

Sunday, October 4, 2026

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Maya: Good morning, and welcome to the Morning Science Briefing. I'm Maya, he's Devon, and it is Sunday, October fourth, twenty twenty-six. Today we've got NASA's Roman telescope seeing starlight for the first time, Google sending A I chips to orbit, the map of energy inside parasites that could become new drugs, and fifty seven brand new deep sea species. Plus the space weather check. Let's get into it.

Devon: Let's start with a milestone thirty four years in the making, Maya. NASA's Nancy Grace Roman Space Telescope has seen starlight for the first time.

Maya: Roman is the big survey telescope set to launch in the next couple of years, and the news this week is about its coronagraph, an instrument built at the Jet Propulsion Laboratory. Its job will be to block the blinding glare of a star so astronomers can see the faint planets and dust disks hiding next to it. On September twenty second, NASA opened the coronagraph's cameras for the first time.

Devon: And the fine guidance worked. NASA likens it to holding a laser steady on a dime from about a hundred fifty miles away. A test on a faint star in the Large Magellanic Cloud came back in focus, and a second test on September twenty seventh, with the detectors cooled down, confirmed the pointing. Coronagraph scientist Vanessa Bailey said the observation confirms the instrument can produce a focused image.

Maya: Now comes the long commissioning road, tuning the instrument for its real job, direct imaging of exoplanets. Roman's coronagraph is a technology demonstration, but it's the dress rehearsal for the future flagship telescope that will one day image an Earth like world. This was the first step, and it worked.

Devon: From imaging planets to building computers in orbit. On Thursday, SpaceX launched Google's Project Suncatcher into space.

Maya: At about two thirty two P M Eastern time on October first, a Falcon nine lifted off from Vandenberg Space Force Base in California. Aboard was a refrigerator sized satellite carrying four Google Tensor Processing Units, one of about one hundred thirty payloads on the Transporter eighteen rideshare mission.

Devon: The idea sounds like science fiction. Put data centers in orbit, where solar power is free and constant and cooling is easy, and run A I workloads up there. Google's Moonshot lab announced the project last November and built the satellite with Planet. The chips run Google's Gemma models for about fifteen minutes at a time before cooling shutdowns. Google says contact has been confirmed and the satellite is operating as expected.

Maya: Analysts are skeptical about the economics. One estimate says it would take about ten thousand such satellites to match a single one gigawatt ground data center, and launch costs would have to fall to around two hundred dollars per kilogram. So this is a first experiment, not a business plan yet. But the physics of free

Cell. And they found thirty three protein families that show up in at least two of these parasites but are completely absent from human mitochondria.

Devon: Which is exactly what you want for a drug target, something the parasite needs and humans don't have. We already know this strategy works. Atovaquone, a malaria drug, attacks the parasite's mitochondria. So these thirty three are genuinely promising leads for diseases that mostly hit the developing world.

Maya: And the basic science is wild. Acanthamoeba, the brain eating amoeba, turns out to have the most complex energy machinery of any organism known, and it can switch between aerobic and anaerobic respiration. Giardia's so called mitochondrion has just fifty nine proteins. And the data suggest mitochondria arrived late in the evolution of complex cells, which rewrites a piece of the story of life itself.

Devon: From parasites to the deep sea, where scientists just named fifty seven species that nobody knew existed.

Maya: Off the coast of Argentina, the Mar del Plata Canyon plunges more than three thousand five hundred meters down. Last year, the Schmidt Ocean Institute's research vessel Falkor too sent its robot submersible SuBastian down there, and at a workshop in Buenos Aires this July, taxonomists went through the haul. The tally, announced this week, is fifty seven new species and five new genera.

Devon: Twenty copepods, twenty two echinoderms, fourteen cnidarians, and one scaphopod, a tusk shell. And the star of the show is a sea cucumber with horn like appendages that the team nicknamed Loki the Sea Cucumber, genus Peniagone.

Maya: The work was led by the Nippon Foundation's Nekton Ocean Census together with the Schmidt Ocean Institute and Argentina's national science council, with principal investigator Daniel Lauretta. The deep ocean is the largest habitat on Earth and we are still in the age of discovery down there. Fifty seven new species from one canyon, and we barely started.

Devon: Now the space weather check, from Noah's Space Weather Prediction Center. And it's been an active morning.

Maya: It has. A fast stream of solar wind from a coronal hole is washing over Earth right now, and Noah issued a G one minor geomagnetic storm alert this morning after the K index hit five at eleven twenty two UTC, that's about four twenty two A M our time. There was also a K index of four alert earlier in the morning. Active conditions are likely through today, with unsettled to active levels into tomorrow and Tuesday before easing off.

Devon: No solar radiation storms are expected, and no radio blackouts, so satellites and power grids should be fine. But the aurora outlook is worth a look if you're far north. At G one levels, the northern lights may be visible at high latitudes, possibly reaching the northern tier of the United States, places like northern Michigan and Maine.

Maya: For us in the Bay Area, that's a no. We'd need a much stronger storm to see auroras from Marin. That's your science morning. I'm Maya.