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20 potential Earth-like worlds found

THERE could be more habitable planets out there than we thought. An analysis of data from the Kepler space telescope has revealed 20 promising worlds that might be able to host life.

The list of potential worlds includes several planets that orbit stars like our sun. Some take a relatively long time to complete a single orbit, with the longest taking 395 Earth days and others taking weeks or months (arxiv.org/abs/1710.06758).

The exoplanet with a 395-day year is one of the most promising worlds for life on the list, says Kepler team member Jeff Coughlin. Despite being slightly smaller and colder than Earth, it is still warm enough and big enough to hold the liquid water essential for life as we know it. "If you had to choose one to send a spacecraft to, it's not a bad option," says Coughlin.

The team is 70 to 80 per cent sure that these planets are real, he says. They all come from the original Kepler mission, which looked at the same area for just four years before its aiming ability was crippled by its reaction wheels breaking in 2013. This means that we have only seen each of these worlds once or twice, and the signals could be wobbly. Other observatories will need to double-check the signals, Coughlin says.

The short observation period is also the reason the planets weren't spotted earlier: the team needed more data to separate real signals from false alerts.

In order to build the list, the Kepler team mixed up signals from the potential exoplanets, several that had already been confirmed and a few fake ones. The fake planets helped check for errors and rule out bad signals, cutting the list down to 20.

If confirmed, these would be some of the most promising worlds out there to host life because of their long years and sun-like stars, says Abel Mendez, director of the Planetary Habitability Lab at the *Arecibo* Observatory. John Wenz ■



LEON NEAL/GETTY

Farmed for their horns?

Legal trade in rhino horn could dwarf illegal one

WHAT is the best way to stop the trade in rhino horn? A new study claims South Africa could, legally and sustainably, supply enough to meet current demand. But it might not prevent poaching.

About 25,000 rhinos remain in Africa, mostly white rhinos in South Africa. But the nation has experienced a wave of poaching since 2008. More than 500 rhinos have been killed this year up to July. Poachers take the horn, which is sold in Asia as "medicine" and as a trophy.

Some have proposed creating a legal trade. The horns can be removed without killing the rhino and grow back, so in theory ivory can be obtained sustainably. The idea is to flood the market with legal ivory, cutting the price and reducing poachers' incentive.

In April, South Africa ended its eight-year moratorium on trading rhino horn, and some local rhino owners have started selling. The biggest mogul is John Hume, who has 1500 rhinos and a cache of more than six tonnes of ivory. Hume says his mission is to save

rhinos. He partly funds his work by sawing off horns and selling them at auction. In August, he sold 500 kilograms online.

Yet until now, we haven't even known how much rhino horn can be safely supplied. So Andrew Taylor of the Endangered Wildlife Trust in South Africa and colleagues examined four ways

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to obtain it legally: dehorning, natural deaths, trophy hunting and selling stockpiled horn.

The group found that South Africa could produce 5319 to 13,356 kilograms a year. They estimate that 5300 kilograms enters the black market from South Africa every year (*Biological Conservation*, doi.org/cfp6).

"Revenues from horn sales could be ploughed back into anti-poaching," says Taylor. Defending rhinos is expensive and many rhino owners "sell them because

they can't afford the price".

But others object. "It is a terrible idea," says David Blanton of Serengeti Watch.

Instead of merely meeting existing demand, the extra supply might boost it – keeping prices high and poachers incentivised.

Legalisation "creates the perception that buying these products is fine", says Andrea Crosta of the Elephant Action League. China's growing wealth is creating "hundreds of millions of consumers of rhino horn".

Worse, the legal trade could be subverted. An investigation by the Elephant Action League revealed Asian dealers moving products via a web of couriers, including the Chinese navy. They could exploit a legal trade, says Crosta. "The legal system will create an opportunity to launder all rhino horns from Africa and Asia."

The real solution is action by Asian governments, he says.

In 2008, the Convention on International Trade in Endangered Species of Wild Fauna and Flora allowed the sale of 108 tonnes of ivory. Poaching carried on. "I guess we've already forgotten that it did not work," says Quyen Vu of Education for Nature – Vietnam. Adam Popescu ■