

Best of Last Week—Micrometeoroid hits James Webb telescope, speeding up Unix programs, native herbs help diabetics

June 13 2022, by Bob Yirka



```
rm -f "#file2"
...
mkfifo "#file2"
...
{ cat scripts/input/100M.txt >"#file2" & }
{ tr -cs A-Za-z "\\n" <"#file4" >"#file6" & }
{ /home/eurosys21/pash/runtime/auto-split.sh "#file2" "#file14" "#file15" & }
{ tr A-Z a-z <"#file32" >"#file17" & }
{ tr A-Z a-z <"#file15" >"#file18" & }
{ cat "#file33" "#file34" >"#file19" & }
{ /home/eurosys21/pash/runtime/auto-split.sh "#file6" "#file19" "#file20" & }
{ sort <"#file35" >"#file22" & }
{ sort <"#file20" >"#file23" & }
{ sort -m "#file36" "#file18" "#file8" & }
{ /home/eurosys21/pash/runtime/auto-split.sh "#file2" "#file23" & }
{ uniq <"#file38" >"#file24" & }
{ uniq <"#file26" >"#file25" & }
{ cat "#file39" "#file40" >"#file10" & }
{ uniq <"#file30" >"#file11" & }
{ /home/eurosys21/pash/runtime/eager.sh "#file14" "#file32" "/tmp/pash_eager_intermediate" & }
{ /home/eurosys21/pash/runtime/eager.sh "#file17" "#file33" "/tmp/pash_eager_intermediate" & }
{ /home/eurosys21/pash/runtime/eager.sh "#file18" "#file34" "/tmp/pash_eager_intermediate" & }
{ /home/eurosys21/pash/runtime/eager.sh "#file19" "#file35" "/tmp/pash_eager_intermediate" & }
{ /home/eurosys21/pash/runtime/eager.sh "#file22" "#file36" "/tmp/pash_eager_intermediate" & }
{ /home/eurosys21/pash/runtime/eager.sh "#file23" "#file37" "/tmp/pash_eager_intermediate" & }
{ /home/eurosys21/pash/runtime/eager.sh "#file25" "#file38" "/tmp/pash_eager_intermediate" & }
{ /home/eurosys21/pash/runtime/eager.sh "#file28" "#file39" "/tmp/pash_eager_intermediate" & }
{ /home/eurosys21/pash/runtime/eager.sh "#file29" "#file40" "/tmp/pash_eager_intermediate" & }
{ /home/eurosys21/pash/runtime/eager.sh "#file10" "#file41" "/tmp/pash_eager_intermediate" & }
{ comm -13 scripts/input/dict.txt "#file41" & }
source /home/eurosys21/pash/runtime/wait_for_output_and_sigpipe_rest.sh ${!}
rm -f "#file2"
...
```

Researchers have created a technique that boosts the speeds of programs that run in the Unix shell, a ubiquitous programming environment created 50 years ago, by parallelizing the programs. Credit: Christine Daniloff, MIT

Space science was presented with a few obstacles last week as a team at NASA announced that [one of the mirrors on the James Webb space telescope was struck by a micrometeoroid](#) in May. Fortunately, testing has shown that the telescope continues to function normally. Also, researchers at JAXA [released the first analysis of rocks plucked from a speeding asteroid](#). Thus far, it appears that the asteroid is made from the same stuff as our sun. And Håvard Grip, the chief pilot for NASA's Mars helicopter project Ingenuity, announced that for continued operation, the helicopter [requires a patch from Earth to compensate for a failed sensor](#).

In technology news, a combined team from the University of Cambridge and Imperial College of London found that [devices made of earth-abundant solar pixels could produce hydrogen for weeks](#) without having to use fossil fuels. Also, a technique developed by researchers at MIT was found to [significantly boost the speed of programs that run in the Unix shell](#) by parallelizing them, allowing them all to run faster. And a group with members from IBM, MIT and the University of California, San Diego, developed a [a machine-learning method that hallucinates its way to better text translation](#). Also, a team of engineers at the University of Pennsylvania developed [a chip that can classify nearly 2 billion images per second](#).

In other news, a team of researchers at the Buck Institute, demonstrated [a link between diet, circadian rhythms and eye health](#) in flies. As just one example, they found processes occurring in the eyes of the flies that were part of the aging process. Also, a team of researchers at the University of Southern California found evidence that suggests the Earth's [inner core oscillates](#). And finally, a team at the University of Nottingham reported that [traditional native Indian medicine can be effective in treating type 2 diabetes](#)—some of the herbs used in the Ayurveda medical system developed in South Asia were found to maintain blood sugar levels in diabetics.

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