

Science and Digital Briefs

By Shopper Editor Dave Bunting

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We can help Ukrainians with charitable donations:

Food, medical, etc. help:

Ukraine Red Cross:

shpr.fyi/ukraineredcross

Samaritans Purse:

shpr.fyi/samaritanpurse

Mercy Corps:

mercycorps.org/donate

Military help:

war.ukraine.ua/donate/



Vitamin D deficiency worsens COVID

Patients with a vitamin D deficiency were 14 times more likely to have a severe or critical case of COVID-19. What's more, the mortality rate for those with insufficient vitamin D levels was 25.6%, compared with 2.3% for those with adequate levels.

Info: shpr.fyi/vitddefcovid



Twang a guitar string stretched from Earth to the Moon

Gravitational waves may be detectable by measuring changes in the earth-moon distance.

Black holes close together spiral gradually toward each other under their mutual gravitational attraction until they finally collide and combine into a single black hole.

When this happens, a gravitational wave is created that spreads out through the universe like water waves on a pond.

These waves change the distance between objects but the change in distance within our limited scientific measuring capability is extremely small. Waves that have been detected recently have varied the distance between two reflectors over a mile apart by a few thousands of the width of a human hair.

If we could accurately measure the distance between two reflectors over much longer distances, we could much more easily detect the waves and detect smaller ones.

NASA knows the distance to reflectors placed on the Moon by the Apollo astronauts to a precision of less than one quarter inch. By complex calculations, they can determine the exact distance at any specified time between any point on Earth to the Moon reflectors.

Gravitational waves twang the distance between the Earth and the Moon "like a guitar string" stretched that distance.

Researchers propose using the variations in distance between the Earth and the Moon, which can be measured with a precision of less than a centimeter, as a new gravitational wave detector within a frequency range that current devices cannot detect. Info: shpr.fyi/twangmoon

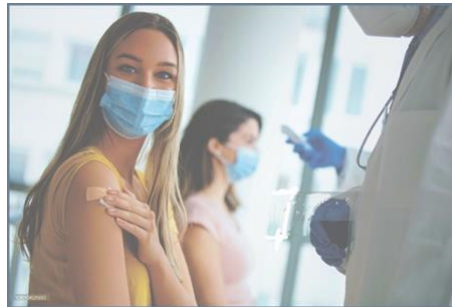


Recycled plastic bottles can capture carbon dioxide from the air

CO₂ capture systems using PET-derived porous carbon can realize plastic and carbon closed loops in industrial-scale applications. Such multi-purpose systems could become a feasible alternative to both conventional CO₂ capture and plastic waste management technologies.

Most importantly, the proposed synthesis routes have great potential to meet the sustainable development goals (SDGs) put forth by the United Nations. "The upcycling of plastic waste-derived porous carbon for CO₂ capture is a promising approach to meet multiple SDGs, since it can mitigate climate change and plastic pollution simultaneously and facilitate sustainable recycling of discarded PET plastic bottles in urban areas," speculates Prof. Ok.

Info: shpr.fyi/bottlewasteco2



Vaccinated parents protect children

Having one fully vaccinated parent reduced the risk for infection with the original strain of SARS-CoV-2 in children by 26%, while having two fully vaccinated parents cut the risk by nearly 72%, according to the researchers. Against the Delta strain of the virus, having one fully vaccinated parent — including a booster dose — was associated with a 20.8% decreased risk for infection in children, while having two fully vaccinated parents was associated with a 58.1% decreased risk.

Info: shpr.fyi/parentvacc

Check out this week's Bible Readings on page 6 which includes Mary discovering Jesus risen: *"Mary stood outside the tomb crying. As she wept, she bent over to look into the tomb and saw two angels in white, seated where Jesus' body had been, one at the head and the other at the foot.*

"They asked her, 'Woman, why are you crying?' 'They have taken my Lord away,' she said, 'and I don't know where they have put him.'

"At this, she turned around and saw Jesus standing there, but she did not realize that it was Jesus.

"'Woman,' he said, 'why are you crying? Who is it you are looking for?' Thinking he was the gardener, she said, 'Sir, if you have carried him away, tell me where you have put him, and I will get him.'

"Jesus said to her, 'Mary.' She turned toward him and cried out in Aramaic, 'Rabboni!' (which means Teacher)." John 20: 11-16 NIV

Dave Bunting, Apr. 11, 2022
References in links below items.
See these columns on my blog daverant.com