground events rather than the more common negatively charged cloud-to-ground discharges.

### Earthquakes

A sharp temblor in the central Philippines wrecked a municipal building in Biliran province.

- Earth movements were also felt in west-central Sumatra, northeastern India’s Mizoram state, western Pakistan, west-central Texas and interior Southern California.

### Tropical Cyclones

Former Category-5 Hurricane Iota killed dozens as it ravaged parts of Colombia and Central America. It was the strongest named storm on record to strike Nicaragua when it made landfall in the same area as Hurricane Eta, which caused widespread devastation two weeks earlier. It was also the strongest storm so far of the 2020 Atlantic hurricane season.

- After leaving at least 67 dead as the strongest typhoon to strike the Philippines this year, Vamco later pummeled the same area of central Vietnam already ravaged by several other storms in 2020.
- Cyclone Alicia, the first of the season in the region, formed briefly in the southwestern Indian Ocean.

### Pervasive Plastic

Researchers have found that most whales, turtles and fish may be swimming the world's oceans with plastic in their bodies. Writing in the journal *Global Change Biology*, Marga Rivas at Spain's University of Almería and her team analyzed data from 112 published studies from the past decade. They conclude that 66% of all sea turtles had macroplastics and microplastics in their systems, while 55% were contaminated with a class called microfibers. The highest rates of plastic contamination were in the Mediterranean and northeastern Indian Ocean.

### Rhino Return

Conservationists will repopulate Zimbabwe's Gonarezhou National Park with black rhinos before the end of the year, bringing the critically endangered animals back 27 years after they went locally extinct. The Gonarezhou Conservation Trust has hired 39 game rangers, mainly from areas around the park, and trained them to protect the returning rhinos. South Africa's CAJ News reports the animals first went extinct in the area sometime in the 1930s or 1940s. A similar reintroduction project between 1969 and 1977 saw rhino numbers increase to about 140 before a civil war in neighboring Mozambique caused the park to close. By 1994, the rhinos

were extinct there again.

### Marine Heat Wave

Climate experts warn that the third marine heat wave in four years is developing off northern New Zealand as the country enters the southern summer. Such a warm-water designation means the ocean temperatures have been cooler 90% of the time in the past. “We’re not even at the peak of our sea-surface temperatures, which typically occur over January and February,” said meteorologist Ben Noll of the National Institute of Water and Atmospheric Research. Heat waves at sea can alter the marine ecosystem, bringing in species of fish and other aquatic life from more tropical waters. They can affect the land environment as well. The 2018 marine heat wave off northern New Zealand led to a population boom of some land animals, including rodents.

### Stromboli Blast

A sudden eruption of ash and lava inside a volcano on the Italian island of Stromboli sent debris cascading down the slopes of its namesake volcano.

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